

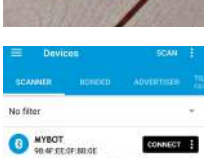
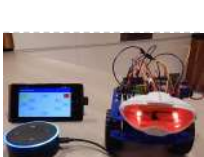
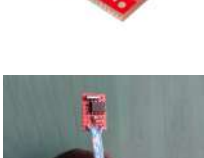
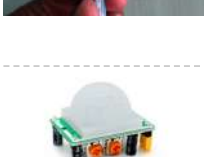


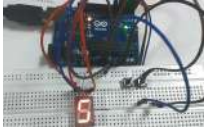
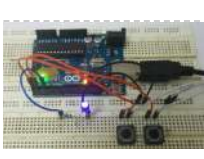
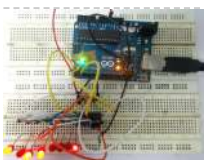
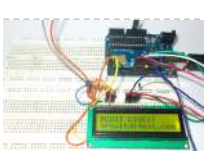
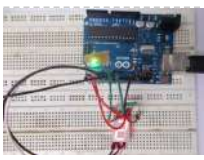
Use Arduino for Projects

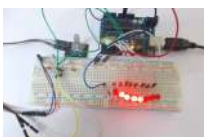
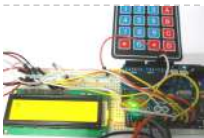
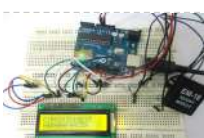
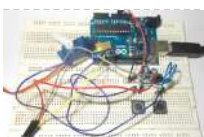
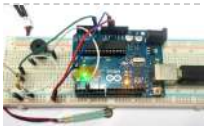
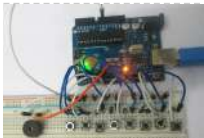
Advanced View Arduino Projects List

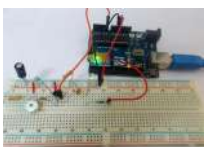
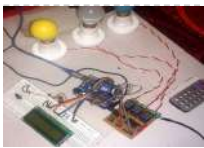
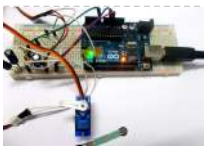
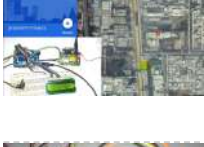
List of Projects using arduino with advance view:

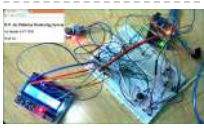
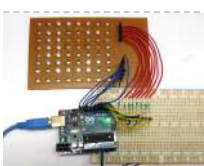
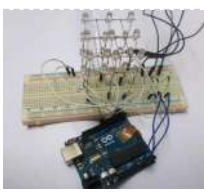
1.  [Arduino Based Distance Measurement using Ultrasonic Sensor](#) Ultrasonic sensors are great tools to measure distance without actual contact and used at several places like water level measurement, distance measurement etc. This is an efficient way to measure small distances precisely. In this project we have used an Ultrasonic Sensor to determine the distance of an obstacle from..... Listed under: [Sensor – Transducer – Detector Projects](#)
2.  [LPG Leakage Detector using Arduino](#) While LPG is an essential need of every household, its leakage could lead to a disaster. To alert on LPG leakage and prevent any mishappening there are various products to detect the leakage. Here we have developed an Arduino based LPG gas detector alarm. If gas..... Listed under: [Other Projects](#)
3.  [Live Temperature and Humidity Monitoring over Internet using Arduino and ThingSpeak](#) Humidity and Temperature are very common parameters for measuring at many places like farm, green house, medical, industries home and offices. We have already covered Humidity and Temperature Measurement using Arduino and displayed the data on LCD. In this IoT project we are going to..... Listed under: [Temperature Measurement Projects](#)
4.  [Arduino Based Digital Thermometer](#) Thermometers are useful apparatus being used since long time for temperature measurement. In this project we have made an Arduino based digital thermometer to display the current ambient temperature and temperature changes on a LCD unit in real time . It can be deployed in houses, offices, industries etc..... Listed under: [Metering – Instrument Projects](#)
5.  [Frequency Counter using Arduino](#) Almost every electronic hobbyist must have faced a scenario where he or she must measure the frequency of signal generated by a clock or a counter or a timer. We can use oscilloscope to do the job, but not all of us can afford an..... Listed under: [Calculator Projects](#)
6.  [Interfacing Arduino with Raspberry Pi using Serial Communication](#) Raspberry Pi and Arduino are the two most popular open source boards in Electronics Community. They are not only popular among Electronics Engineers but also among school students and hobbyists, because of their Easiness and Simplicity. Even some people just started liking Electronics because of Raspberry..... Listed under: [Other Projects](#)
7.  [Interfacing TFT LCD with Arduino](#) Today, we are going to Interface 2.4 inch TFT LCD Shield with Arduino. By using this color TFT LCD shield we can show characters, strings, blocks, images etc on the color TFT LCD. And we can use this TFT Shield in many applications like: Security..... Listed under: [LCD Projects](#)
8.  [How to Send Data from Arduino to Webpage using WiFi](#) Wireless communication between Electronic devices and modules is very important, to make them 'Fit' in the World of Internet of Things. HTTP protocol and HTML language have made it possible to transfer the Data anywhere in the world, over the web. We have already covered..... Listed under: [Other Projects](#)
9.  [Sending Email using Arduino and ESP8266 WiFi Module](#) We are moving towards the World of Internet of Things (IoT). This technology plays a very important role in the Electronics and Embedded system. Sending an Email from any Microcontroller or Embedded system is very basic thing, which is required in IoT. So in this article,..... Listed under: [Other Projects](#)
10.  [Wireless Notice Board using GSM and Arduino](#) Wireless notice board is very selective term for this project, as it has a very wide scope rather than just being a simple notice board. First we should understand the purpose of this project, in this system we can display a message or notice to..... Listed under: [Other Projects](#)
11.  [Pressure Sensor BMP180 Interfacing with Arduino Uno](#) In this tutorial we are going to design a Barometric Pressure Measuring System using BMP180 and ARDUINO. First of all for interfacing BMP180 to ARDUINO, we need to download a library specifically designed for BMP180. This library is available at: <https://github.com/adafruit/Adafruit-BMP085-Library> After attaching that library, we..... Listed under: [Sensor – Transducer – Detector Projects](#)
12.  [Arduino-based Ultrasonic Radar System via IOT](#) Abstract RADAR is an object-detection system which uses radio waves to determine the range, altitude, direction, or speed of objects. Radar systems come in a variety of sizes and have different performance specifications. Some radar systems are used for air-traffic control at airports, and others..... Listed under: [Medical – Health based Projects](#)
13.  [Arduino 101 Curie iOS Pulse Sensor](#) I want use the Genuino 101 by Intel and Arduino for a project that regards health, but I want to use all the characteristics of the Arduino 101. One of most important characteristics of this board, I think, is the BLE connection. Then I want..... Listed under: [Sensor – Transducer – Detector Projects](#)

14.  [Build A Arduino Bluetooth Vehicle](#) Before I even began to think about how my final chassis was going to look like I became obsessed with the idea of eliminating all of the useless space that plagued my previous designs. I wanted to reduced the car to its most essential components..... Listed under: [Car Projects](#)
15.  [Control Door Lock Remotely Using Smartphone](#) Introduction Hi, friends. I came to this idea of controlling a door latch/lock remotely using a smartphone when I saw many people many times forget to carry latch/lock keys when they leave the house for a short trip, or the door gets latched accidentally while..... Listed under: [Security – Safety Projects](#)
16.  [Quizmo](#) This project is related to developing a handy gadget to help kids practice basic arithmetic operations. I decided to make it as my kids were very lazy to look into the books and come back very soon saying that they have done it (specially multiplication..... Listed under: [Calculator Projects](#)
17.  [Plan your Holiday with Smart Power Planner](#) Introduction Holiday times! It's the time we get a vacation to have fun and be relaxed. Everyone loves to make their holiday, an unforgettable one. But there will always be somethings that can bother you and spoil the holiday fun. As an example, while you..... Listed under: [Wireless Projects](#)
18.  [Arduino HackHD Time-Lapse Dolly](#) Story This project was inspired by someone else who made an Arduino time-lapse dolly (suprise surprise). However that project was published some years back and I have lost the link to it. Of course time-lapse is not that exciting anymore but 5 years ago it..... Listed under: [Clock – Timer Projects](#)
19.  [IoT Controlled Snow Machine](#) The most homemade snow machine you've ever seen. Made from a hairdryer, polystyrene and MKR1000. Controllable from anywhere in the world* Things used in this project Hardware components Arduino MKR1000 × 1 USB-A to Micro-USB Cable × 1 Apple USB Powe Adapter × 1 Jumper..... Listed under: [Other Projects](#), [Projects](#)
20.  [Build A Grill & Deck-Door Monitor Using Arduino](#) Story We use our barbecue grill and our deck frequently. After once leaving the grill on all night, I wanted an easy way to check to make sure the grill is off before going to bed. This is especially important since our grill is tapped..... Listed under: [Other Projects](#)
21.  [Give Your BLEBot a New Name](#) At the Hackster Hardware Meetup Seattle, we had a bunch of BLE Bot 9000 robots. The problem was that all of the bots exposed the same services and names, so you can't choose the robot you want to control. The solution to controlling your bot..... Listed under: [Other Projects](#)
22.  [Tertiarm – 3d Printed Robot Arm](#) This is first version of my low cost 3d printed robot arm. It is based on Ikea Tertial lamp. I choose it because it has very good kinematic with using springs to unload servos. So you can use different number of springs to achive diffrent..... Listed under: [Robotics – Automation Projects](#)
23.  [Knock To Open Treasure Chest](#) Preface My daughter asked me to build her a treasure chest that she could use to store her most valuable things. Obviously she demanded it to have some kind of a locking mechanism so only she could open the box. First thought was to use..... Listed under: [Security – Safety Projects](#)
24.  [Arduino Bluetooth-controlled Mini-Lift](#) Story We love our workshop, but it has one downside (or maybe upside) - a large flight of stairs to the gallery. We constantly need to move parts and components between one floor and the other, so we've been plotting different ideas: drones, dogs, carrier..... Listed under: [Other Projects](#)
25.  [Build A Voice-Controlled Robot Using Arduino](#) Story Voice-controlled Robot Voice-controlled robot is both hardware and cloud solution in one piece. The main components are: 1. Alexa Skill - to interpret voice commands and translate them to Google Cloud Messaging messages - deployed to Heroku cloud 2. Android application - to receive..... Listed under: [Robotics – Automation Projects](#)
26.  [Humidity Display of Date, Time and Temperature](#) Story Have you ever wanted to make your own interface that can display the time, date, along with the temperature and the humidity? Well it's a lot easier than you'd think. A few important components are needed, as shown below. Arduino Uno/Nano Firstly we will..... Listed under: [Temperature Measurement Projects](#)
27.  [Serial Basic Hookup Guide](#) Introduction The Serial Basic is an easy to use USB to Serial adapter based on the CH340G IC from WCH. It works with 5V and 3.3V systems and should auto install on most operating systems without the need for additional drivers. It's a great lower..... Listed under: [Other Projects](#)
28.  [Arduino-Powered Water Bottle](#) Introduction: Drinking enough water is very important for our health. Drinking more water can lead to clearer skin, better overall health, improved productivity and brain function, increased energy levels, and even weight loss. In our busy lives, it is really hard to remember to drink..... Listed under: [Other Projects](#)
29.  [Complete Digital Clock including Alarm and Motion Sensor](#) I have done several designs of digital clocks for Arduino using LEDs and LCD displays, but this one is more special because I added other features like alarm and motion sensor (PIR). Main features PIR (Presence Infrared Sensor) RTC (real-time clock) Alarm Temperature Humidity Water..... Listed under: [Clock – Timer Projects](#)
30.  [Amazon Kitchen DRS](#) The Project This project is a combination of the many smart fridges and pantry's of the past. The idea is to combine all of them while also introducing Amazon's DRS system through Alexa and the Echo products as a bonus feature. The process will be..... Listed under: [Other Projects](#)

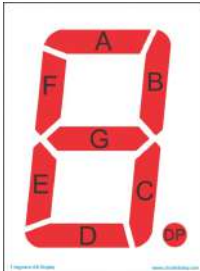
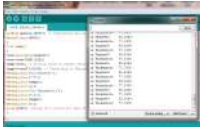
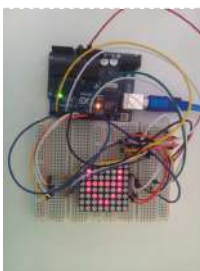
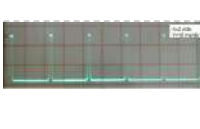
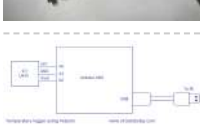
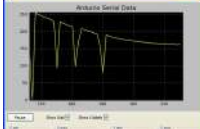
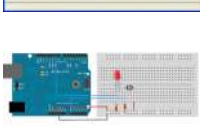
31.  [Build A Wake Up Alarm Clock Using Arduino](#) Story After designing the "Clock Set Date Time" and hearing the suggestion of ArduPic , I thought it would be a good idea and also useful, add a "wake-up alarm." A small change to the code and adding a few components: Here's "the Alarm Clock"..... Listed under: [Clock – Timer Projects](#)
32.  [Digital Dice using Arduino](#) We all are familiar with dice and often played LUDO or SANP SIDI (Snake & Ladders) game by using dice. Dice is a squire type solid box which contains 6 different numbers on all of its sides. We throw dice on a surface to get..... Listed under: [Other Projects](#)
33.  [Automatic Door Opener using Arduino](#) You must have seen automatic door openers in shopping malls and other commercial buildings. They open the door when someone comes near the entrance and close it after sometime. A number of technologies are available to make such kinds of systems like PIR sensors, Radar sensors, Laser..... Listed under: [Other Projects](#)
34.  [Computer Controlled Robot using Arduino](#) After designing this line follower robot using arduino uno, I have developed this computer controlled robot. It can be controlled via the computer and we can use specific keyboard keys to move it. It runs over serial communication which we have already discussed in our previous..... Listed under: [Robotics – Automation Projects](#)
35.  [DTMF Controlled Robot using Arduino](#) In present time almost all the people are familiar with robots. Robots play a very important role in human life. Robots are a machine which reduces the human efforts in heavy works in industries, building etc. and makes life easy. We are here with our next robot..... Listed under: [Robotics – Automation Projects](#)
36.  [DC Motor Control using Arduino](#) Here we are going to interface a DC motor to Arduino UNO and its speed is controlled. This is done by PWM (Pulse Width Modulation). This feature is enabled in UNO to get variable voltage over constant voltage. The method of PWM is explained here;..... Listed under: [Motor Projects](#)
37.  [Arduino Based LED Dimmer using PWM](#) This LED DIMMER is an Arduino Uno based PWM (Pulse Width Modulation) circuit developed to get variable voltage over constant voltage. The method of PWM is explained below. Before we get start building a 1 Watt LED Dimmer circuit, first consider a simple circuit as shown in figure below. Now..... Listed under: [PWM Projects](#)
38.  [How to Use Shift Register 74HC595 with Arduino Uno?](#) In ARDUINO we have 20 I/O pins, so we can program 20 pins of UNO to be used as either input or output. Although there are more pins on ATMEGA328P controller than on UNO, this is because while designing the board some pins are defaulted. Now..... Listed under: [Memory – Storage Projects](#)
39.  [Arduino Temperature Control – Adjust Fan Speed based on Temperature](#) In this Arduino based project, we are going to control DC fan speed according to the room temperature and show these parameter changes on a 16x2 LCD display. It is accomplished by the data communications between Arduino, LCD, DHT11 sensor Module and DC fan that..... Listed under: [Temperature Measurement Projects](#)
40.  [Interfacing 16x2 LCD with Arduino](#) To establish a good communication between human world and machine world, display units play an important role. And so they are an important part of embedded systems. Display units - big or small, work on the same basic principle. Besides complex display units like graphic displays..... Listed under: [LCD Projects](#)
41.  [7 Segment Display Interfacing with Arduino](#) In this tutorial we are going to interface a seven segment display to ARDUINO UNO. The display counts from 0-9 and resets itself to zero. Before going further, let us first discuss about seven segment displays. A seven segment display got its name from the very..... Listed under: [LED Projects](#)
42.  [Accelerometer Based Hand Gesture Controlled Robot using Arduino](#) Robots are playing an important role in automation across all the sectors like construction, military, medical, manufacturing, etc. After making some basic robots like line follower robot, computer controlled robot, etc, we have developed this accelerometer based gesture controlled robot by using arduino uno. In this project..... Listed under: [Robotics – Automation Projects](#)
43.  [How to Use ADC in Arduino Uno?](#) In this tutorial we are introducing concept of ADC (Analog to Digital Conversion) in ARDUINO UNO. Arduino board has six ADC channels, as show in figure below. Among those any one or all of them can be used as inputs for analog voltage. The Arduino Uno..... Listed under: [Other Projects](#)
44.  [Humidity and Temperature Measurement using Arduino](#) Humidity and temperature are common parameters to measure environmental conditions. In this Arduino based project we are going to measure ambient temperature and humidity and display it on a 16x2 LCD screen. A combined te mperature and himidity sensor DHT11 is used with Arduino uno..... Listed under: [Temperature Measurement Projects](#)
45.  [Color Detector using Arduino Uno](#) In this project we are going to interface TCS3200 color sensor with Arduino UNO. TCS3200 is a color sensor which can detect any number of colors with right programming. TCS3200 contains RGB (Red Green Blue) arrays. As shown in figure on microscopic level one can see..... Listed under: [Other Projects](#)
46.  [Automatic Room Light Controller with Bidirectional Visitor Counter](#) Often we see visitor counters at stadium, mall, offices, class rooms etc. How they count the people and turn ON or OFF the light when nobody is inside? Today we are here with automatic room light controller project with bidirectional visitor counter by using Arduino Uno. It is very..... Listed under: [Home Automation Projects](#)
47.  [Electronic Voting Machine using Arduino](#) We all are quite familiar with voting machines, even we have covered few other electronic voting machine projects previously here and here using RFID and AVR microcontroller. In this project, we have used the arduino controller to create an electronic voting machine. Components Arduino Uno 16x2..... Listed under: [Other Projects](#)
48.  [Arduino Based Heartbeat Monitor](#) Heart rate, body temperature and blood pressure monitoring are very important parameters of human body. Doctors use various kind of medical apparatus like thermometer for checking fever or body temperature, BP monitor for blood pr e measurement and heart rate monitor for heart rate measurement. In..... Listed under: [Medical – Health based Projects](#)

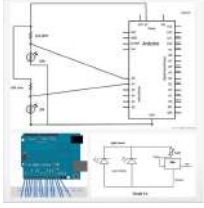
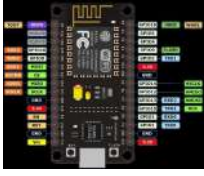
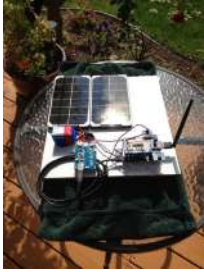
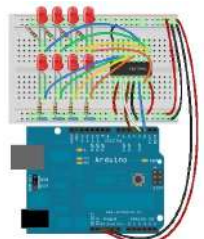
49.  [Arduino Based LED Chaser using Rotary Encoder](#) In this project we are going to interface a ROTARY ENCODER with ARDUINO. ARDUINO UNO is an ATMEGA controller based development board designed for electronic engineers and hobbyists. In ARDUINO we have 20 I/O pins, so we can program 20 pins of UNO to be..... Listed under: [LED Projects](#)
50.  [Keypad Interfacing with Arduino Uno](#) In this tutorial we are going to interface a 4x4 (16 key) keypad with ARDUINO UNO. We all know keypad is one of the most important input devices used in electronics engineering. Keypad is the easiest and the cheapest way to give commands or instructions to..... Listed under: [Other Projects](#)
51.  [Servo Motor Control using MATLAB](#) In this tutorial you will learn to make direct connection between your Arduino and Matlab, so that you can program your Arduino directly through Matlab. It is very useful when you are working on complex robotics like Robotic Hand, Humanoid etc. as you can process your..... Listed under: [PWM Projects](#)
52.  [Magnetic Field Strength Measurement using Arduino](#) In this project we are using the concept of ADC (Analog to Digital Conversion) in ARDUINO UNO. We are going to use a Hall Effect sensor and Arduino uno to measure the field strength of a magnet. The sensor which we have used here is UGN3503U. This..... Listed under: [Other Projects](#)
53.  [RFID Interfacing with Arduino](#) In this tutorial we are going to design a system to read the ID of RFID cards. RFID stands for Radio Frequency Identification. Each card has a unique ID embedded in it. These systems have many applications, like in offices, shopping malls and in many other..... Listed under: [Other Projects](#)
54.  [Servo Motor Control using Arduino](#) In this tutorial we are going to control a servo motor by ARDUINO UNO. Servo Motors are used where there is a need for accurate shaft movement or position. These are not proposed for high speed applications. These are proposed for low speed, medium torque..... Listed under: [Motor Projects](#)
55.  [Automatic Water Level Indicator and Controller using Arduino](#) In this Arduino based automatic water level indicator and controller project we are going to measure the water level by using ultrasonic sensors. Basic principal of ultrasonic distance measurement is based on ECHO. When sound waves are transmitted in environment then they return back to the origin as..... Listed under: [Other Projects](#)
56.  [Working of Force Sensor with Arduino](#) In this project we will be developing a fun circuit using Force sensor and Arduino Uno. This circuit generates sound linearly related to force applied on the sensor. For that we are going to interface FORCE sensor with Arduino Uno. In UNO, we are going use..... Listed under: [Sensor – Transducer – Detector Projects](#)
57.  [8x8 LED Matrix using Arduino](#) In this project we are going to design an 8x8 LED matrix display, for that we are going to interface an 8x8 LED matrix module with Arduino Uno. An 8x8 LED matrix contains 64 LEDs (Light Emitting Diodes) which are arranged in the form of a matrix, hence..... Listed under: [LED Projects](#)
58.  [RGB LED with Arduino](#) In this project we are going to interface 5 RGB (Red Green Blue) LEDs to Arduino Uno. These LEDs are connected in parallel for reducing PIN usage of Uno. The RGB LED will have four pins as shown in figure. PIN1: Color 1 negative terminal..... Listed under: [LED Projects](#)
59.  [Servo Motor Control by Flex Sensor](#) In this tutorial we are going to develop a circuit using FLEX sensor, Arduino Uno and a Servo motor. This project is a servo control system where the servo shaft position is determined by the flex or bent or deviation of the FLEX sensor. Lets first..... Listed under: [Motor Projects](#), [Sensor – Transducer – Detector Projects](#)
60.  [Variable Power Supply By Arduino Uno](#) In this tutorial we will develop a 5V variable voltage source from Arduino Uno. For that we are going use ADC (Analog to Digital Conversion) and PWM (Pulse Width Modulation) feature. Some digital electronic modules like accelerometer work on voltage 3.3V and some work on..... Listed under: [Other Projects](#)
61.  [PC Controlled Home Automation using Arduino](#) This project explains designing a home automation system which is controlled by a computer to switch On and switch Off various electrical and electronics devices. For demonstration we have used 3 zero watt bulbs which indicates LIGHT, FAN and TV. It uses Arduino Uno board as a..... Listed under: [Home Automation Projects](#)
62.  [Arduino Based Tone Generator](#) In this project we will develop a tone generator using Arduino Uno. We will have buttons interfaced with the UNO and each one of them generates different intensity of tone. The frequency of tone generated by the UNO is same at every internal. It's the intensity of the..... Listed under: [Other Projects](#)
63.  [Snake Game on 8x8 Matrix using Arduino](#) Snake Game has been very popular since the beginning of the Mobile phones. Initially it was come in Black and white cell phones, and soon became very famous. Then with the advancement of the Cellphones, this game has also changed a lot, and now many..... Listed under: [Game – Entertainment Projects](#)
64.  [Digital Code Lock using Arduino](#) Security is a major concern in our day to day life, and digital locks have become an important part of these security systems. One such digital code lock is imitated in this project using arduino board and a matrix keypad. Components Arduino Keypad Module Buzzer..... Listed under: [Other Projects](#)
65.  [GSM Based Home Automation using Arduino](#) Mobile phone is a revolutionary invention of the century. It was primarily designed for making and receiving calls & text messages, but it has become the whole world after the Smart phone comes into the picture. In this project we are building a home automation..... Listed under: [Home Automation Projects](#)
66.  [Prepaid Energy Meter using GSM and Arduino](#) Prepaid Electricity Energy Meter is a good concept in which you can recharge its balance, like we do in our mobile phones. In this project we are building a automated system by using Arduino and GSM module. You can recharge the electricity balance through this..... Listed under: [Metering – Instrument Projects](#)

67.  [Clap Switch using Arduino](#) In this project we are going to make Clapper circuit using the concept of ADC (Analog to Digital Conversion) in ARDUINO UNO. We are going to use a MIC and Uno to sense the sound and trigger a response. This Clap ON Clap OFF switch basically turns..... Listed under: [Other Projects](#)
68.  [IR Remote Controlled Home Automation using Arduino](#) Previously we have covered many types of Home automations using different technologies like DTMF Based Home Automation, PC Controlled Home Automation using Arduino, Bluetooth Controlled Home Automation. In this project, we are using IR based wireless communication for controlling home appliances. In this project, Arduino..... Listed under: [Home Automation Projects](#)
69.  [Bluetooth Controlled Toy Car using Arduino](#) After developing few popular robotic projects like line follower robot, edge avoiding robot, DTMF robot, gesture controlled robot, etc. in this project we are going to develop a bluetooth controlled robo car. Here we used a Bluetooth module to control the car, and it is also..... Listed under: [Car Projects](#)
70.  [Servo Position Control with Weight \(Force Sensor\)](#) In this tutorial we will develop a circuit using Force sensor, Arduino Uno and a servo motor. It will be a servo control system where the servo shaft position is determined by the weight present on the force sensor. Before going any further let's talk..... Listed under: [Sensor – Transducer – Detector Projects](#)
71.  [How to establish UART communication between ATmega8 and Arduino Uno?](#) Here we are going to establish a communication between an ATmega8 microcontroller and Arduino Uno. The communication established here is UART (Universal Asynchronous Receiver Transmitter) type. It's serial communication. By this serial communication data can be shared between two controllers, which is a required in various embedded system..... Listed under: [Arduino Programmer Projects](#)
72.  [WiFi Controlled Robot using Arduino](#) There are many types of Robots, from the simple ones like a Toy car to the advanced ones like industrial Robots. We have already covered many types of Robots using different technologies, have a look at them: Line Follower Robot using 8051 Microcontroller Line Follower..... Listed under: [Robotics – Automation Projects](#)
73.  [Arduino Solar Day Night Controller](#) Introduction This is an Arduino controlled light sensing switching unit. Its main use is to control solar lights to turn on when it is dark outside, but it can work in many more applications. This guide will walk you through every aspect of the building..... Listed under: [Solar energy_projects](#)
74.  [Capacitance Meter using Arduino](#) When we come across circuit boards which are previously designed or we take out one from old TV or computer, in attempt to repair it. And sometimes we need to know the capacitance of particular capacitor in the board to eliminate the fault. Then we..... Listed under: [Metering – Instrument Projects](#)
75.  [GUI Based Home Automation System using Arduino and MATLAB](#) We all are familiar with the word 'Automation', where the human interaction is minimal and things can be controlled automatically or remotely. Home automation is very popular and demanding concept in the field of Electronics, and we are also making our best efforts to make..... Listed under: [Home Automation Projects](#)
76.  [Arduino GPS Clock](#) There are many GPS satellites around the Earth which are used to provide the exact location of any place. Along with the location coordinates (Latitude and Longitude), it also provide other data like time, date, altitude, direction tracking angle etc. We have already learned to..... Listed under: [Clock – Timer Projects](#), [GPS Based Projects](#)
77.  [How to Use GPS With Arduino](#) GPS is a very useful device which is used in many electronics projects and applications like vehicle tracking system, GPS Clock, Accident Detection Alert System, traffic navigation and surveillance system etc. But question is how to use the GPS and read the data from GPS? We can..... Listed under: [Other Projects](#)
78.  [Arduino Propeller LED Display](#) You have seen Propellers in Aircrafts or in marine ships, if not in real then in movies for sure. In this session we are going to design a Propeller Display with Arduino, LEDs and a DC motor. In this Propeller Display, text will appear to..... Listed under: [LED Projects](#)
79.  [DIY LED VU Meter as Arduino Shield](#) VU Meter or Volume Meter is very popular and fun project in Electronics. We can consider the Volume Meter as an Equalizer, which is present in the Music systems. In which we can see the dancing of LEDs according to the music, if music is loud then equalizer..... Listed under: [How To – DIY – Projects](#), [LED Projects](#)
80.  [Call and Message using Arduino and GSM Module](#) Sometimes people find it difficult to use the GSM Module for its basic functions like calling, texting etc., specifically with the Microcontrollers. So here we are going to build a Simple Mobile Phone using Arduino, in which GSM Module is used to Make the Call,..... Listed under: [Phone Projects](#)
81.  [DIY Smart Vacuum Cleaning Robot using Arduino](#) Hi guys, are you a newbie to the world of Robotics or Electronic? OR Are you looking for a simple yet powerful project to make your friends and teachers impressed? Then this is the place. In this project we will use the power of Embedded..... Listed under: [How To – DIY – Projects](#)
82.  [Track A Vehicle on Google Maps using Arduino, ESP8266 & GPS](#) Vehicle Tracking System becomes very important now days, especially in case of stolen vehicles. If you have GPS system installed in your vehicle, you can track you Vehicle Location, and its helps police to track the Stolen Vehicles. Previously we have built similar project in..... Listed under: [Other Projects](#)
83.  [Make Your Own Homemade Arduino Board with ATmega328 Chip](#) Arduino is an open-source development platform for engineers and hobbyists to develop electronics projects in an easy way. It consists of both a physical programmable development board (based on AVR series of microcontrollers) and a piece of software or IDE which runs on your computer and used to write and upload..... Listed under: [Home Automation Projects](#)

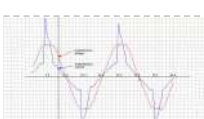
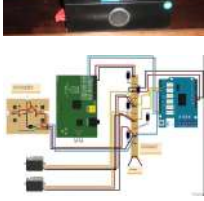
84.  [Frequency Counter using Arduino](#) Almost every electronic hobbyist must have faced a scenario where he or she must measure the frequency of signal generated by a clock or a counter or a timer. We can use oscilloscope to do the job, but not all of us can afford an..... Listed under: [Metering – Instrument Projects](#)
85.  [Arduino Solar Tracker using LDR and Servo Motor](#) In this article we are going to make a Solar Panel Tracker using Arduino, in which we will use two LDRs (Light dependent resistor) to sense the light and a servo motor to automatically rotate the solar panel in the direction of the sun light..... Listed under: [Solar energy projects](#)
86.  [Smoke Detector using MQ2 Gas Sensor and Arduino](#) Smoke Detectors are very useful in detecting smoke or fire in buildings, and so are the important safety parameters. In this DIY session, we are going to build a Smoke Detector Circuit which not only sense the smoke in the air but also reads and displays the level..... Listed under: [Sensor – Transducer – Detector Projects](#)
87.  [Heart Beat Monitoring over Internet using Arduino and ThingSpeak](#) In this project we are going to make a Heart Beat Detection and Monitoring System using Arduino that will detect the heart beat using the Pulse Sensor and will show the readings in BPM (Beats Per Minute) on the LCD connected to it. It will..... Listed under: [Medical – Health based Projects](#)
88.  [Using the Android Platform to control Robots](#) The popularity of android devices is attributed to their powerful capabilities which include internet connectivity, open architecture, and several other kinds of built-in sensors. Students and other software developers are increasingly using the android platform since it utilizes Java programming language which can easily be..... Listed under: [Phone Projects](#), [Robotics – Automation Projects](#)
89.  [Arduino based Automatic Plant Irrigation System with Message Alert](#) Whenever we go out of town for few days, we always used to worry about our plants as they need water on regular basis. So here we are making Automatic Plant Irrigation System using Arduino, which automatically provides water to your plants and keep you updated..... Listed under: [Home Automation Projects](#)
90.  [IOT based Air Pollution Monitoring System using Arduino](#) In this project we are going to make an IOT Based Air Pollution Monitoring System in which we will monitor the Air Quality over a webserver using internet and will trigger a alarm when the air quality goes down beyond a certain level, means when..... Listed under: [Sensor – Transducer – Detector Projects](#)
91.  [Scrolling Text Display on 8x8 LED Matrix using Arduino](#) In this tutorial we are going to design an 8x8 LED Matrix Scrolling Display using Arduino Uno, which will show scrolling alphabets. 8x8 LED Matrix contains 64 LEDs (Light Emitting Diodes) which are arranged in the form of a matrix, hence the name is LED..... Listed under: [LED Projects](#)
92.  [IOT Based Dumpster Monitoring using Arduino & ESP8266](#) In this DIY, we are going to make an IOT based dumpster/garbage Monitoring System which will tell us that whether the trash can is empty or full through the webserver and you can know the status of your 'Trash Can' or 'Dumpsters' from anywhere in the..... Listed under: [Other Projects](#)
93.  [The Big Easy Stepper Motor Driver](#) Stepper (or step) motors are really cool. They are perfect for automation or any time you need a motor to turn to a specific point, at a specific speed, in a specific direction. And, unlike typical motors, steppers are able to do all of this,..... Listed under: [Motor Projects](#)
94.  [Sensing Humidity With The SHT15](#) The SHT15 is a digital humidity sensor that outputs a fully calibrated humidity reading. And... because what we are measuring is actually relative humidity, and relative humidity being relative to temperature, the SHT15 has a builtin digital thermometer. This makes things much easier to work..... Listed under: [Sensor – Transducer – Detector Projects](#)
95.  [MQ-3 Alcohol Sensor, Breakout Board + Arduino](#) lot has happened since our last article was published and to celebrate the continuance of bildr we'll be playing with the MQ-3 Alcohol Gas Sensor. Coupled with the SparkFun Gas Sensor Breakout Board, connecting the MQ-3 to your Arduino is a breeze. The MQ-3 is..... Listed under: [Sensor – Transducer – Detector Projects](#)
96.  [Arduino + MLX90614 IR Thermometer](#) Being able to sense temperature is cool... But being able to read the temperature of an object without even touching it is simply awesome. The MLX90614 is a sensor that can do just that. By reading the infrared light coming off an object, this guy..... Listed under: [Temperature Measurement Projects](#)
97.  [DIY 3X3X3 LED Cube with Arduino](#) In this project we are going to design a 3x3x3 LED CUBE and connect it to Arduino UNO to get different patterns. For a beginner we will start with a simple pattern. A typical 3*3*3 LED cube connected to UNO is shown in the image above,..... Listed under: [How To – DIY – Projects](#)
98.  [Art-duino](#) We built a mini-crawler robot that draws a path behind it to make interesting designs. We chose this design for a variety of reasons. First and foremost, we experimented with attaching our other materials to the motors, and most of them were too heavy for..... Listed under: [Other Projects](#)
99.  [Mobile Phone Controlled Robot Car using G-Sensor and Arduino](#) In this article, we are going to Control the Robot Car through the G sensor of our mobile phone and you will be able to move the Robot just by tilting the Phone. We will also use Arduino and RemoteXY app for this G-Sensor Controlled..... Listed under: [Car Projects](#)
100.  [Interfacing MQ2 to Arduino- Gas Sensor for Smoke-Butane-CH4 and LPG](#) In this article, we are going to learn how to interface MQ2 Gas Sensor with Arduino. MQ2 is basically a general purpose gas sensor (similar to MQ5) which can sense a broad range of gases like LPG, Butane, Methane(CH4), Hydrogen and in addition to these..... Listed under: [Sensor – Transducer – Detector Projects](#)
101. [Interfacing PIR Sensor to Arduino – Connect Motion Sensor/Detector to Arduino](#) In this article, we are going to learn how to interface/connect PIR Sensor Passive Infrared Sensor to Arduino. We have written a tutorial on how to interface PIR sensor to 8051 previously in CircuitsToday! So a PIR sensor which is also known as Pyroelectric..... Listed under: [Sensor – Transducer – Detector Projects](#)



102.  [Arduino and 7 Segment Display – Interfacing Tutorial](#) In this article, we are publishing a tutorial on how to interface seven segment LED display to Arduino. Seven segment displays are used in many embedded system and industrial applications where the range of outputs to be shown is known beforehand. Basic 1 digit seven segment..... Listed under: [LED Projects](#)
103.  [LM35 and Arduino – Temperature Measurement and Display on LCD](#) In this article, we are presenting a tutorial on how to interface LM35 and Arduino along with its program. Once we successfully interface arduino and lm35, we will go on to build a temperature display using arduino and a 16×2 LCD module which constantly monitors..... Listed under: [LCD Projects](#), [Temperature Measurement Projects](#)
104.  [Interfacing 8×8 LED Matrix with Arduino](#) LED matrix displays can be used to display almost anything. Most modern LED sign boards uses various types of matrix boards with controllers. In this tutorial we are going to interface a single color 8×8 LED matrix with Arduino and display a few characters in..... Listed under: [LED Projects](#)
105.  [How to Make an LED Scrollbar](#) In this tutorial, we are going to build an LED Scroll Bar as shown in the image given below. The project is designed to flash Ten LED strips (by giving different lighting patterns for each strip) with the help of a control board. We..... Listed under: [LED Projects](#)
106.  [Interfacing MQ5 LPG Sensor to Arduino](#) In this guide, we learn how to interface MQ5 Gas sensor (which is a generic Gas Sensor more suited to detect and determine LPG concentrations) with Arduino. In this tutorial, we are using the MQ5 Gas sensor module (which is widely available in market) Listed under: [Sensor – Transducer – Detector Projects](#)
107.  [Tachometer using arduino](#) Tachometer is a device used for measuring the number of revolutions of an object in a given interval of time. Usually it is expressed in revolutions per minute or RPM. Earlier tachometers purely mechanical where the revolution is transferred to the tachometer through mechanical coupling..... Listed under: [Other Projects](#)
108.  [Programming an ATtiny w/ Arduino 1.6 \(or 1.0\)](#) This tutorial shows you how to program an ATtiny45, ATtiny85, ATtiny44 or ATtiny84 microcontroller using the Arduino software. These are small, cheap (\$2-3) microcontrollers that are convenient for running simple programs. The ATtiny45 and ATtiny85 have eight legs and are almost identical, except that the..... Listed under: [Other Projects](#)
109.  [Temperature logger using arduino](#) Simple temperature logger using arduino (°C & °F). This project is about a simple USB temperature logging system using arduino uno and the serial monitor function in the arduino IDE. The system monitors the temperature every 2 seconds and shows it on the arduino serial monitor..... Listed under: [Temperature Measurement Projects](#)
110.  [Open source EEG/ECG/EMG](#) Introduction Electrodes on the skin can be used to measure muscle (electromyography, EMG) brain (electroencephalography, EEG) and heart (electrocardiogram, ECG/EKG) activity. These electrophysiological measures are popular for clinical, research and hobbyist applications (such as brain computer interfaces). Most commercial systems are “medical grade” – these..... Listed under: [Medical – Health based Projects](#)
111.  [Gas Leakage Detector using Arduino and GSM Module with SMS Alert and Sound Alarm](#) We have published lots of interesting arduino projects like GSM based Fire Alarm System , Line Following Robot, RFID Based Access Control System and many other useful projects. This time, we are publishing a highly useful home application – Gas Leakage Detector using Arduino and..... Listed under: [Sensor – Transducer – Detector Projects](#)
112.  [Arduino and Python](#) Talking to Arduino over a serial interface is pretty trivial in Python. On Unix-like systems you can read and write to the serial device as if it were a file, but there is also a wrapper library called pySerial that works well across all operating..... Listed under: [Other Projects](#)
113.  [Calibration](#) This example demonstrates one technique for calibrating sensor input. The board takes sensor readings for five seconds during the startup, and tracks the highest and lowest values it gets. These sensor readings during the first five seconds of the sketch execution define the minimum and..... Listed under: [Sensor – Transducer – Detector Projects](#)
114.  [Arduino Resistance Data Logger](#) I was working on a project where I needed a cheap and efficient way to log the changing resistance of a sensor while simultaneously logging the temperature. This project is similar in many respects to the other data loggers on my site. Three prototypes have..... Listed under: [Memory – Storage Projects](#)
115.  [DS1631 – Arduino Code and Temperature Validation](#) Basic information The DS1631 is a low cost, I2C interface digital thermometer popular in the maker community. Capable of providing 12-bit temperature readings over a -55°C to +125°C range. I have need for a digital thermometer in many of my projects and thought it would..... Listed under: [Temperature Measurement Projects](#)

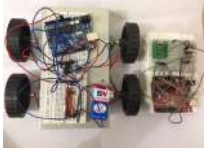
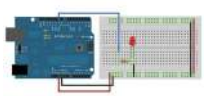
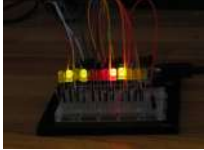
116.  [Live Action MATLAB – Arduino data logger](#). Background I was in need of an affordable data logger for a project. I have access to MATLAB on all of my machines so it was an easy choice to build an Arduino based data logger that would easily interface with MATLAB R2014a. MATLAB is..... Listed under: [Memory – Storage Projects](#)
117.  [Dented Joystick](#) Goals: The project goals are: Adjustable number of detents Adjustable force threshold Software controlled damping Implementation: A brief overview: The team's design utilizes several components: Arduino Leonardo Firgelli L16-50-35-12-P actuators (2x) FSRs (4x) TI L293D H bridge MSU Eagle custom PCB print Listed under: [Medical – Health based Projects](#)
118.  [Staircase Meets Piano](#) In November 2014, we displayed our first completed project as a club, the Staircase Piano. The idea for the project was given to us by Professor Barry Brown before the club was even formed. Throughout the semester we worked towards putting the piano together for..... Listed under: [Arduino Programmer Projects](#)
119.  [LTD SMRT Project \(Safe Monitored Rider Transit\)](#) The proposed new LTD public transportation system uses people counters on the bus system to get an accurate measure of rider tendencies across different routes at specific times. Each bus will be equipped with two sensors which will generate numeric data no larger than 4..... Listed under: [Development Board – Kits Projects](#)
120.  [Nodemcu arduino interfacing project](#) A guide to getting started with the ESP8266 with the Arduino IDE This assumes that yo have a NodeMCU type board with the Silicon Labs CP2102 USB to UART Bridge. These boards are convenient because they can be connected directly to your computer for programming..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
121.  [Using an Arduino as a Latching Relay](#) I wrote this one hot week in July 2010. I've been leaving my front door ajar, to get some air through the house. Probably not a very good idea. So I thought I'd hook up an Arduino to ensure that no one takes advantage of..... Listed under: [LED Projects](#)
122.  [Arduino-based Graphical Heart Rate Monitor](#) Introduction: Like many out there, I enjoy a good exercise session, whether it be indoors or outdoors. As part of that I purchased a Polar branded heart rate monitor, which came with a "Wearlink" chest strap and RS300Xsd receiver watch. The watch is able to..... Listed under: [Medical – Health based Projects](#)
123.  [High-Power Control: Arduino + TIP120 Transistor](#) Up until now, we have talked about working with a lot of low-power devices. Sensors, LEDs, ICs, and the like are all capable of being powered directly from your Arduino, but as many awesome 5 and 3.3v components as there are, eventually you will find..... Listed under: [Sensor – Transducer – Detector Projects](#)
124.  [SunAir Solar Power Controller for Raspberry Pi and Arduino](#) Ever wanted to build your own Solar Powered Raspberry Pi or Arduino system? SunAir and SunAirPlus are 3rd Generation Solar Charging and Sun Tracking Boards designed by Dr. John C. Shovic at SwitchDoc Labs. You can use this board to power your projects and add..... Listed under: [Solar energy projects](#)
125.  [Using Arduino and Pd for musical live performance](#) Connecting an Arduino microcontroller to Pd is no big problem: You can just put Firmata on your Arduino and use the Pduino library for communication on the Pd side. But sometimes Firmata is not the answer to every problem: You may want to turn on..... Listed under: [Sound – Audio Projects](#)
126.  [Lab 8: Shift Register and Binary](#) Topics: First Build The Circuit The Code Hardware Theory Overview-"Rollover Rollover" What is a Shift Register How the Arduino Controls the Shift Register Software Theory The shiftOut Function Binary Numbers Other Functions in the Code Exercise References 1. First Build It would be a really..... Listed under: [LED Projects](#)
127.  [Knock Detector](#) Introduction For the third assignment, we decided to make a 'knock-detector' that is capable of informing the user/owner of specific events. We designed our system such that it can detect both casual knocks and knock patterns. Casual knocks could be used to inform the owner/user..... Listed under: [Sensor – Transducer – Detector Projects](#)
128.  [Arduino Yun SBC adds Wifi and Linux to Leonardo features](#) [Updated Sep 30] — Arduino announced the first open source Arduino hacker board with built-in WiFi, and also the first to run Linux. The \$69 Arduino Yun integrates the functions of an Arduino Leonardo, featuring an Atmel ATmega32U4 microcontroller and 14 GPIO pins, with an..... Listed under: [Wifi - Wlan Projects](#)
129.  [Internet Datalogging With Arduino and XBee WiFi](#) Introduction Are you looking to get your data gathering project hooked into the "Internet-of-Things"? Then check out data.sparkfun.com! It makes posting data to the web as easy as constructing a URL and POSTing it to a server. I wanted to create a quick project to..... Listed under: [Wifi - Wlan Projects](#)
130.  [Weather Monitor](#) This Instructable shows you how to build a micro-controller based weather monitoring device. Built on the Arduino Uno board it can easily be extended and modified should you have additional sensors at hand. Main requirements: - Measure temperature (accuracy +/- 0,5 degree Kelvin) - Measure..... Listed under: [Home Automation Projects](#), [Metering – Instrument Projects](#), [Sensor – Transducer – Detector Projects](#), [Temperature Measurement Projects](#)

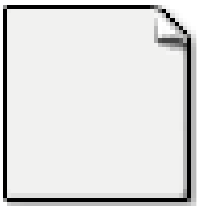
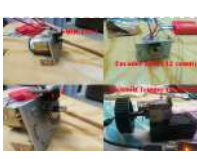
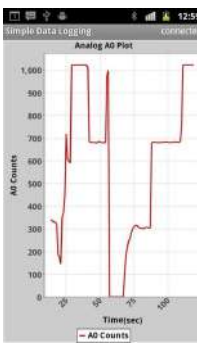
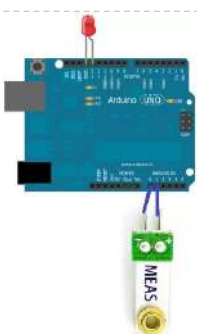
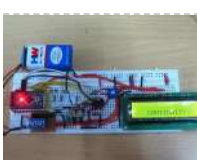
131.  [Clear polycarbonate enclosures using Arduino](#) So about a year ago I decided that I wanted to get into AVR microcontrollers. After ordering an AVR pocket programmer from Sparkfun , I soon realized that it was too delicate to be sitting on a workbench full of wire clippings. I knew I..... Listed under: [Ideas](#), [Other Project Ideas](#)
132.  [Tutorial 15: Arduino Serial Thermometer](#) The Arduino reads temperature from a MCP9700 temperature sensor IC and displays the temperature in the Arduino IDE serial monitor window. Also see the Arduino LCD thermometer tutorial (tutorial 14). Prerequisites Complete Tutorial 9: Using the Arduino Serial Port before attempting this tutorial. Components Besides..... Listed under: [Sensor – Transducer – Detector Projects](#)
133.  [Easy Bluetooth Enabled Door Lock With Arduino plus Android](#) Thanks to everyone who supported this project and voted for it in the Arduino Challenge! I was awarded second prize and hope to participate in more Arduino contests in the near future. This tutorial will explain a simple way to make a password protected bluetooth..... Listed under: [Home Automation Project Ideas](#), [Ideas](#), [Phone Project Ideas](#)
134.  [Build A Speech Controlled Quadropod Using Arduino](#) This is my first post on Instructable and I am super excited to share my knowledge! My original robot post is here: Spryo SpoonTail which is just my robot showing some tricks but with a tethered control. In this Instructable I am going to show..... Listed under: [Bluetooth Projects](#), [Robotics – Automation Projects](#)
135.  [Solar-Oriented, Arduino-Powered Clock](#) This is a clock designed to keep accurate time (independent of atomic or GPS), display local sunrise, sunset and solar noon, and also adjust itself for daylight savings time. I wanted the clock to be easy to use and be flexible. The setting functions are..... Listed under: [Clock – Timer Project Ideas](#), [Ideas](#)
136.  [DIY Low Cost Arduino Mobile Development Platform](#) I have wanted to build my own robot for awhile now. But after many tried and failed attempts, I was losing hope that may ever happen. I discovered that there wasn't a small, robust, super easy to add-on to, robot that was within my budget to..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#), [Phone Projects](#)
137.  [APR9600 Voice Recording and Playback System with JRC286D Chip ICStation Mega 2560 Compatible Arduino](#) ICStation team introduce you this APR9600 voice recording and playback system used in elevator based on the ICStation Mega2560 compatible with Arduino. It uses DC5V voltage to work. When you press the different keys, the loudspeaker will sound that which floor you arrive. This design..... Listed under: [Sound – Audio Projects](#)
138.  [Making the TFF: a dress that gets excited when tweeted](#) The idea of this dress comes from a series of tweets with online friends @shineslike and @arduinogirl. @shineslike and I had taken a half day Arduino workshop given by @arduinogirl at the MCN 2011 conference. I was immediately inspired creatively by the sensory and interactive opportunities..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Internet – Ethernet – LAN Project Ideas](#), [Sound – Audio Projects](#)
139.  [Magical Colour Copying Chameleon Lamp using Arduino](#) In this Instructable, I will show you how to make an Arduino powered lamp that detects the colour under it and then attempts to emulate that colour. All using easy to find parts (most can be found in the Dollar store with the exception of..... Listed under: [Game – Entertainment Project Ideas](#), [Ideas](#)
140.  [Ultrasonic Dimmer \(Without Humming Or Buzzing Noise\)](#) I have been working on this project for a while and whilst it is still under development I decided to write a short guide after several requests to do so. The dimmer uses an interrupt driven XL-Maxsonar EZ1 ultrasound range finder to measure the distance..... Listed under: [Sensor – Transducer – Detector Projects](#)
141.  [Rotary Emotiphone using Arduino](#) Introduction The Rotary Emotiphone is a vintage rotary phone that tweets mood emoticons. It has a predefined list of 10 emoticons, each assigned to a digit, so that when you are happy / sad / drunk / etc., you pick up the handset and dial..... Listed under: [Home Automation Project Ideas](#), [Ideas](#), [Phone Project Ideas](#)
142.  [High Speed Photo Arduino : HighSpeeduino](#) Today is High Speed Photography day ! The concept is to take a 'long' exposure photograph, 4 seconds say, in a (very) dark room (a bathroom in our case). You end up with a completely black picture, right ? If you burst a flash (about..... Listed under: [Arduino Video – Camera – Imaging Project Ideas](#), [Ideas](#)
143.  [Control Two LEDs with an Arduino and bitVoicer](#) So what I want to do here is do several things with two LEDs with speech recognition I'm using bitvoicer you can get it here Step 1: Part List So I'm doing this with as little parts as I can, here's the list: Green LED..... Listed under: [LED Projects](#)
144.  [DIY Guide for Amblone LED Light](#) In this section we will explain exactly how you can create your own Amblone setup, consisting of 3 RGB LED strips and an Arduino Mega. What do I need? To create the Amblone setup described in this guide, you will need the following: Amblone software..... Listed under: [LED Projects](#)
145.  [Earfingers: Hear with your hands using Arduino](#) First and foremost, I must acknowledge that I am standing on the shoulders of giants, and that every giant is standing on the shoulders of giants (such as all contributors to instructables). If it weren't for the unknowably many people who had the mindfulness to..... Listed under: [How To – DIY – Project Ideas](#), [Ideas](#), [Sound – Audio Project Ideas](#)
146.  [Talking Pumpkin](#) So my boss came to me one last week and said he wanted to scare the trick-or-treaters who came to his home, and the kids who would come to work during a special Halloween Walk the community does. Thus was born the talking pumpkin. In..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [PWM Projects](#), [Sensor – Transducer – Detector Projects](#), [Sound – Audio Projects](#)
147.  [Basics of Turning your Remote Controll Vehicle into an Autonomous System \(Drone\) Using an Arduino](#) I began this project with the objective of cheaply turning my RC helicopter into something of a UAV or at least to fit some sensors to reduce collisions and other "mis-haps." Now unfortunately at the beginning of the project i miscalculated my little helicopter's lift..... Listed under: [Wireless Projects](#)

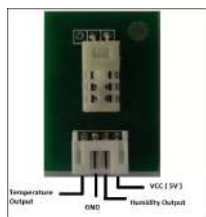
148.  [Super Amazing Button using Arduino](#) Hello Everyone. This is my very first Instructable so please go easy on me. This was more or less a test project to see if my new arduino board worked. Any friendly advice will be greatly appreciated so my future posts can be even better..... Listed under: [Game – Entertainment Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)
149.  [Connect A 16x2 LCD Display To An Arduino](#) Welcome to my FIRST instructable, i will show you how to connect a 16x2 lcd display to an arduino, follow these simple step by step instructions and you will have it done in no time 😊 Tools Needed : Soldering Iron Wire Strippers Pliers..... Listed under: [LCD Projects](#), [Projects](#)
150.  [How to tweet from an Arduino using the wifi sheild](#) Hey, I am a big fan of Instructables. I have consistently used it for the past 3 years and now its time for me to write one myself.Here we go. This instructable is for those who want to make some inanimate object tweet automatically. Like say for..... Listed under: [Wireless Projects](#)
151.  [Interactive Child's Mobile using Arduino](#) What can you make with fluorescent acrylic as the inspiration? We chose to make a glow-in-the-dark baby mobile, with an accompanying toy. This project was completed as a part of the Computing and Craft class at Olin College of Engineering. Materials: - Craft Materials: -..... Listed under: [Game – Entertainment Project Ideas](#), [Home Automation Project Ideas](#), [Ideas](#)
152.  [Webserver for home appliances control](#) This instructable describes how a simple but powerful webserver used for controlling of home appliances can be done. The hart of the circuit is the ATmega328 microcontroller. I have chose this because I wanted to use all available Arduino libraries compatible with them. The Ethernet..... Listed under: [Home Automation Projects](#)
153.  [Learning Arduino basics the easy way – Part 01 "Blink" or "The Internet"](#) You've bought your first Arduino or you're planning to get this great little device? Obi Wan would say: "That's good. You have taken your first step into a larger world." Same thing for me! Congratulations! You'll see, as soon as you master the basics, you'll..... Listed under: [Internet – Ethernet – LAN Projects](#)
154.  [Datura 6 home automation – 2015 improvements](#) News: In this latest months I've made some important fixes and improvements to the code and to the webserver of the project. See datura_mega_v19.ino for the latest code. The most functional project over internet – Use it as a complete irrigation system for your garden,..... Listed under: [Home Automation Projects](#)
155.  [Analog Read Voltage using Arduino](#) This example shows you how to read an analog input on Pin 0, convert the values from analogRead() into voltage, and print it out to the serial monitor. Circuit: image developed using Fritzing. For more circuit examples, see the Fritzing project page Connect the three wires from..... Listed under: [Metering – Instrument Projects](#), [PWM Projects](#)
156.  [Build A Firefighting Robot Using Arduino](#) For my project I created a robot with an attached water cannon. My mentor and I built it in a budget of around \$300 (not including the necessary equipment), and it functions quite well. For the motors we used drill motors, powered by the 18..... Listed under: [Robotics – Automation Projects](#)
157.  [An animation inside a water drop by Physalia](#) 2000 pictures compose this piece- that is, 2000 perfect different water drops into which we mapped an animation. Droplets that behave and look strangely similar at the stage of less entropy, and become more disorderly as they splash. The final result of the piece you..... Listed under: [Video – Camera – Imaging Projects](#)
158.  [PuttDuino putt-putt hole with Arduino](#) My company has annual events where we all get together for fun - to blow off steam and have a little competition. In the past we have had softball and bowling competitions. This year someone had an inspiration: each department would build a putt-putt 'hole'..... Listed under: [Game – Entertainment Project Ideas](#), [Ideas](#)
159.  [Temperature Wand using Arduino](#) Most of you have heard the expression 'Hot Air Rises'. Well, it's true. So in your typical house, it's going to be hotter near the ceiling than near the floor. How much hotter? Well, being a Lazy Old Geek, I wanted to know how much..... Listed under: [Ideas](#), [Temperature Measurement Project Ideas](#)
160.  [Arduino Alphabet](#) This project is very interesting because it shows the sequence of all letters of our English alphabet. That is, the project generates capital letters from the A to the Z based on Arduino code and showed by an alphanumeric display. I'm using a common cathode..... Listed under: [How To – DIY – Projects](#), [LCD Projects](#)
161.  [Arduino based Tic Tac Toe with TV Remote](#) This was my first time attending the Internet of Things Pune Group. It was such a fun learning experience! At today's meetup, Dhiraj and Nishant started out by introducing the InduinoX and Arduino Uno boards along with the Processing IDE that is used to write..... Listed under: [Wireless Projects](#)
162.  [Arduino-powered A-10 stick grip remote w/Emergency Party Button](#) I came across Plama2002's "Emergency Party Button" build a while back and wanted something similar for my bar. I also had an old USAF B-8 stick grip from an A-10A that I picked up in my previous life. I figured instead of just being a..... Listed under: [Game – Entertainment Project Ideas](#), [Ideas](#), [Radio Project Ideas](#)
163.  [RaspiDuinoRover – \(Yet another\) iPhone driven moving Raspberry Pi and Arduino rover](#) Architecture RaspiDuinoRover is made of three main parts: A Raspberry Pi which receives commands from a remote device through a TCP connection, and sends these commands to an Arduino Uno through an I2C connection. The same TCP channel is used to send back the remote..... Listed under: [Wireless Projects](#)
164. [Hear your plant make music! – Ethernet version](#) This walk-through will show you how to build a sensor to monitor your plant's environment and use Stats ... Sound's ERC-20 app to turn this data into music, allowing you to listen to your plant's reaction to it's environment. For more information on this project,.....

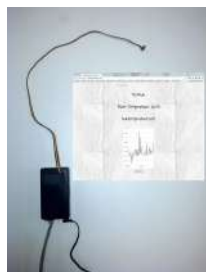
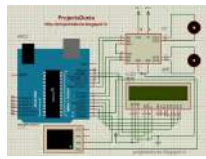
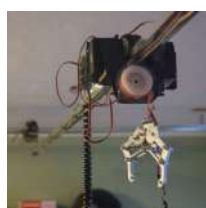
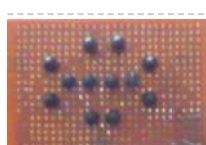


Listed under: [Internet – Ethernet – LAN Projects](#), [Sound – Audio Projects](#)

165.  [Twitter garage door using the GE Choice ALERT system & Arduino](#) You know that feeling of driving away from your house almost getting to work and saying "Now Did close the garage door?" . I hate that feeling and seeked out to resolve it in the simplest/cheapest way I could. The starting point was of course..... Listed under: [Home Automation Project Ideas](#), [Ideas](#), [Internet – Ethernet – LAN Project Ideas](#), [Security – Safety Project Ideas](#)
166.  [Autonomous drone that you already have in your pocket!](#) In this tutorial i want to learn you something, maybe change your mind. And make autonomous drones available for everyone. Simple question is: What do you need to make your drone autonomous? . Answer: - GPS - Accelerometer - Gyroscope - Telemetry wireless system -..... Listed under: [Phone Projects](#)
167.  [Temperature Recording Arduino Robot](#) My son and myself made a little arduino robot that records temperature. He wanted me to draw a robot, I wanted to experiment with blinking LEDs relaying data so a plan was hatched. The way the LEDs work is as follows: Green = lowest temperature..... Listed under: [Ideas](#), [Robotics – Automation Project Ideas](#)
168.  [TiltKey- Write by Tilting](#) The TiltKey is a keyboard input device based on tilting. Based on the angle that it is tilted at, and the direction it is tilted in, you can write every letter of the alphabet, every number, and every symbol found on a standard US keyboard..... Listed under: [Sensor – Transducer – Detector Projects](#)
169.  [Gesture controlled robot using Arduino](#) This gesture controlled robot uses Arduino, ADXL335 accelerometer and RF transmitter-receiver pair. We will divide the entire robot into 3 parts the transmitter, the receiver and the robot. The different gestures that have been mapped to the direction of the bot are- Hand parallel to the ground-stationary..... Listed under: [Robotics – Automation Projects](#)
170.  [Fading an LED off and on using Arduino](#) Demonstrates the use of the analogWrite() function in fading an LED off and on. AnalogWrite uses pulse width modulation (PWM), turning a digital pin on and off very quickly, to create a fading effect. Circuit Connect the anode (the longer, positive leg) of your LED to digital output pin 9 on your..... Listed under: [LED Projects](#), [Projects](#)
171.  [Computer controlled RC car with two Arduinos](#) Required Parts: This project requires two Arduino boards which can be bought from <http://www.adafruit.com/category/17> This project uses two Arduino Uno compatible boards. An L293D or other Dual H-Bridge Motor Driver chip will be needed to drive the motors of the RC car. This can be..... Listed under: [Game – Entertainment Projects](#)
172.  [Wing Tip Extensions for Arduino](#) Greetings, One late night of web surfing I came across some 45 Degree Extension boards. Thinking to myself "Wow!" that's cool and then I looked at the price...\$27.00 before S&H. "Yikes!" I've been looking for an excuse to learn Eagle PCB layout software and this..... Listed under: [Ideas](#), [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)
173.  [RC MOOD LYTE](#) RC MOOD LYTE is a commercial quality flameless light engine for heavy, everyday use in the home, restaurant, catering and hospitality industry ,a great improvement over the traditional wax candles in terms of safety and reliability features . LED Candles have No wax, No smoke,..... Listed under: [LED Projects](#)
174.  [Arduino Lilypad powered shooes for the visually impaired](#) Anirudh Sharma, an IT Engineer from Rajasthan Technical University has developed a system that offers non-obtrusive navigation for the visually impaired . Calling it Le Chal (Hindi for 'Take me there'), Sharma conceptualized and demonstrated the system at MIT (Massachusetts Institute of Technology) Media Lab..... Listed under: [Game – Entertainment Projects](#)
175.  [Using an Arduino Uno R3 as a Game Controller](#) Naturally, the Uno does not natively support keyboard strokes, unlike it's Leonardo brother. Most of Google will tell you you need to do some firmware workarounds and ATMEGA reprogramming just to get it working and the entire ordeal is a mess. If you're like me,..... Listed under: [Game – Entertainment Projects](#)
176.  [Arduino Sew Easy Wearable Shield](#) Wearable computing, e-textiles, soft circuits or whatever you want to call it, is a growing field of applying technology to garments or accessories like bags, shoes or backpacks. It is a fun and creative challenge which goes beyond just adding LED lights to fabric. For..... Listed under: [Development Board – Kits Project Ideas](#), [Ideas](#)
177.  [Binary metric clock using Arduino](#) This is a very odd kind of clock, which can easily be made with simple supplies. To begin the explanation, I would like to say that I have always wanted time to be metric. 5 o'clock would be mid-day, 7:5 would be three quarters (6:00..... Listed under: [Clock – Timer Project Ideas](#), [Ideas](#)
178.  [Hard Disk Clock \(HDD Clock with Arduino Uno\)](#) This is a fun project that can be done easily and also cheaply. In this instructable we will explain step by step how to make this beautiful POV clock. Used material: Arduino Uno, RTC modul, ULN 2003, IR diode and IR transistor (used like a..... Listed under: [Clock – Timer Projects](#)
179.  [Home Automation Using Arduino & Autohotkey](#) Its been awhile since i last posted something here. Was kinda busy with my university exams & all! Idea for this project was in my mind for very long & i don't think anyone would've done this project with Autohotkey! Anyway, this is a necessity..... Listed under: [Home Automation Projects](#)
180.  [Volcom RGB Desktop Light Box](#) Greetings! I'm Russell Petersen. I'm an engineer, inventor, designer, fabricator, and dreamer. I'm a junior Electrical Engineer by trade, located and working in the San Francisco Bay Area. I love playing with Solid State Lighting, and came up with this idea one night. Simply stated,..... Listed under: [LED Projects](#)

181.  [Twist Shield for the Arduino](#) This little 'Add-on' board allows you to 'Twist' an existing Arduino Shield 90 degree from its original footprint. Twist Shield.brd42 KB Step 1: The Problem... Have you ever finished a project and then realized you stopped one step too soon? While plugging in various shields I..... Listed under: [Development Board – Kits Project Ideas](#), [Ideas](#)
182.  [FTDI Vinco USB Host/Device Development Platform – also for Android & Arduino](#) FTDI has announced its commitment to supporting the Android Open Accessories initiative, thus allowing engineers to realize exciting new system designs that are compatible with tablets and smartphones utilising the highly popular Android operating system. "FTDI is very excited about the new Android Open Accessories..... Listed under: [Phone Projects](#)
183.  [Microcontrolled Farm Equipment](#) Modified BaleScoop(for picking hay bales out of the field) from manual levers to arduino controlled functions. This eliminates the need for 3 sets of hydraulic hoses to only one set and operator can focus more on where they are going rather than controlling the implement. This is set..... Listed under: [Other Projects](#)
184.  [Arduino PID Motor Controller](#) INTRODUCTION : The development of high performance motor drives is very important in industrial as well as other purpose applications. Generally all high performance motor drives use quadrature encoders and PID control because of its simplicity and precise control. The quadrature encoder acts as a..... Listed under: [Motor Projects](#)
185.  [Arduino Ultrasonic Parking Spotter](#) For my first instructable, I'd like to present The Parking Spotter. This is not a new concept, I know. However, this build was done specifically to suit my needs/wants/materials already in my possession. Typically, a project begins with an idea, parts are then gathered, and..... Listed under: [Arduino Car Project Ideas](#), [Ideas](#), [Sensor – Transducer – Detector Project Ideas](#)
186.  [ZIF socket Arduino-compatible board](#) In this tutorial we make an Arduino-compatible board that holds the microcontroller in a ZIF socket. Updated 18/03/2013 Today we are going to make a different type of Arduino-compatible board, one that has a ZIF ("zero insertion force") socket. Our reason for making this is..... Listed under: [Development Board – Kits Projects](#), [Projects](#)
187.  [Bootload an ATmega Microcontroller & Build Your Own Arduino – 2](#) Since you lacked the USB interface in your own Arduino board, it becomes necessary to use a homemade/ready-made USB to Serial Converter Module as an efficient and economical solution. Inexpensive and easy-to-use USB to Serial Converter modules are now widely available, such as one shown..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
188.  [Simple Remote Data Plotting using Android / Arduino / pfodApp](#) Simple Remote Data Plotting using Android / Arduino / pfodApp This Instructable shows you how to plot Arduino sensor data on your Android mobile and capture it for later downloading to your computer. These instructions are also available at www.pfod.com.au No Android programming is required..... Listed under: [Arduino Android](#), [Arduino Programmer Projects](#), [Phone Projects](#)
189.  [How To Make a Simple Variable Frequency Generator Using Arduino](#) A frequency generator is a very handy device in electronic design, development, testing and trouble shooting. It is such a kind of device which can generate the required frequencies which can be then applied directly to the target device for testing it. There are frequency..... Listed under: [Development Board – Kits Projects](#)
190.  [Build A Fun Hackable Speaker Timer Using Arduino](#) This is a fun speaker timer I made for some upcoming conferences. It uses a 4-digit charlieplexed LED (pseudo 7-segment) display and is driven by a AVR ATmega328 or an Arduino. It allows a default time to be set, can be paused, and will put..... Listed under: [Clock – Timer Projects](#)
191.  [How to Build a Vibration Detector Circuit](#) In this project, we will go over how to build a vibration detector circuit. This is a circuit which can detect and measure flex, touch, vibration, and shock. The sensor we will use to detect these movements is a piezo vibration sensor from Measurement Specialists (MEAS). The..... Listed under: [Sensor – Transducer – Detector Projects](#)
192.  [Control an iPod with the Arduino](#) This tutorial will describe a way of controlling an iPod remote, and thus, an easy way of getting some music and sound out of your Arduino project. The remote we used was an unofficial remote I found on the worldwide auction site for around 10..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Phone Projects](#), [Projects](#)
193.  [DIY: Arduino Based Ohmmeter](#) This is a project based on Arduino board which can measure the unknown resistance values and perform diode test and continuity testing. When we connect the unknown resistor on the breadboard circuit, the 16x2 LCD displays the resistor value and when we connect a diode..... Listed under: [LED Projects](#)
194.  [Arduino Powered Four Letter Word Generator](#) Build an Arduino-powered version of the "Four Letter Word Generator" (FLW). This version generates "words" on the fly - it does not use a list. The "original" version from the 1970's used B7971 nixie alphanumeric tubes. These tubes are getting hard to find and they're..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#), [Projects](#)
195. [HSM-20G Interface with Arduino Uno](#) The HSM-20G is an analog humidity and temperature sensor that outputs analog voltage respects to relative humidity and temperature. However from this sensor relative humidity is found along with temperature. Relative humidity is the percentage of moistures of airs for particular temperature [1]. Feature:..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)



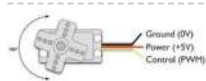
196.  [Real-time room temperature on your Website using Arduino](#) This is how to push high resolution real-time data from Arduino-based temperature sensor to your web page without any server-side coding. Arduino is a great device for collecting, storing and transferring data from various sensors but there are times you need to make your data..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#), [Temperature Measurement Projects](#)
197.  [How To Make a PC Control Robot](#) Do you ever tried to control your robot using your PC or laptop? Controlling a robot using PC or laptop is often being a fun for the student or hobbyist. Thus during this article you will be tend to learn how to control your robot..... Listed under: [Robotics – Automation Projects](#)
198.  [Arduino Controlled Nerf Vulcan](#) Yes, this is exactly what the title says it is. This instructable will teach you how to control any Nerf Vulcan, with your Arduino. The provided tutorial will just shoot for 2.5 seconds, stop for 2.5 seconds, and so on. It is like a "hello..... Listed under: [Game – Entertainment Project Ideas](#), [Ideas](#)
199.  [PSoC 4 Pioneer Kit Community Project#042 – Hangman Game](#) Hello! It has been our Friday tradition for the past few weeks to end with a game. This week we have the Hangman game. In this game the user will be using two Pmod boards, an LCD and Button board to display outputs and generate..... Listed under: [Game – Entertainment Projects](#)
200.  [Build a big crane game using Arduino](#) How to build a whole room crane game. Based on the arcade style 'Crane Game' or 'Claw Machine'. This is a continuation of a previous instructable titled CRANE GAME in which we built a 2-axis crane game in a door frame. We have now added a third axis and..... Listed under: [Game – Entertainment Projects](#), [Projects](#)
201.  [Battery powered device hardware design tips](#) I'm working on a prototype product(Wifi motion sensor) that will be powered from a battery source, it has a mega328(arduino bootloader, with sleep mode on and wake on interrupt,and WDT in case it hangs up), a PIR motion sensor , and a CC3000 break out..... Listed under: [Wireless Projects](#)
202.  [Accelerometer powered LED dress](#) Let's be honest for a moment, doesn't everyone want a dress that lights up at your very whim? No? Alright, well I do. It's pretty straightforward, though the programming gets a wee bit tricky. So pick up your pencil, sketch out a design and then we'll..... Listed under: [LED Projects](#), [Metering – Instrument Projects](#)
203.  [Beacon](#) In this tutorial you will learn how to turn any conductive surface into a capacitive touch sensor. This project illustrates how to use capacitive touch to turn on a motor (fan) and neopixel. In this example, all of the components were custom designed and built..... Listed under: [Sensor – Transducer – Detector Projects](#)
204.  [Digital thermometer using arduino](#) Digital thermometer using arduino and LM35. This article is about a simple three digit digital thermometer using arduino. Range of this thermometer is from 0°C to 99.9°C. There is also a provision for displaying the temperature in °F scale. Three terminal analog temperature sensor LM35..... Listed under: [Metering – Instrument Projects](#)
205.  [Making sound \(noise\) machines using Arduino](#) As a part of being an artist in residence at Instructables, I took it upon myself to build of couple of noise machines / music boxes. My interest lies in designing objects that would enable people to explore the world of sound synthesis and for..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#), [Sound – Audio Projects](#)
206.  [Arduino powered voltmeter and temp gauge](#) For a while I have been looking for a way of getting a reading of main and leisure battery voltage, and inside and outside temperature in the van. I spent ages on researching and found some bits here and there that might help, but nothing..... Listed under: [Sensor – Transducer – Detector Projects](#)
207.  [Play Music using Arduino Esplora](#) This example shows how to play notes on the buzzer mounted on the Arduino Esplora. Buzzers can generate different audio signals in audible frequency ranges. A note is an audio signal at a specific frequency. If you know the frequency of the notes you want..... Listed under: [Projects](#), [Sound – Audio Projects](#)
208.  [Servo Feedback Hack \(free\)](#) This Instructable brought to you by the kind folks a Rachel's Electronics Visit www.rachelselectronics.com for cool electronics kits and breadouts! This hobby servo hack will add shaft position feedback by tapping into the servo's own internal potentiometer. The only parts that need are wire and..... Listed under: [Sensor – Transducer – Detector Projects](#)
209.  [Make A Simple Object Tracking Robot Using Arduino](#) In this tutorial I am going to post the step-by-step procedure to make a simple Object Tracking Bot. The main aim of this Bot is to follow the objects which are shown to it in 3D space i.e., x, y and z – axis (horizontal,..... Listed under: [Robotics – Automation Projects](#)
210. [How to Send Message from GSM Module using Arduino](#) The GSM stands for Global System for Mobile communications. This is a global standard which is followed by the GSM modules inside the cellular phones which enables them to be connected with any mobile network around the globe. In certain



applications the microcontroller based systems..... Listed under: [Phone Projects](#)



211. [RFIDuino – Using an Arduino & RFID Reader to make a puzzle GeoCache](#) I enjoy both Geocaching and electronics and have made a couple of electronic puzzle caches using an Arduino. My latest creation (with the help of a fellow cacher for the code) is using an Arduino and RFID reader to make a puzzle geocache we call..... Listed under: [Ideas](#), [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)



212. [Servo Motor Simulation via Arduino UNO](#) Hey everyone. I hope you will be fine. As you know that last time, we had started Arduino UNO course and given you a brief introduction how to simulate the LED blinking via Arduino UNO and its implementation in proteus ISIS. Now, today we are..... Listed under: [Motor Projects](#)



213. [Web Client Repeating using Arduino](#) This example shows you how to make repeated HTTP requests using an Ethernet shield. This example uses DNS, by assigning the Ethernet client with a MAC address, IP address, and DNS address. It connects to <http://www.arduino.cc/latest.txt>. The content of the page is viewable through your..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)



214. [Poor Man's Robot Base](#) I've been wanting to get into robotics for awhile now, but it can cost at the very least 20 dollars to build a decent motor base, and I wasn't willing to invest that much money into it, so I made a robot base using parts..... Listed under: [Robotics – Automation Project Ideas](#)



215. [Temperature Display Using LCD](#) Here is a Simple Temperature Display Circuit using LCD (Liquid Crystal Display). For Heat Sensor we have used IC LM35 (Precision Centigrade Temperature Sensors) whose Output voltage is linearly proportional to the Celsius (Centigrade) temperature. Output of LM35 IC is 10mv/degree centigrade for eg if..... Listed under: [LCD Projects](#)



216. [Arduino Based Lie Detector](#) We have previously posted the the project lie detector, now here is is also a lie detector using arduino. Here is a simple tutorial to build a simple lie detector which will give visual indication through LED arrangement whether the person speaks lie or truth. The project uses a..... Listed under: [LED Projects](#)



217. [Build A Easy Home Surveillance Gadget Using Arduino](#) Everyone wants to keep their home secure. If zombies have swarmed your house, you want to know it's not safe to return, RIGHT? What better way to do this than to set up a surveillance system? Now it's easier than ever to have. And, you don't..... Listed under: [Home Automation Projects](#), [Security – Safety Project Ideas](#), [Video – Camera – Imaging Projects](#)



218. [Lambda Calculus in a Can using Arduino](#) You can get soup in a can. You can get bread in a can (*). Now the long wait is over! You can finally get Lambda Calculus in a can. Project LambdaCan is an amusing exercise in absurdity. It implements a reducer (interpreter) for the..... Listed under: [Development Board – Kits Projects](#), [Projects](#)



219. [Fritzing – The Ultimate Tool For Sketching Out Electronics Projects \[Cross Platform\]](#) Despite sounding like an alcopop, Fritzing is actually an incredible bit of free software you can use to create circuit and component diagrams for use with rapid-prototyping electronics boards such as the fantastic open-source Arduino. As such, it's open source too, entirely cross platform and..... Listed under: [Development Board – Kits Projects](#)



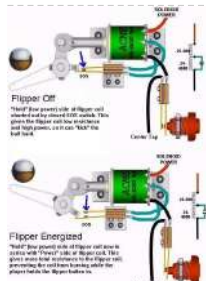
220. [Make A LCD Shifter for Arduino](#) The original idea was to create a library that simplify the use of IC 74HC595 between Arduino and other hardware. In this Instructable I will share this to you using as example the control of a 16x2 LCD. The example will show on the LCD..... Listed under: [LCD Projects](#)



221. [Arduino 7 Segment LED Display and Counter – Tutorial #8](#) This is a simple 0 to 9 counter circuit constructed using Arduino! Here, a common cathode 7-segment LED display is connected to Arduino for displaying the digits. The code (Arduino sketch) allows push button increment of the counter from 0 to 9. The whole circuit..... Listed under: [LED Projects](#)



222. [Temperature Sensor DS18B20](#) Electronic Brick, Waterproof and other Versions NOTE: There are different-appearing versions but they work the same. This is an electronic thermometer which has high accuracy over a wide range (accurate to $\pm 0.5^{\circ}\text{C}$ over the range of -10°C to $+85^{\circ}\text{C}$) (Workable from -55°C to $+125^{\circ}\text{C}$). You..... Listed under: [Metering – Instrument Projects](#)



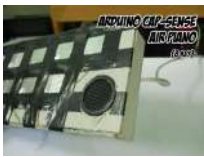
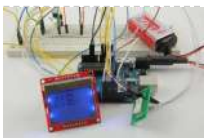
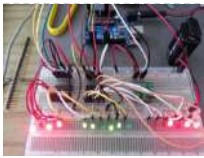
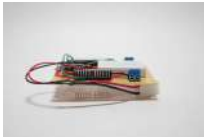
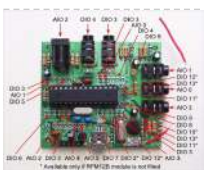
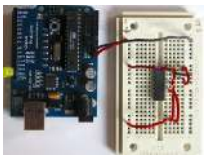
223. [Playfield :: Hardware :: Flippers](#) If you are contemplating building your own machine, then you probably already know a good bit about how pinball machines work. It's basically series of electro-mechanical events where a steel ball activates a switch, which in turn fires a solenoid that drives a mechanism, sending the ball off in some other..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)



224. [StrobeDuino – Computer-controlled RGB strobe/lamp](#) After experimenting with Arduino and Processing serial communication i wanted to do something cool. I had some RGB LEDs lying around so i thought about making something with them. I ended up with a strobe/lamp controlled by a Processing sketch that receives the commands from..... Listed under: [LED Projects](#)

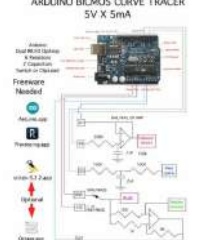


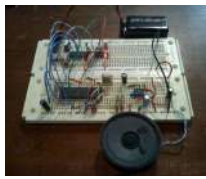
225. [Arduino – Theremin with 7 Segment LED Display](#) In this instructable, I will show you how to make a simple toy that combination of the LEDs flash and Theremin. We're gonna using some basic electronics built on top of an Arduino. The basic idea of 7 Segment LED Display was from Enjoying Electronics..... Listed under: [LED Projects](#)

226.  [Make A Air Cap-Sense Piano Using Arduino](#) I recently got my shipment of 10 buzzers I ordered about a month ago, so as soon as I got them I was eager to make something fun with them, so I looked around a bit and searched for what to do with them, and..... Listed under: [Game – Entertainment Projects](#), [Projects](#), [Sound – Audio Project Ideas](#)
227.  [Arduino multi-mode lamp with soft touch switch](#) In this Arduino-based project, we will build a lamp with multiple light displays: color sequencer, dimming light, color chaser, firelight - all selected by a touch bar on the circuit board. All the functions are done in software, including the touch sensor, which is a..... Listed under: [Home Automation Projects](#), [LED Projects](#), [Projects](#)
228.  [The Transistor Menace – Questions regarding an Arduino rgb LED project](#) I've been browsing this forum and the internet now for a couple of days and what I thought would be an easy side project turned into a (for me) quite complicated matter. I'm planning to build a mood light that consists of 12 common cathode..... Listed under: [LED Projects](#)
229.  [HSM-20G temperature & humidity analog sensor + Nokia5110 LCD](#) Temperature and humidity measurement are always a nice addition to hobbyist projects. In my previous post, I've discussed the DHT11 sensor, which is capable of measuring both temperature and humidity. They are digital sensor and provide calibrated outputs with temperature and relative humidity. I've also..... Listed under: [LED Projects](#), [Phone Projects](#)
230.  [Arduino Binary Clock \(hours, minutes and seconds\)](#) Hello everyone; I was looking for this project for a long time. Finally I it it together with a lot of effort. For this project you will need: [box color="#985D00" bg="#FFF8CB" font="verdana" fontsize="14 " radius="20 " border="#985D12" float="right" head="Major Components in Project" headbg="#FFEB70" headcolor="#985D00"] 1- Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#)
231.  [Remote Controlled lunaring with Arduino](#) Nothing puts the fun back into coding like watching your very own creations come to life in the physical world. Luckily, with the current glut of high-tech toys and electronic gadgets on the market, it's never been easier to experience the thrill of designing your..... Listed under: [Wireless Projects](#)
232.  [Quick and Easy Arduino Compatible H-bridge Shield](#) In this instructable I will detail how I went about making a quick and easy, Arduino compatible, H-bridge shield. But first, a brief intro into what got me motivated to make it. A couple of years ago, I started wanting to learn more about micro-controllers..... Listed under: [Development Board – Kits Project Ideas](#), [Ideas](#)
233.  [PC-350: Arduino Synthesiser](#) Contents Aim To create a device that takes a users input and based upon that input play sounds. I want this 'synthesiser' to be simple to play, requiring little or no skill. Therefore, allowing the user to experiment with the sounds they are producing instantly..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
234.  [Compact Protoboard Arduino type thing yea](#) This ible is for the building of my small, almost matchbox size, arduino compatable board. As seen in this ible.. <http://www.instructables.com/id/Pocket-Ardiuno-kit/> I experemented with the one in this ible to see how it can be impreoved, but the consept is the same and so is..... Listed under: [Development Board – Kits Projects](#)
235.  [Solar powered wireless Arduino based Geiger counter porject.](#) Hello, I have plans to build myself a solar powered wireless Geiger counter using a RH Electronics Arduino IDE Geiger counter connected via a serial connection through a logic level converter to a 3.3V ATmega328P-AU Pro MCU with an ESP8266 serial WiFi tranceiver to send..... Listed under: [Solar energy projects](#), [Wireless Projects](#)
236.  [Diverting surplus PV Power](#) As mentioned on the Contents page, two different hardware platforms have been successfully used to support Mk2 PV Routers. [Update at 7/3/14: Since writing this article, I have developed a new hardware platform which has been specifically designed for this product. The main board has..... Listed under: [Development Board – Kits Projects](#)
237.  [Pimp Your Chocolates with Arduino IDE and ATtiny13](#) The idea for this project came to me on the way to the trash. I was tasked with throwing away a box that has just been emptied of its original Ferrero Rocher sweetness content by my dear wife. This was shortly after the Valentine's Day..... Listed under: [Game – Entertainment Project Ideas](#), [Ideas](#)
238.  [RS-232](#) In this tutorial you will learn how to communicate with a computer using a MAX3323 single channel RS-232 driver/receiver and a software serial connection on the Arduino. A general purpose software serial tutorial can be found here. Materials needed: Computer with a terminal program installed..... Listed under: [Development Board – Kits Projects](#)
239.  [Arduino \(Optic Fibre\)](#) I just brought a new lamp and after a week, I'm tired of looking at it randomly change colours between red, blue, green. What can you expect from a cheap lamp brought at 5\$. Looking at the lamp I realized that I could make..... Listed under: [Home Automation Projects](#), [LED Projects](#)
240.  [Arduino 2.4 GHz Spectrum Analyser](#) This article describes a simple spectrum analyser for the 2.4 to 2.5 GHz Wi-Fi band. It's based on the Cypress CYWM6935 Wireless Radio Module. Although the manufacturer doesn't recommend it for new commercial projects, it is still widely available from eBay suppliers and Farnell here..... Listed under: [LCD Projects](#)
241.  [Arduino Laser Show \(adapted from NothingLabs' Instructable\)](#) This project uses an Arduino, a pair of speakers, and a laser pointer to create a laser projector able to trace out designs in a dark room. To power it, I've cannibalized a PC ATX power supply capable of delivering pleni current for the..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#)

242.  [Daos's diy arduino thermal differential controller](#) We have a great thread that contains lots of info on thermal differential controllers here. However, I wanted to start a thread dedicated to my own development of a thermal differential controller that I'll be using for my attic heat reclamation project. Tonight I setup..... Listed under: [Sensor – Transducer – Detector Projects](#)
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243.  [How to Deal with Noisy Neighbors with Arduino device](#) My next door neighbors have recently been playing their music really loud so that I can hear it through the walls. I've gotten tired of having to bang on the walls each time to get them to quiet down, so I decided to automate some..... Listed under: [Home Automation Project Ideas](#), [Ideas](#)
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244.  [Build a cat litter box fan with Arduino](#) A hideaway cat litter box is a great way to make your apartment look like a residence for adults instead of crazy cat ladies. A hidden litter box in a cabinet, under a sink, or built in to some other furniture does a lot for..... Listed under: [Game – Entertainment Project Ideas](#), [Ideas](#)
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245.  [A Simple Bat Detector based shield for the Arduino Uno](#) I've built a number of projects that have interfaced the output of the Simple Bat Detector with a microprocessor. The most recent was the BatLogger II. But I hadn't come up with an easy way for others to experiment with this idea ... until now..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
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246.  [How to make \(and connect\) a soft potentiometer](#) This instructable will tell you how to make and connect a soft potentiometer to a microcontroller, in particular we will connect it to a Lilypad Arduino. In our case soft potentiometer means a potentiometer made of a textile conductive ribbon. What you need: 1. soft..... Listed under: [Metering – Instrument Projects](#)
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247.  [Arduino UNO Tutorial 8 – NightLight](#) In this Arduino UNO tutorial, we are going to use a Light Dependent Resistor (LDR) to create a simple childrens bedroom nightlight which turns on automatically when it gets dark and turns off when it gets light. An LDR's resistance changes depending upon the amount..... Listed under: [Sensor – Transducer – Detector Projects](#)
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248.  [1 LED Game with Arduino Uno and an RGB LED](#) Sometimes I just have those days where I really want to make something neat with the Arduino I have lying around, but I know I don't have the patience for a more involved project that'll take more than a day or so. This is for..... Listed under: [LED Projects](#)
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249.  [LED aquarium lighting with an Arduino based PWM timer](#) I bought a small aquarium (54l) as an impulse buy and I needed some lights for it, so naturally I wanted to use LEDs. I also needed a timer for the lights. I also wanted the lights to fade in and out when they were..... Listed under: [LED Projects](#)
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250.  [Ground Tracking LED Longboard Mod](#) This mod uses a custom designed encoder on one of the wheels to track where the longboard is on the ground and light up the LEDs so that the light pattern remains stationary on the ground as the board moves over it. To make doing..... Listed under: [LED Projects](#), [Sensor – Transducer – Detector Projects](#)
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251.  [Arduino Clock using Standard Clock Display](#) This is a relatively simple clock to build, in terms of the hardware required and in terms of hooking up all the wires. The complexity lies in the software, which I've conveniently included as part of this instructable 😊 This instructable illustrates a few things:..... Listed under: [Clock – Timer Projects](#), [Projects](#)
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252.  [Getting Things to Talk: Arduino + LCDs](#) I spent the better part of the day on Saturday doing some more basic research into connecting an Arduino and LCD for this ongoing project. For the most part, it's pretty basic and following the wiring diagrams and tutorials online is fine. I ran into..... Listed under: [LCD Projects](#)
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253.  [TV Volume Loudness Guard using Arduino](#) UPDATES Mar 05, 2013 Featured on WonderHowTo <http://goo.gl/fpeVC> Feb 14, 2013 Featured on LifeHacker <http://goo.gl/tx4QG> Feb 13, 2013 I have updated the Arduino program in step 4 to support additional remote controls. Feb 13, 2013 Featured on Dangerous Prototypes <http://goo.gl/DJcwe> Feb 12, 2013 Featured on Semageek <http://goo.gl/EH58K> Feb 12, 2013 Featured on..... Listed under: [Home Automation Project Ideas](#), [Ideas](#), [Sound – Audio Project Ideas](#)
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254.  [Arduino ISP – Lazy Old Geek \(LOG\)](#) Arduino ISP - LOG So this Lazy Old Geek (LOG) has had a lot of trouble getting Arduino bootload on Atmega chips. I couldn't get either of these to work with Arduino UNO Rev3. <http://arduino.cc/en/Tutorial/ArduinoISP> <http://letsmakerobots.com/node/35649> So I developed a couple that worked for me:..... Listed under: [Arduino Programmer Projects](#)
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255.  [Home Automation with Android and Arduino Yún](#) The Arduino Yún is a WLAN capable development board featuring an ATmega microcontroller, as well as a separate chip running a small Linux distribution, making it a perfect candidate for home automation projects like in the picture below! This basic tutorial will show you how..... Listed under: [Home Automation Projects](#)
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256.  [Make an Atom Synchronised Clock from a 1950's Slave Dial using Arduino](#) One day while exploring the bric-a-brac at the markets, I stumbled across an old, Bakelite slave dial from the 1950's. Slave Dials are clock movements without the actual time keeping circuit. All they contain is the mechanism to drive the hour and minute hands, which..... Listed under: [Clock – Timer Projects](#), [Projects](#)
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257.  [Make Electronic Dice using Arduino](#) In this project we make electronic dice. Updated 18/03/2013 In this article you can learn how to make an electronic die (die is the singular of dice), using an ATmega328 with Arduino bootloader and a few inexpensive components. The reason for doing this is to introduce another..... Listed under: [Other Projects](#), [Projects](#)
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258.  [Arduino Knob](#) Control the position of a RC (hobby) servo motor with your Arduino and a potentiometer. This example makes use of the Arduino servo library. Hardware Required Arduino Board (1) Servo Motor (1) Potentiometer hook-up wire Circuit Servo motors have three

wires: power, ground, and signal..... Listed under: [Motor Projects](#)

259.  [Prototyping shield for Arduino Mega](#) This is a down and dirty prototyping shield that will work for Arduino Mega's and there pin compatible clones. This is the first time i have made this board, but i have other projects i think this would be handy for. [box color="#985D00" bg="#FFF8CB" font="verdana"..... Listed under: [Development Board – Kits Projects](#)
260.  [LED Sun rise/set Arduino Proj](#) I've been slowly working on this project for the past month or so. I finally have some time to share and post-up what I'm working on. I know there are commercial products available, but then what's the fun in that! What I want is a..... Listed under: [LED Projects](#)
261.  [Orange mePod](#) Firstly, why would I make a music player when one can be purchased for so little and Apple iPods are so great? Well, I'll tell you. After several cheap MP3 clones have died due to their Lipo batteries and my cracked, inoperable screen on my..... Listed under: [Sound – Audio Projects](#)
262.  [Remotely Controlled VGA Camera – Overview](#) The idea behind this project was very straightforward: design an inexpensive remotely controlled system capable of taking still pictures and uploading them to a remote file storage with a camera to be activated by either remote commands or sensor events. And after numerous brain storms..... Listed under: [Wireless Projects](#)
263.  [Introduction: T.A.B.U. A Robot using Arduino](#) To all other teens (I'm 16) who have begun to pick up an intrest in robotics and electronics the following project will give you a great user-system to get started with. This is not for complete beginners, but after only 6 months of teaching myself..... Listed under: [Projects](#), [Robotics – Automation Projects](#)
264.  [DIY Thermal Differential Controller – Part 4: Building Your Own](#) In our last episode, I explained how I redesigned the controller from what I first thought I was going to do. Now, I am going to explain how to make your own thermal differential controller based on mine. As it is, this setup will only..... Listed under: [How To – DIY – Projects](#)
265.  [CustomKeys using an Arduino](#) CustomKeys is a customizable, Arduino-based, polyphonic synthesizer. The CustomKeys keyboard uses capacitive touch sensing - each key is made of a conductive material which, when touched, signals the synthesizer to emit a tone from the speaker. The CustomKeys library allows the user to choose an..... Listed under: [Projects](#), [Sound – Audio Projects](#)
266.  [Nerd++: Controlling Dioder RGB LED Strips with Arduino, Pt. 1 – Getting Started](#) A few weeks ago, it came to my attention that IKEA do a set of colour-changeable LED strips. I've been looking for a decent way of providing some lighting behind my computer to reduce eye-strain for a long time, and these seemed perfect: I was..... Listed under: [LED Projects](#)
267.  [DIY- G-force measurement system](#) So this time around, it's another fun and functional microcontroller based DIY, a g-force measurement system with data logging to SD card. HARDWARE USED: 1) Arduino UNO w/ATmega328P 2) 3-axis accelerometer breakout 3) SD card 4) SD card breakout w/level shifting circuit 5) LED HOW..... Listed under: [Game – Entertainment Projects](#), [How To – DIY – Projects](#)
268.  [Autonomous Robot Part 3: Ghosty](#) Introduction Ghosty is an autonomous little robot who is adventurous and loves to explore his surroundings. However, unlike a normal ghost, he doesn't like to scare people. Instead they actually scare him! In our most current version of Ghosty, his vision line is based on..... Listed under: [Motor Projects](#)
269.  [Animatronic Stargate helmet using Arduino](#) I love the movie Stargate and when I first saw it I immediately knew I wanted to make one of the super cool Horus guard helmets. I had sketched multiple designs over the years and figured out several different methods for building it but rejected..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)
270.  [Arduino BICMOS Curve Tracer](#) Draw curve traces for both Bipolar and CMOS transistors using this hardware and free online software. Step 1: Upload and Plot Curve for NPN, PNP, NMOS, and PMOS The data for the transistor curves gets uploaded into any computer and can be plotted using SciLab..... Listed under: [Sensor – Transducer – Detector Projects](#)
271.  [Arduino Laser Security Shield](#) *** I AM THIRTEEN. I REALLY ENJOY PUTTING TOGETHER THESE INSTRUCTABLES. PLEASE SHOW SUPPORT BY VOTING FOR ME IN THE LASER CUTTER CONTEST - <http://www.instructables.com/contest/epilog3/>*** I started thinking about this project a couple of months ago now. A laser tripwire that can log when the..... Listed under: [Projects](#), [Security – Safety Projects](#)
272.  [Arduino-based AVR High Voltage Programmer](#) Update 01/02/09: A PCB version of this circuit is in the design stages – some preliminary information is here. Update 03/11/09: Kits based on this design are now for sale! Update 12/14/10: The original AVR HV Rescue Shield kit has been replaced by the new..... Listed under: [Arduino Programmer Projects](#)
273. [SP0256-AL2 Speech With Arduino](#) Here's the Arduino version of a project to use the General Instruments (GI) SP0256-AL2 vintage speech synthesis chip to say "hello world". I'd previously shown how to do this with a Basic Stamp 2. Here's what it sounds like saying, "hello world" 20101215_164333.mp3 How it..... L under: [Development Board – Kits Projects](#)



274. [Si4707 Hookup Guide](#) Introduction Weather-band radio is an awesome public service provided in the US, Canada, and Bermuda. With hundreds of transmitting stations dotting the country, weather radio acts as the "voice of NOAA" (National Oceanic and Atmospheric Administration). In addition to spouting out weather forecasts, weather radio..... Listed under: [Development Board – Kits Projects](#)



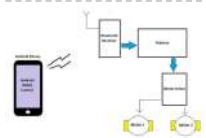
275. [Arduino UNO Tutorial 6 – Rotary Encoder](#) We have written a tutorial for Rotary Encoders using a Microchip microcontroller but now would be a good time to make an Arduino UNO version. With a rotary encoder we have two square wave outputs (A and B) which are 90 degrees out of phase..... Listed under: [Other Projects](#)



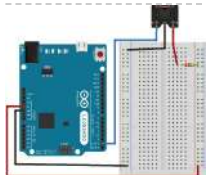
276. [Arduino LEDs](#) Description In this tutorial you will set up and turn on a single LED. Note that this code can actually be executed with just the Arduino and no other components as in Figure 5. If you notice, next to pin 13 is a tiny LED..... Listed under: [LED Projects](#)



277. [Arduino Leonardo AVR Development Board](#) Arduino Leonardo AVR Development Board is a microcontroller board based on the Atmel ATmega32u4. It offers 20 digital IOs (of which 7 can be used as PWM outputs and 12 as analog inputs), a 16MHz crystal oscillator, a micro USB connection, a power jack, an..... Listed under: [Development Board – Kits Projects](#)



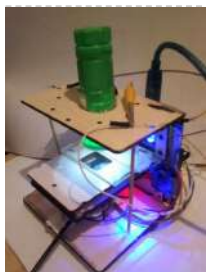
278. [Android Phone Controlled Robot using Arduino](#) The Android phone that stays in your hand most of the time is useful in many other applications apart from Whatsapp, Facebook; appliances; monitor your health parameters. How it would be if it can control a Robot, which can assist in your daily work. With..... Listed under: [Phone Projects](#), [Robotics – Automation Projects](#)



279. [Sending MIDI Messages](#) Introduction If you completed any of the buzzer projects, you will know by now that there is much fun to be had in making the Arduino create noises. The only issue you might have had is with the quality of the sound. Since MIDI is..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)



280. [Servo powered peristaltic pump controlled by Arduino](#) This instructable shows you how to make a pump using a servo motor and an Arduino Uno to transfer small amounts of liquids. The pump is a peristaltic pump which consists mainly of a motor, flexible tubing and a circular pump casing. Two rollers attached..... Listed under: [Motor Projects](#)



281. [Use A Simple Cheap Webcam To Make DIY Microscope](#) This Project Is A Part Of The Afrimakers Event <http://www.afrimakers.org/> Introduction We used a simple cheap webcam to make a microscope. In short, a small hack to the optics of a standard webcam with an adjustable focus-lens, allows to create video data, with a magnification..... Listed under: [Video – Camera – Imaging Projects](#)



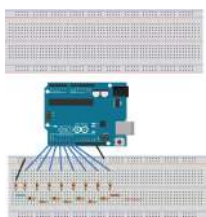
282. [Temperature Sensor v2.0](#) Overview This board allows you to use a thermistor to measure the temperature of something. It is designed to be used to measure things in the range of 100C - 300C, but with the proper calibration and resistors, it can be adapted to any temperature..... Listed under: [Temperature Measurement Projects](#)



283. [PhysComp: Mid-term Project – Instagram TUI – prototyping the interactive elements using Arduino](#) The physical interface will consist of a 3×3 grid of push buttons that will correspond to a 3×3 grid of images in the Processing program. Instead of a creating a 2D array of variables to correspond to the buttons' postions in the grid, each location..... Listed under: [Other Projects](#)



284. [Brushless DC \(BLDC\) motor with Arduino – Part 2. Circuit and Software](#) In this post I will describe the hardware and the software part of a project involving the use of BLDC (Brushless DC) motor salvaged from a broken Xbox 360. This is a second installment in the series of posts related to Arduino and brushless DC..... Listed under: [Motor Projects](#)



285. [Digital to Analogue Converter \(DAC\) DAC Theory](#) A digital to analogue converter takes a series of digital inputs (a string of 1s and 0s, in our case there will be 8 of them like 10011001) and converts it into an analogue output. You see DACs in every digital audio device (MP3 players,..... Listed under: [Sound – Audio Projects](#)



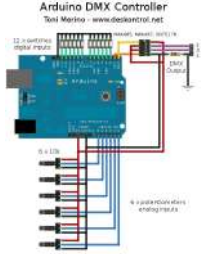
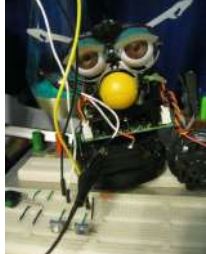
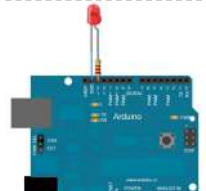
286. [The DIY Arduino Telescope GOTO control project](#) Why make your own Arduino control system? After completing my homemade telescope mount it was powered by a Meade DS motor kit. This system was extremely slow, underpowered and unreliable. It was also impossible for me to change the programming or maintain the system. I..... Listed under: [How To – DIY – Projects](#)



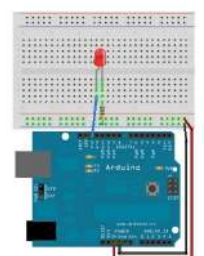
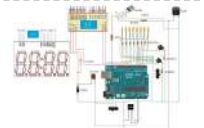
287. [Remote Controlled Switching](#) Vision The aim of our project is to be able to control a electrical switching process using a remote. The idea is to come up with an alternative to the conventional electric switch boards, using a wireless control mechanism, in an economic way. In other..... Listed under: [Wireless Projects](#)

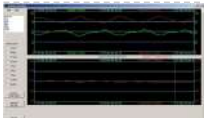
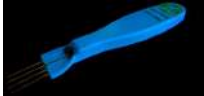
288. [Make An Motor Shield For Arduino](#) We are not the first to make an Motor Shield for Arduino. But could be that we are the first that make a Motor Shield a minimum of flexibility. We are studing a WiFi robot with camera controlled by Arduino. The robot will be..... Listed under: [Motor Projects](#)



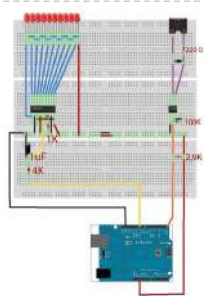
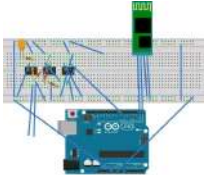
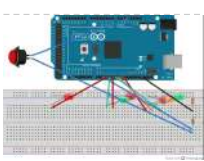
289.  [Mobile Controlled Automation Using Arduino](#) By this mobile controlled automation using Arduino you can perform switching operation of any load or device which is connected with the circuit. Before some days i posted about DTMF tone in mobile communication. Here i am using DTMF tone in this project. Visit following..... Listed under: [Phone Projects](#)
290.  [Toaster Oven Reflow Technique](#) Introduction This page describes how to reflow solder surface mount printed circuits using a cheap toaster oven. It owes a great deal to Nophead's Cooking with Hydraraptor blog post. The picture shows Sally Bowyer (Director, RepRapPro Ltd) preparing components for soldering in the oven. For..... Listed under: [Sensor – Transducer – Detector Projects](#)
291.  [Small Arduino DMX controller](#) In this post we show you how to make a small and useful Arduino DMX512 controller, which can use by example to handle a smoke machine with DMX, or as test equipment, etc... We can use Arduino Mega, Arduino UNO, and other with small changes..... Listed under: [Sensor – Transducer – Detector Projects](#)
292.  [Control a Furby with Arduino \(or other microcontroller\)](#) The Million Dollar Furby: We can rebuild him. We have the technology. Continued from the previous Instructable where we excised Furby's primitive brain , it's now time to replace it with something greater. This Instructable will detail how to install a new microcontroller in place..... Listed under: [Robotics – Automation Projects](#)
293.  [Arduino Tri-colour LED Flasher Circuit](#) This simple tri-colour LED flasher circuit is great for beginners. The three pin tri-colour LED is controller by an Arduino Uno and changed between three colours. This video shows the Arduino running a sketch that controls the tri-colour LED. Circuit Diagram for the Arduino Tri-colour..... Listed under: [LED Projects](#)
294.  [Tutorial 19: Arduino Dice Circuit And Sketch Using A 7-Segment Display](#) In this tutorial you will build a dice that is shaken by holding the button in and thrown by releasing the button. The shake, throw and number thrown are animated and displayed on a seven segment display. A 74HC595 IC is used to interface the..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
295.  [Blink An LED Using Arduino](#) This example shows the simplest thing you can do with an Arduino to see physical output: it blinks an LED. Hardware Required Arduino Board LED Resistor, anything between 220 ohm to 1K ohm Circuit To build the circuit, connect one end of the resistor to..... Listed under: [LED Projects](#)
296.  [Tutorial 16: Arduino Clock](#) In this tutorial, the Arduino displays the time and date on a LCD (optional) and in the Arduino IDE serial monitor window. A PCF8563 real time clock (RTC) IC is used to generate the time and date. The time and date can be set using..... Listed under: [Clock – Timer Projects](#)
297.  [The Arduino Microprocessor Miniterm Project Pages: keattsd](#) Navigation LCD_driver.c LCD_driver.h LCD_driver.h.out ball12d.php bojia.c bojia.c.out chenb.php doyer.php ellwangerk.php foo.txt frickd.php gamblec.php hurleyg.php keattsd.php littletonj.php panuskip.php parsonstc.php schrodere.php Here is keattsd Bluetooth SNES Controller Supplies I used the following supplies for my mini-term project: Arduino Uno microcontroller RN-42 bluetooth module USB A to B..... Listed under: [Bluetooth Projects](#), [LED Projects](#)
298.  [Magic Light \(Capacitance Sensor, First Arduino Project\)](#) This was my very first arduino project. Its great for beginners. Fade the color or the lights my moving your hands near it. It fades from a pretty purple blue to a firey red-orange. Its was SUPER easy to build, not to hard to write..... Listed under: [Sensor – Transducer – Detector Projects](#)
299.  [Temperature Sensing using DS18B20 Digital Sensors](#) Note: When referring to Arduino below, this works in the same way on the emonTx which is arduino-based. The DS18B20 is a small thermometer with a built in 12bit ADC; it can be easily connected to Arduino digital input. The sensor communicates over a one-wire..... Listed under: [Sensor – Transducer – Detector Projects](#)
300.  [Arduino Tiny Relay Shield Project](#) In this Arduino project, you will build a small relay shield from stripboard. The shield can have one or two relays fitted to it. Connect the Arduino and relay shield to your PC via a USB cable. Download the PC software and use it to..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
301.  [Arduino Platform – Interrupts Introduction](#) Introduction This is my second article relating to the Arduino Microprocessor Platform. The first one was a simple implementation of the SIMON game using the Arduino. The article can be found here. For an introduction to the Ardu

Hardware, see jeffb42's excellent articles, as there..... Listed under: [Development Board – Kits Projects](#)

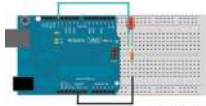
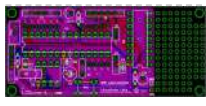
302.  [Open Source Home Automation Project using Arduino UNO + Ethernet Shield](#) This is Open Source Home Automation Project based on Arduino Uno and Arduino Wiznet based Ethernet shield. How Does it Work The main brain for this project is Arduino UNO Board along with Arduino Ethernet Shield to give it a wireless connectivity.Arduino runs a code..... Listed under: [Home Automation Projects](#)
303.  [How To Connect A Buzzer To An Arduino](#) This article and circuit diagram show how to connect a buzzer to an Arduino when the buzzer operates at a different voltage to the Arduino. The buzzer may operate at 9V, 12V or some other voltage. Arduinos such as the Arduino Uno operate from 5V..... Listed under: [Arduino Programmer Projects](#)
304.  [Thermal Camera: Arduino UNO + MLX90614 IR Thermometer](#) I did the following steps: 1) Hardware: Connect the MLX90614 (refer to the datasheet) as follows: Pin 1 on MLX (SCL) connect to ANALOG pin 5 on Arduino Pin 2 on MLX (SDA) connect to ANALOG pin 4 on Arduino Pin 3 on MLX (VDD)..... Listed under: [Video – Camera – Imaging Projects](#)
305.  [Arduino MicroBot Project](#) Steps On the breadboard, build two bi-directional motor control circuits (also known as "H-bridge") circuits. These circuits will control the two DC motors that drive the wheels. Each circuit will have two wires from the Arduino (one for forward, one for backward) to control the..... Listed under: [Robotics – Automation Projects](#)
306.  [Blinkenlights](#) Topics: Overview Hardware A Basic Schematic Diagram Resistors Reading Resistor Values Putting it Together Trying it out! More on Resistors and LEDs Software Comments Variables Procedures References Project 1.Overview As mentioned earlier, Arduino consists of two major parts: the hardware (the Arduino board) and the..... Listed under: [LED Projects](#)
307.  [GPS and GSM based Vehicle Tracking System Using Arduino](#) This circuit is designed for tracking the location of vehicles. Most of tracking systems are made by using GPS. This is very simple and cheap. Tracking systems are mostly used by fleet operators for tracking a vehicle location, routing and others. This is a very good..... Listed under: [GPS Based Projects](#)
308.  [Real Time GPS Tracker with Integrated Google Maps](#) This project describes how you can build a mobile real time GPS tracker with integrated Google Maps. I began this project mainly to see if I can integrate all the different pieces of hardware and software to make a workable solution, and it took some..... Listed under: [GPS Based Projects](#)
309.  [ArduDroid: A Simple 2-Way Bluetooth-based Android Controller for Arduino](#) UPDATES October 30, 2013 - 7PM (GMT+2) The new official name for this app is ArduDroid and it can be installed from Google Play. I changed the name to avoid a naming conflict with another app. September 15, 2013: I Have won a Nexus..... Listed under: [Bluetooth Projects](#)
310.  [Build An Audible Memory Chest \[Instructables How-To\]](#) If you're a fan of the Harry Potter series then we also bet you were pretty taken with Hogwarts headmaster Dumbledore's pensive—the magical object that could not only store memories, but actually let people fall into and re-experience the events. This week's Instructables How-To from..... Listed under: [LED Projects](#)
311.  [General Purpose Input Output Arduino Shield](#) This example shows technique for calibrating sensor input and shows the sensor outputs by controlling LEDs and SSD, also shows how to monitor the state of a switch. Hardware Required 8 LEDs 2 push button switches 2 sliding switches 4-SSD with MAX7221/7219 LM35 Speaker Circuit..... Listed under: [LED Projects](#)
312.  [Stage 4: Complete Beginner's Guide For Arduino Hardware Platform For DIY](#) Contents 1. Background 2. Setting up Arduino Development Environment 3. Arduino Power Management 3.1 Powering Up Arduino Board 3.2 Output Power of Arduino 4. Indicators And Switches 4.1 LED 4.1.1 Working With Onboard LED 4.1.2 Connecting and Controlling External LED 4.2 Buzzer 4.3 Switches 5..... Listed under: [How To – DIY – Projects](#)
313.  [Arduino project: USB foot-operated mouse switch](#) This foot pedal plugs into the Arduino case which plugs into your PC via microUSB cable. Arduino microcontrollers can easily be used to power fun projects like robots and even sending tweets to Twitter but they're versatile enough to turn up in the strangest of..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
314.  [Stream support for the Arduino MQTT library](#) MQTT is a lightweight messaging protocol for the Internet of Things. This post details the use of Stream support for large payload storage in the Arduino MQTT library. MQTT is a lightweight protocol, but that doesn't mean that the payloads have to be small. The..... Listed under: [Other Projects](#)
315.  [Technical Details of Logging Seawater Temperature](#) Block Diagram This diagram shows the basic components required for collecting temperature readings from seawater and transmitting the data to a base station where it can be collated into a database for analysis. To the left is a schematic of 10 temperature sensors, spaced 1..... Listed under: [Temperature Measurement Projects](#)
316.  [Modifying an Arduino Mega and chipKIT Max32 for 5V Operation](#) Max's Arduino Mega and chipKIT Max32 both require 9V external supplies, but he really wishes to power them from a single 5V supply. Well, nothing is simple, is it? I ran into a minor "gotcha" with regard to my Bodacious Acoustic Diagnostic Astoundingly Superior Spectromatic..... Listed under: [Development Board – Kits Projects](#)

317.  [Arduino Projects: Wireless Arduino](#) Long-time readers will know I'm not one to promote trendy marketing phrases and certainly 'Internet of Things' or 'IoT' is right up there with the best (worst) of them. But the concept behind the phrase is worth understanding as it drives the next generation of..... Listed under: [Wireless Projects](#)
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318.  [Making a RFID Card Reader with Arduino Yún](#) Surya Mattu is a creative technologist who loves to make things. He's based in NYC and working at ITP, a two-year graduate program exploring the imaginative use of communications technologies. Today he's sharing with us how feasible it could be to build an RFID-controlled entry..... Listed under: [RFID - NFC projects](#)
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319.  [Arduino Project 6: Web-controlled music player](#) Our NetPlay project is built on a standard breadboard. In our previous Arduino masterclass we briefly introduced the Ethernet Shield an Arduino expansion board that adds Ethernet connectivity plus microSD card storage. We used that storage as the basis of a simple one-button digital audio..... Listed under: [Other Projects](#)
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320.  [Simulating and controlling GE Color Effects Lights with Arduino](#) Overview This project builds a Christmas lights controller for the GE Color Effects lights allowing programmed control of up to 8 sets of Christmas lights. Furthermore, it provides a function specific language for programming patterns for these lights and an emulation environment for testing the..... Listed under: [LED Projects](#)
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321.  [Arduino Project 8: Stompy the robot \(part 1\)](#) Our first Arduino robot called Rolly in our February issue proved to be a popular project. Powered by an Arduino Uno board it was easy to put together and cost very little. In this project we upped the ante again with our first walking robot..... Listed under: [Robotics – Automation Projects](#)
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322.  [Tutorial: Arduino Motor/Stepper/Servo Shield – Part 1: Servos](#) This post starts a small (or larger?) series of tutorials using the Arduino Motor/Stepper/Servo Shield with the FRDM-KL25Z board. That motor shield is probably one of the most versatile on the market, and features 2 servo and 4 motor connectors for DC or stepper motors..... Listed under: [Motor Projects](#)
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323.  [Communication between a USB/serial device and an AVR \(atmega/Arduino\) microcontroller](#) I have a device which provides a USB port. If I attach it to a Windows PC it is recognized as a "CP2103 USB to UART Bridge Controller". According to the device documentation, it should communicate in serial format at 38400bps.I have to talk to..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
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324.  [Store Arduino data to Firebase database \[Howto\]](#) The last few weeks I was playing with Firebase mostly because I wanted to get familiar with this technology. So at some point I thought that it will be a great idea to connect Arduino with Firebase. Imagine that you have a simple temperature sensor..... Listed under: [Temperature Measurement Projects](#)
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325.  [New Arduino Project: Spectrum Analyzer?](#) I've been reading a lot about receivers, and it sounds like one important thing is filtering. It makes sense too - simple receivers can suffer from front end overload due to a strong signal. And when on the ham bands, you never know where that..... Listed under: [Development Board – Kits Projects](#)
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326.  [Arduino Projects: Digital Audio Recorder](#) Being able to capture sound, store it and play it over and over again never fails to leave me in awe of its pioneers, from Thomas Edison to Alan Blumlein, the British electrical engineer who, in 1931, invented 'binaural recording' – what we now call..... Listed under: [Sound – Audio Projects](#)
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327.  [Indoor Weather Station using Arduino](#) Introduction In my first article using the Arduino 2009 board, I described a simple temperature sensor interfaced using Visual Basic. I have developed the board and Visual Basic code to give a fairly usable indoor weather station. Overall Operation The Arduino 2009 acts as a..... Listed under: [Sensor – Transducer – Detector Projects](#)
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328.  [Develop A Arduino Weatherstation](#) At University, Alexander Zenger and I decided to realize a weatherstation with an Arduino Microcontroller. We wanted to measure temperature, pressure and humidity. It should be also possible to get every 5 min a value update on an external server. Our basic idea was to..... Listed under: [Temperature Measurement Projects](#)
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329.  [Arduino and Android Projects for the Evil Genius](#) Since this book was written, Arduino 1.0 was released and Google has changed the Open Accessory standard a lot. At the start of December 2011 Arduino 1.0 was released. This changed a few things, requiring all third-party libraries to be updated. This hasn't happened yet..... Listed under: [Phone Projects](#)
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330.  [1B – Arduino Project – Perry the Predator Pillow](#) The Team Kaitlin Schaer as scribe; Bryan Gardiner as tutor; Ruben Markowitz as designer; Anna Failla as integrator Introduction In a time where the logistics of sleep can be all too much to handle, there is a solution! There is a smarter pillow, a pillow that..... Listed under: [Home Automation Projects](#)
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331.  [Add a TFT Display to your Arduino projects \(1.8 TFT SPI 128×160\)](#) In all my arduino projects I was using cheap 1602 LCDs mostly because... they are cheap but also of the libraries flexibility. Recently I found a nice TFT 1.8 inch 128×160 in a very competitive price and i thought to give it a go. Just..... Listed under: [LCD Projects](#)
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332.  [The E-Taster Assistance System with Lab-on-Spoon and Lab-on Fork as 'Electronic Tongues'](#) Subject: Daily life activities of food preparation can be challenging for consumers due to restricted skills and experience, loss of perceptive abilities (accident/aging) or due to product fraud

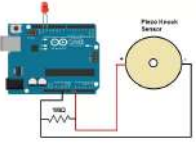
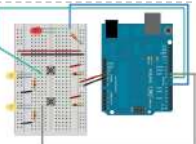
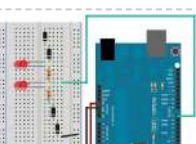
and contaminations, commonly summarized under the term of food adulteration, which are exceeding human perceptive abilities in..... Listed under: [Wireless Projects](#)

333.  [Interfacing an Arduino with LCDs](#) Introduction This is the second article in a three part series I am writing on the Arduino hardware platform. This article focuses on wiring an Arduino to a character LCD and a graphic LCD, and includes static and animated demos to show off the capabilities..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [LCD Projects](#)
334.  [Midi VU meter, LM3914, Arduino, PWM](#) Hello everybody, I've been working on a midi controller for some time now, Midi OUT hasn't been a problem, but for Midi IN i had to take some more time. i've used this circuit for midi input but i've used a 4n25: original thread @..... Listed under: [Metering – Instrument Projects](#)
335.  [Arduino Event-Driven Universal AV Remote](#) TL;DR - I wanted all of my AV components to turn on and change inputs as soon as I started Airplaying music to my Apple TV from my iPhone, so I popped open the Apple TV, wired up a photocell sensor to an Arduino Uno,..... Listed under: [Wireless Projects](#)
336.  [Android Arduino Communication through Modbus and Rs485](#) In this post I'd like to describe you a project I'm working on that consists of connecting an Android development board to one (or more) Arduino slave(s) using modbus protocol and rs485. Even though the idea of this project could be applied in many fields,..... Listed under: [Development Board – Kits Projects](#)
337.  [Safe and simple AC PWM Dimmer for arduino / Raspberry.pi](#) Dimmer With MOSFET This circuit shows that dimmers intended for use at mains voltage do not always have to contain a triac. Here, a MOSFET (BUZ41A, 500 V/4.5A) in a diode bridge is used to control the voltage across an incandescent bulb with pulse-width modulation..... Listed under: [PWM Projects](#)
338.  [Ultrasonic sensor arduino mega with code](#) This is a simple guide on how to make a Ultrasonic sensor arduino mega with code, an HC-SRO4 Ultrasonic Sensor, a Buzzer, and some leds. The ultimate goal of this tutorial is to use the buzzer and LEDs to display how far the object is..... Listed under: [LED Projects](#)
339.  [Displaying Arduino data](#) Arduino temperature display I've had an Arduino-based weather station since June 2009, but one problem with it has been that there hasn't been any easy way to display the data in real time without going to the database (or the raw import files) to see..... Listed under: [LCD Projects](#)
340.  [Arduino – Cannot get ECG readings from heart, but I do when I poke at the leads](#) down vote favorite I have a minor issue with my ECG. When I poke at the leads, I get a reading. But when I hold the leads or place it near my heart, I don't get anything. I'm pretty sure this is hardware related, but..... Listed under: [Medical – Health based Projects](#)
341.  [Pololu Wixel Shield for Arduino User's Guide](#) 1. Overview The Wixel shield seamlessly enables a wireless link (with a typical range of ~50 feet) to replace your Arduino's USB interface, which means you can use the standard Arduino computer software to: wirelessly program the Arduino (this feature is not available with the Arduino..... Listed under: [Wireless Projects](#)
342.  [Stepper Motor Control System Based On Arduino With ULN2003 Chip](#) Project Summary: This project uses ULN2003 chip to drive. The working voltage is DC5V. It is widely used on ATM machine, inkjet printer, cutting plotter, fax machine, spraying equipment, medical instruments and equipments, PC peripheral, and USB Mass Storage ,precise instrument, industrial control system, office automation, robot areas, etc. Bill of..... Listed under: [Motor Projects](#)
343.  [How to make a Arduino LED Scroll Bar](#) Today I want to make a LED Scroll Bar as the above picture showed. Ten LED strips can flash in different effects by using a control board. Required Components LED strip, Arduino Nano, Dupont line and a control board. So, how to make a LED..... Listed under: [LED Projects](#)
344.  [Traffic light and pedestrian crossing implemented with an Arduino](#) This video shows the Traffic light and pedestrian crossing I've implemented with an Arduino. It's a reproduction of the crossing near my home, timings taken from a video of it. Incidentally, I produced the diagrams for this using a product called Fritzing. It's a nifty piece of..... Listed under: [Development Board – Kits Projects](#)
345.  [Build A Rain Alarm Project Using Arduino](#) Water is basic need in every one's life. Saving and proper usage of water is very important. Here is an easy project which will give the alarm when there is rain, so that we can make some actions and save the rain water. As a..... Listed under: [Home Automation Projects](#)
346.  [RC Quadrotor Helicopter](#) This project is a RC quadrotor helicopter (quadcopter, quadcopter, quadricopter, etc). It's a RC helicopter that uses 4 rotors. You need some pre-requisite skills: How to use Arduino, enough to get started Soldering, wiring, basic electronic skills Basic hand tool operation A quadrotor helicopter flies..... Listed under: [How To – DIY – Projects](#)
347.  [\[ETC\] Open Feathercoin ATM](#) Open Fethercoin ATM is an open-source automated teller machine for education and experimentation. Based on John Mayo Smith's OpenBitcoinATM which can be seen in action here A "voucher" is printed containing a private key QR Code that has been pre-loaded with the correct value of..... Listed under: [Other Projects](#)
348. [Scooterputer](#) I spend a fair amount of time zipping around town on my scooter, and thought it would be cool to add a voltage monitor to warn when the battery might need recharging. Waiting until the electric starter no longer works is somehow lacking. So after..... Listed under: [LED Projects](#)



349.  [Arduino Tutorial – Chapter 2.3: Schematic and Breadboard Diagrams](#) Schematic Diagram You may remember, if you studied electronics as part of your science course at school, that there is a specific way of drawing circuit diagrams. Each component has a particular symbol (which may vary slightly depending where in the world you live) that..... Listed under: [Development Board – Kits Projects](#), [LED Projects](#)
350.  [The LCDuino-1 I/O processor](#) News - April 25, 2010: All future announcements and updates for the LCDuino-1 and related app modules (δ1 relay-based attenuator, δ2 relay-based input/output selector, and others) have moved to the new AMB DIY audio forum. We have an entire forum category dedicated to the LCDuino..... Listed under: [LCD Projects](#)
351.  [Web Server with Two Temperature Gauges](#) This project consists of two temperatures that are measured by the Arduino using two MCP9700 temperature sensors An Arduino Uno and Ethernet shield are set up as a web server that hosts a web page to display the two temperatures on two gauges. The web..... Listed under: [Temperature Measurement Projects](#)
352.  [How to Text Yourself when your DSC PC1550 Home Security System Alarms](#) I have a home security system that was installed when my home was built in the early 1990's. It is, or was until I modified it, a wired perimeter system with a single wired motion detector. The system is a DSC PC1550 and originally was..... Listed under: [Security – Safety Projects](#)
353.  [A lightning flash counter](#) Many years ago, I think it was in 1997, I stepped into an interesting circuit on a book about high voltage [1]. It was the diagram of a simple "lightning flash counter" intended to help in designing lightning protections on power lines. The description was..... Listed under: [Other Projects](#)
354.  [Using an Arduino as a garage car parking sensor](#) "M-my lord, it-it's impossible to locate the ship. It's out of our range." – Nute Gunray We recently moved into a new house and as always the first problem to address was finding the optimal place to park cars in the garage. Ideally, we wanted..... Listed under: [Sensor – Transducer – Detector Projects](#)
355.  [Gesture control car\(robot\) with Arduino and Android\(bluetooth\)](#) Hi folks, Here's an interesting project for all you creative minds out there. We are going to build an android phone controlled RC car. Nothing could be more fascinating than remote controlled cars. This one uses Bluetooth for communication and accelerometer of the mobile device..... Listed under: [Bluetooth Projects](#), [Robotics – Automation Projects](#)
356.  [GSM Home Security Alarm System with Arduino](#) This project deals with the design & development of a theft control system for home, which is being used to prevent/control any theft attempt. The developed system makes use of an embedded system (comprises an open hardware microcontroller and a gsm modem) based on Global..... Listed under: [Home Automation Projects](#), [Security – Safety Projects](#)
357.  [Arduino RFID Reader RC522 + Access Control System](#) I just received my RC522 RFID reader and made this simple Arduino access control system that uses the reader, a buzzer for the alarm and a relay shield for the security system. The relay can be used to open a door lock and if you..... Listed under: [RFID - NFC projects](#)
358.  [Fun With The Arduino Esplora: A Digital Picture Frame](#) With this article I kick off my series on the Arduino Esplora board. Today's project is a nice (and cheap!) little digital picture frame that uses the Esplora's TFT Screen add-on. Materials Needed In this section you will find the materials that you need to..... Listed under: [LED Projects](#)
359.  [Rotary Encoder & Arduino](#) I am not sure, but it was in year 1999, a non-stop (360 degree rotation) potentiometer found in a stereo music system confused me a lot. At that time, I failed to keyed out the strange potentiometer manufactured by ALPS. Later, I learned that it's..... Listed under: [Other Projects](#)
360.  [Arduino based Bi-color LED Matrix Flappy Bird Game](#) We have built quite a few projects using the Bi-color (Red and Green) LED Matrix Driver Module kits from jolliFactory and have published them as instructables here. Each of these modules uses two MAX7219 Display Driver ICs to drive a Bi-color LED Matrix. These ICs..... Listed under: [LED Projects](#)
361.  [Arduino based Electronic Queuing System](#) This is a Queuing System project requested by a clinic asistant which allows the doctor enter number from a keyboard and display it on a 32x16 LED panel. This project uses two Arduino, the first Arduino functioned as a SENDER which included a PS2 keyboard..... Listed under: [LED Projects](#)
362.  [Digital Arduino Voltmeter with Temperature](#) Step 1: The case I dug out an appropriate case from the dumpster, milled out a rectangular hole for the lcd, and drilled holes to mount the LCD and the Arduino. I used brass standoffs and fiber washers to prevent shorts. Then I gave the..... Listed under: [Metering – Instrument Projects](#)
363.  [Learning Sequential Logic Design for a Digital Clock](#) This instructable is for two purposes 1) to understand and learn the fundamentals of sequential logic 2) use that knowledge to create a digital clock. Digital clocks have been built by countless electronics hobbyists over the

world. So why have I chosen to implement that?..... Listed under: [Clock – Timer Projects](#)

364.  [Homebrew Arduino Pulse Monitor \(Visualize Your Heartbeat\)](#) Movies look cool with those EKG (electrocardiogram), the one that beeps and detects heart activities. A few months ago, we had to shoot a hospital scene for our school project. We needed an EKG instrument. To keep the movie authentic, we didn't want to fake..... Listed under: [Medical – Health based Projects](#)
365.  [How to Build a \(Piezo\) Knock Sensor Circuit](#) In this article, we go over how to build a piezo knock sensor circuit. A knock sensor is a sensor which produces a voltage in response to some type of physical stress such as a knock or vibration. This is why it's called a knock..... Listed under: [LED Projects](#), [Sensor – Transducer – Detector Projects](#)
366.  [Simulating Logic Gates](#) Introduction This project is a simple way of using the Arduino to simulate the behaviour of logic gates. Logic gates are explained on this page. The project does not actually carry out the function of the logic gate, just turns a light on or off..... Listed under: [LED Projects](#)
367.  [Tri-State Logic](#) Introduction So far we have sent one of two values to any Arduino output pin, either HIGH or LOW. This project shows how we can exploit a third state of the Arduino pins to reduce the number of pins needed to control LEDs. In the..... Listed under: [LED Projects](#)
368.  [Make A Coin slot detector Using Arduino](#) When your coin slot is exposed, this wearable hip-pack vibrates that area to make you aware of it. You decide to cover up, or let it all hang out. The coin slot detector is a simple way to tackle the complicated modern problem low-rise jeans..... Listed under: [Sensor – Transducer – Detector Projects](#)
369.  [Polargraph Drawing Machine](#) This machine, a variation on the hanging-pen plotter is a conspicuous and wilfully naive attempt to break out of the pristine, pixel perfect, colour-corrected space that exists inside our computers. It's a drawing machine, that takes a pen (a human tool) and uses it to..... Listed under: [Robotics – Automation Projects](#)
370.  [Turn your Arduino into a Magnetic Card Reader!](#) Everyone has used a magnetic card reader, I believe. I mean, who carries cash these days? They're not difficult to get your hands on, either, and during a trip to my favorite local electronics shop, I found a bin full of these guys. So....of course,..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
371.  [Arduino Sous-Vide Cooker](#) Sous-vide cooking allows you to precisely control the temperature of cooked food (how "doneness" is measured) by immersing it in a carefully controlled water bath. It's possible, but seriously difficult, to do this just with a thermometer and a pot on the stove... but if..... Listed under: [Temperature Measurement Projects](#)
372.  [Basic Projects using chipKIT Uno32](#) Happy Tuesday, everyone! I tend to get excited about products that enable beginners to be really creative, and today's product highlight is one I think is worth getting excited about! [video width="380" height="285" id="_63Mq6QMxxM&" type="youtube"] A few things that I really like about the shield:..... Listed under: [How To – DIY – Projects](#)
373.  [Arduino Laser Tag – Duino Tag](#) Duino tagger- General introduction Duino tag is a laser tag system based around the arduino. Finally a laser tag system that can be tweaked modded and hacked until you have the perfect laser tag system for office ordnance, woodland wars and suburban skirmishes. Laser tag..... Listed under: [Game – Entertainment Projects](#)
374.  [Wii Nunchuck Adapter](#) This tutorial is for all those people who have an Arduino and want to use there Wii nunchuck as an input device, but don't really feel like cutting open the cord and ruining the nunchuck FOREVER!!!!!!well you've come to the right place! Step 1: Supplies..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
375.  [Flamethrowing Jack-O'-Lantern](#) A flamethrowing jack-o'-lantern keeps the trick-or-treaters a safe distance from your house and is a fine addition to any anti-Halloween arsenal. At the first sign of any sugar-obsessed imp, simply press the trigger button and wirelessly shoot a one-second burst of flames out of the..... Listed under: [Other Projects](#)
376.  [Make a swimming Robo-Snake Using Arduino](#) Sneel is the name of my snake / eel swimming robot. This is documentation of hardware, software and mechanical design of Sneel_003. urethane flex tubing, microcontrollers, Zigbee wireless radio, hose clamps, wires, servo motors, titanium servo brackets, silicon, marine grease, epoxy, pond pump Sneel is..... Listed under: [Robotics – Automation Projects](#)
377.  [The EyeWriter 2.0](#) The EyeWriter is a low-cost eye-tracking apparatus + custom software that allows graffiti writers and artists with paralysis resulting from Amyotrophic Lateral Sclerosis to draw using only their eyes. The original design, as shown here, featured a pair of glasses as the basis for the..... Listed under: [Development Board – Kits Projects](#)
378.  [N: how to make a multi-layered acrylic and LED sculpture with variable lighting levels](#) Here you can find out how to make you very own n as made for the exhibition www.laplandscape.co.uk curated by art/design group Lapland. More images can be seen at flickr This exhibition runs from Wednesday 26 November - Friday 12 December 2008 inclusive, and had a..... Listed under: [LED Projects](#)
379. [Arduino-Controlled Robotic Drum](#) For years I have been telling anyone who listens that I was going to build a robotic drum. Most people kind of shrugged' indifferently. Even as I built it, most people kind of glanced over at it and conveyed doubtfulness. It seemed like no one..... Listed under: [Robotics – Autom](#)



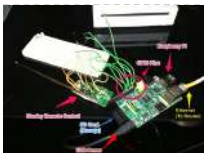
380.  [SITWAY](#) You are never too old to learn and try new things. I think one of the best days in my life was the day I discovered the Instructables web site. It opened up a whole new world to me. This is my third instructable Listed under: [Robotics – Automation Projects](#)



381. [Power Laces- the Auto lacing shoe](#) Also, check out Power Laces: Version 2.0 Why wait until 2015? Inspired by 'Back to The Future II', this project is less 'Practical' than 'Proof of Concept', but hopefully it'll tide you over until Nike comes out with something more polished. This was also the..... Listed under: [Other Projects](#)



382. [Sigh Collector](#) Sigh v. i. [imp. & p. p. {Sighed}; p. pr. & vb. n. {Sighing}.] 1. To inhale a larger quantity of air than usual, and immediately expel it; to make a deep single audible respiration, especially as the result or involuntary expression of fatigue, exhaustion,..... Listed under: [Other Projects](#), [Phone Projects](#)



383. [On The Fly – Prototype II Final Report: Home Automation Framework](#) Introduction: The Home Automation Framework project is a web application that can remotely control the electronic devices in one's home using a web interface on a smartphone, tablet or desktop computer. The project facilitates ease of access and remote control of electronic devices for those..... Listed under: [Home Automation Projects](#)



384. [LED Cube 8x8x8](#) Create your own 8x8x8 LED Cube 3-dimensional display! We believe this Instructable is the most comprehensive step-by-step guide to build an 8x8x8 LED Cube ever published on the intertubes. It will teach you everything from theory of operation, how to build the cube, to the..... Listed under: [LED Projects](#)



385. [Cloud Sensor Base-Station](#) What I want to do I want to create a platform with the capacity to control a large number of sensors and actuators necessary for the hydronponics system outlined in this wiki, and to serve as the central gateway to a cloud-enabled dashboard. The basis..... Listed under: [Sensor – Transducer – Detector Projects](#)



386. [Drawing on a 7x5 LED matrix with Arduino in C](#) In my component drawers I have a LTP-7357AG, which is a matrix of 35 green LEDs conveniently packaged in a 12-pin display. I wanted to play with it so I began to hook it with my Arduino Uno. This post is part of a series about programming Arduino..... Listed under: [LED Projects](#)



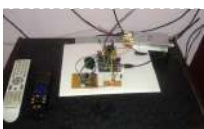
387. [DIY wattmeter with an Arduino](#) DIY wattmeter with an Arduino It is difficult or sometimes even impossible to measure power and energy with ordinary multimeters. To carry out such a measurement reliable and accurate, a special wattmeter is required. Because these meters are very expensive, a cheaper solution is presented..... Listed under: [How To – DIY – Projects](#), [Metering – Instrument Projects](#)



388. [The Viciously Simple Clap-ON Clap-OFF Circuit For Arduino](#) Hi Everyone! I've had a few people ask about creating a simple clap-on/clap-off circuit using Arduino. Well those who are interested are now in luck. The software in this instructable is simple and well commented. The schematic is simple, and the components are easy and..... Listed under: [LED Projects](#)



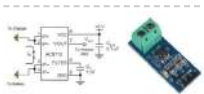
389. [Arduino car LCD display](#) Here is a project I made a couple of years ago for my father's car. The original dashboard's info-panel which displayed current time, date and temperature was working only partly – and that only after a good cleaning and connector fastening. In other words –..... Listed under: [Car Projects](#), [LCD Projects](#)



390. [Automatic Home surveillance system using arduino\(simple and cheap\)](#) The goal of my project is to achieve Automatic home surveillance system without any manual interference. In general other surveillance system it is necessary to power ON TV and camera receiver every time. And also it needs to any user input to view who is..... Listed under: [Home Automation Projects](#)



391. [GESTURE VOCALIZER FOR DUMB PEOPLE INTERACTIn ION](#) To establish a communication or interaction with Deaf and Mute people is of utter importance nowadays. These people interact through hand gestures or signs. Gestures are basically the physical action form performed by a person to convey some meaningful information. Gestures are a powerful means..... Listed under: [Other Projects](#)



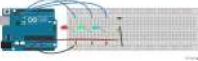
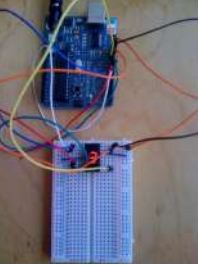
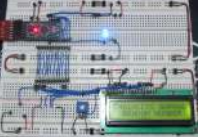
392. [Solar Panel Battery Charge Controller Using Arduino](#) This is an updated version of Solar Panel Charge Controller Using Arduino. Solar Panel Battery Charge Controller Using Arduino Pictures of Power box and Arduino solar charge regulator: Charge Regulator with Power Box Connections to Regulator Inside the Box The output voltage of the ACS712..... Listed under: [Solar energy projects](#)

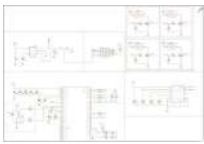
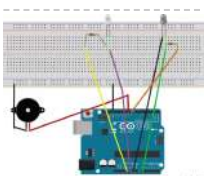
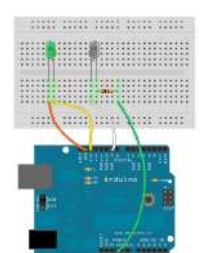
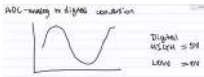
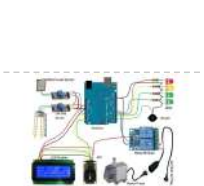
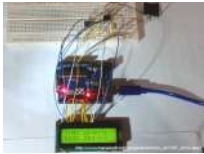
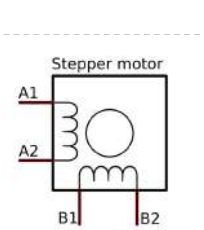


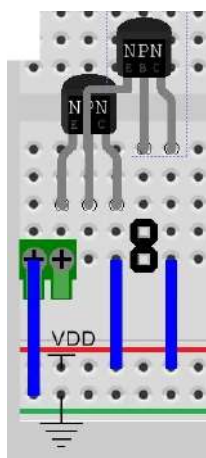
393. [Make A LED firefly Jars Using Arduino](#) There's a nice charm to fireflies in a jar—except for, you know, all the dead bugs afterwards. I decided to make a bunch of fake fireflies in real jars for decoration at an outdoor event. The fireflies are yellow LEDs controlled by a small ATtiny45..... Listed under: [LED Projects](#)

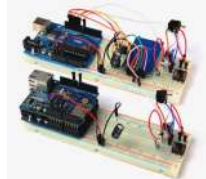
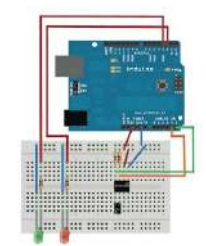
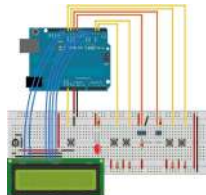


394. [Accelerometer Controlled Robot](#) Most of industrial robots are still programmed using the typical teaching process, through the use of the robot teach pendant. In this paper is proposed an accelerometer-based system to control an industrial robot using two low-cost and six-axis wireless accelerometers. These accelerometers are attached..... Listed under: [Robotics – Automation Projects](#)

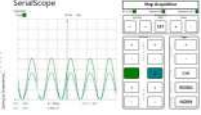
395.  [Construct A Bluetooth Controlled Robot Using Arduino](#) In this proposed system we going to construct a basic DC motored robot which we are going to control with android app easily available on google play store named bluecontrol. With Basic mobility of robot like forward, Reverse, left, right we try to implement four..... Listed under: [Bluetooth Projects](#), [Robotics – Automation Projects](#)
396.  [Arduino Project: Intervalometer for Fuji cameras](#) This post is about an arduino-based intervalometer I built for my camera, a Fuji S9600 dSLR. I decided to go for a very simple interface: a rotary switch in the middle of a plastic box which would allow me to select 12 pre-defined intervals. I..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Video – Camera – Imaging Projects](#)
397.  [Automatic Garden Watering Device – Arduino](#) As part of the Content Creation course for my MLIS degree (Our class blog: <http://scumakers.wordpress.com/>), I needed to come up with a final project and wanted to learn to use an Arduino. In the end I came up with this device to automatically sense..... Listed under: [Home Automation Projects](#)
398.  [Build An Hygrometer Using Arduino](#) I am building an automated irrigation system for my vegetable patch. This will be a system that monitors the soil moisture level and then turns on a pump to send water to my garden according to the detected moisture level. The water is coming from..... Listed under: [LED Projects](#)
399.  [Make a Web Connected Robot \(for about \\$500\) \(using an Arduino and Netbook\)](#) This Instructable will show you how to build your own Web Connected Robot (using an Arduino micro-controller and Asus eee pc). Why would you want a Web Connected Robot? To play with of course. Drive your robot from across the room or across the country,..... Listed under: [Robotics – Automation Projects](#)
400.  [How To Throw An Arduino Motor Party](#) In this instructable I will show you how to throw an Arduino motor party. I will also be giving away an Arduino Mega, Arduino Uno, and an Arduino Pro Mini. (Details at the end) Step 1: Assembly + Code You'll need a handful of motors..... Listed under: [Motor Projects](#)
401.  [Send SMS from Arduino over the Internet using ENC28J60 and Thingspeak](#) This Instructable explains how to send an SMS from an Arduino using the Internet. There are many ways to approach this and I will explain one of the different methods used to accomplish this task. Some major points needed for my project: I have a..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
402.  [Washer Dryer Laundry Alarm using Arudino & SMS Text Messaging Alerts](#) Have you ever wished there was a better way to be notified when your laundry was done? Have you ever forgotten a load in the washer because you couldn't hear the buzzer and your clothes became smelly and moldy from sitting there for too long?..... Listed under: [Home Automation Projects](#), [Wireless Projects](#)
403.  [Converting infrared to RF signals with Arduino](#) In this project we will show you how to switch on and off the power sockets box with an IR remote. Not only the power sockets box, but other RF receivers can be switched on and off with the same IR remote as well. We..... Listed under: [Wireless Projects](#)
404.  [How to Make a Wireless Path Tracking System Using Mouse, XBee and Arduino](#) The applications of microcontroller are not limited to control simple electrical or electronic device but they are widely used in robotics and automotive industries nowadays. From simple rear view mirror control to complex engine control functions are done by the microcontroller. The microcontroller can even..... Listed under: [Wireless Projects](#)
405.  [How to Transmit Mouse Data Using Xbee with Arduino](#) The PS2 mouse is an input device which can communicate with a host device using the PS2 protocol. It can be connected to a host device using the 6 pin mini DIN connector. The mouse will continuously give output which can be decoded to get..... Listed under: [Development Board – Kits Projects](#)
406.  [How To Save a Text In The EEPROM of The Arduino](#) A microcontroller might need to store its data like sensor value, or a particular count or image data for a long period of time. The most common type of memory used with the microcontroller based systems is EEPROM. The EEPROM stands for Electrically Erasable Programmable..... Listed under: [LED Projects](#)
407.  [Drawing an Arduino Circuit Diagram](#) I've had an Arduino Duemilanove now for a couple of weeks. If you're not familiar with the Arduino, it is "an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software". It has a small microcontroller, a USB port to connect to your computer..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
408.  [Generate Random Number using Arduino](#) A random number generation is very important in computing devices which helps them to do task in random manner. The applications of random number generation can be found in shuffling the audio files in an audio player, in almost all kind of digital games, generating..... Listed under: [Development Board – Kits Projects](#)
409.  [Augment a Moog Etherwave Theremin](#) I'm going to go through my process of hacking a Moog Etherwave Theremin. I created a new acrylic top, partially sanded to be translucent in certain areas, and created my own circuit around an ATmega168 Arduino Bootloaded microcontroller which is stealing a control voltage from..... Listed under: [LED Projects](#)
410.  [Project Suite Bros: Voice Activated LED Friendship Photoset \(Arduino, Bluetooth, Crafts\)](#) (and partner-in-crime, Abbie). Now, I'm off to the next stage of my life, so I decided to build this friendship photoset for Kevin and Briton to remember our golden era. We called ourselves: "The Suite Bros". This project is actually an extension of the "Voice..... Listed under: [LED Projects](#)
411.  [Arduino Garage Controller](#) Although there are many garage door projects on Instructable using Arduinos, I needed/wanted something different. Last year, we had a warm summer and when I would come home after work, I would leave the garage door open about 1 foot so it could cool off..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

412.  [Arduino based Drone Quadricopter](#) [gallery ids="19920,19921,19922,19923,19924,19925,19926,19927"] arduino based Drone Quadricopter It's a tiny quadrotor helicopter! Update Feb 25 2012: Warning, I may have discovered a bug inside the CadSoft EAGLE 6.1.0 software that may make the PCB look slightly different. My design files are meant for 5.11 so use..... Listed under: [Drone](#)
413.  [Project: Cleaner robot using Magician Chassis, Arduino, distance sensor and hand sweeper](#) This is a cleaner robot so you can give to your mommy or just use to clean your bedroom =P. Material List: 1x Arduino UNO R3 1x Magician Chassis 1x Shield Motor Driver (Shield 4Power) 1x Distance Sensor 1x Servomotor 1x Hand Sweeper 1x Battery 1..... Listed under: [Robotics – Automation Projects](#)
414.  [Arduino-Based Shadow Alarm](#) Arduino-Based Shadow alarms are usually used for protection against theft. A shadow alarm is a device that sounds an alarm when a shadow falls on it. Described here is a simple circuit of an Arduino based shadow alarm. This compact shadow alarm unit is capable..... Listed under: [Security – Safety Projects](#)
415.  [Arduino Bicycle Alarm and Lights](#) This alarm is a good way to alert you if somebody messes with your bike. I had a bicycle stolen a while back and decided there had to be a better way to keep my bike secure. When I searched for bicycle alarms, all I..... Listed under: [Security – Safety Projects](#)
416.  [How to Use IR Remotes with Arduino \(Current and Updated\)](#) I'm tired of these complicated tutorials on how to use certain things. I like simple, easy to understand, step by step instructions. My biggest problem was with IR and POV*. I've finally mastered how to control my project with any TV remote in a few..... Listed under: [Wireless Projects](#)
417.  [ARDUINO Burglar Alarm Using Infrared Emitter-Detector pair](#) In this tutorial i will show you , how to make a simple Inexpensive Intrusion Detection(Burglar alarm) using an Arduino Uno board . This project uses the Infrared Emitter-Detector pair to detect intrusion and triggers an alarm as soon as the object crosses the infrared..... Listed under: [Wireless Projects](#)
418.  [Arduino for Photographers: Building a Universal Intervalometer](#) Practicing the art of time-lapse photography without an intervalometer is doable, but not particularly efficient. And while any decent photo equipment store will be happy to sell you one, you can go the DIY way and build your own intervalometer based on the excellent Arduino platform. Theoretically, building..... Listed under: [LED Projects](#)
419.  [Connecting the ADXL337 to the Arduino](#) Today I'll write about the ADXL337 accelerometer. The ADXL337 measures the acceleration of the x, y and z axis. This means it measures the force acting on any of the axes at a specific moment in time. Because it's an analog device the measurement intervals are as short..... Listed under: [Other Projects](#)
420.  [Arduino Accelerometer mma7361](#) Hey guys, I am a teaching assistant for an introduction to engineering class for biomedical engineering majors at Vanderbilt University this semester. I created this video to explain analog-to-digital conversion to them because time ran out during class and I did not get to this..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sensor – Transducer – Detector Projects](#)
421.  [Arduino Automatic Watering System](#) INTRODUCTION & OBJECTIVES: I is a simple system, using Arduino to automate the irrigation and watering of small potted plants or crops. This system does the control of soil moisture, doing indications via LEDs and in case of dry soil emitting a alarm beep. In..... Listed under: [Home Automation Projects](#), [Projects](#)
422.  [Arduino Compatible apc220 Wireless rf Module with Graphics LCD](#) 16 node mesh, up to 1000m between nodes, sample two analog voltages per node, link any node to any other node, display data on any node with either graphics or text display, turn on relays based on data at any node, fault tolerant with data..... Listed under: [RFID - NFC projects](#), [Wireless Projects](#)
423.  [Arduino DS1307 Clock](#) 1) Introduction and Images Hello friends, today I am going to build a Digital Clock using Arduino UNO and famous DS1307 Real Time Clock IC. Before we begin, here are some images of the completed project. You can find the YouTube video at the bottom..... Listed under: [Clock – Timer Projects](#), [LCD Projects](#)
424.  [MCP41100 an Arduino Controlled Potentiometer](#) We know the analog potentiometer , is a three-terminal resistor with a sliding contact that forms an adjustable voltage divider . MCP41100 an Arduino Controlled Potentiometer: 1)volume controls on audio equipment. 2) Control the amplifier Gain and offset . 3) Transducer " displacement transducers "..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sensor – Transducer – Detector Projects](#)
425.  [Arduino Bipolar Stepper Motor](#) It is a well known fact that Stepper motors are awesome! The only downside is that they can be a bit trickier to get going than servos and plain old DC motors. If you are interested in the inner mechanics and theory of stepper motors, check this..... Listed under: [Motor Projects](#)
426.  [How To Generate Square Wave Using Arduino](#) Any AVR microcontroller based board which follows the standard Arduino schematic and is flashed with the Arduino bootloader can be called an Arduino board. The Arduino is referred to as open source hardware and the Arduino IDE is also open source and anybody can contribute..... Listed under: [Development Board – Kits Projects](#)
427. [Arduino and Transistors Question – RE: School Musical Production](#) One of the directors has asked me to create a special backdrop for our college musical. This particular backdrop has a particular design (see below) that includes LED strip lighting to give the feel of a 1920s casino sign – similar to what is seen..... Listed under: [LED Projects](#)



428.  [Interfacing PIR motion sensor with Arduino](#) [Build Arduino Based Home Security System Using PIR Motion Sensor](#) PIR sensors are widely applied in wireless residential security systems, home alarms systems and many more security circuits as motion detector sensors. A typical PIR sensor detects the infrared red (IR) waves from human body and so it is also known as 'human sensor'. It..... Listed under: [Home Automation Projects](#), [Security – Safety Projects](#)
429.  [Temperature Sensing with Arduino](#) As part of the CanSat Primary Mission, we need to measure temperature. For this our starter kit has given us an Arduino Uno R3 micro-controller, as well as some resistors and an NTCLE101E3 NTC Thermistor. The thermistor is a special kind of resistor that changes..... Listed under: [Sensor – Transducer – Detector Projects](#), [Temperature Measurement Projects](#)
430.  [Arduino Basics #5 – Add SD storage to Arduino](#) Arduino Uno's microcontroller board is great, but the one thing it's not overly generous with is storage. Having 32KB of program flash storage, 2KB of RAM and 1KB of programmable EEPROM space at your disposal is fine for many Arduino projects, but it's not enough..... Listed under: [Arduino Programmer Projects](#)
431.  [GSM Based Wireless Notice Board](#) ABSTRACT: There are several places which require vital notice to be displayed like colleges, railway stations, share-market, restaurants, hospitals etc. Looking into the present trend of information transfer, it is seen that vital notice take time to be displayed on the displaying boards. This latency..... Listed under: [Wireless Projects](#)
432.  [How to Make Phonecall From GSM Module Using Arduino](#) One can use a cell phone with any cellular networks around the globe if the proper SIM card is inserted in it. This is possible because there is some device inside the cell phone which follows a global standard enabling them to connect with different..... Listed under: [Phone Projects](#)
433.  [Sinewave Inverter Circuit Using Arduino](#) The post explains how to build a simple sinewave inverter circuit using PWM feed from an Arduino Uno board, the article also discusses a sinewave 3 phase inverter using the same input from an Arduino. The idea was requested by Mr. Raju Visshwanath Technical Specifications..... Listed under: [PWM Projects](#)
434.  [Arduino Digital Voltmeter 0V to 30V](#) Here is a useful circuit for Arduino lovers and experimenters. It is a simple digital voltmeter, which can safely measure input dc voltages in 0 to 30V range. The Arduino board can be powered from a standard 9V battery pack, as usual. As you may..... Listed under: [Metering – Instrument Projects](#)
435.  [Pololu Dual VNH5019 Motor Driver Shield for Arduino \(ash02a\)](#) Get your Arduino moving! This shield makes it easy to control two high-power DC motors with your Arduino or Arduino-compatible board. Its dual robust VNH5019 motor drivers operate from 5.5 to 24 V and can deliver a continuous 12 A (30 A peak) per motor, or a continuous..... Listed under: [Motor Projects](#)
436.  [Arduino Programming For Beginners: The Traffic Light Controller](#) Last week, we learnt about the basic structure of an Arduino program and took a closer look at the 'blink' example. Hopefully you took the opportunity to experiment with code, adjusting the timings. This time, we'll be writing something from scratch. In fact, let's make..... Listed under: [LED Projects](#)
437.  [Arduino Project 5: Digital audio player](#) So far in this series we've had a diverse look at how Arduino can interact with a range of real-world devices from servo motors to ultrasonic range finders TVs to humidity sensors. Now we'll see if we could get the Arduino to make a few..... Listed under: [Sound – Audio Projects](#)
438.  [Arduino Project 4: Enhancing your mini robot](#) You'll need these: HC-SR04 – Get this ultrasonic sensor from eBay.com.au for \$2. SG90 Servo Motor – We've seen this servo selling for around \$4 on ebay. Motor drive shield – You can get this expansion board for \$5 online. If you're new to APC..... Listed under: [Robotics – Automation Projects](#)
439.  [Capacitive Touch Sensor on Arduino](#) If you ever wanted to integrate touch sensitivity into your project, this board could just do the trick. It's a capacitive touch sensor. These sensors are used in our everyday consumer electronics like notebook trackpads, video game consoles, touchscreens...just to name a few. They work..... Listed under: [Sensor – Transducer – Detector Projects](#)
440.  [PID Thermostat For The Arduino](#) PID Thermostat This is a PID thermostat for the arduino. It supports independent tuning parameters for multiple hardware 'profiles', and includes an autotune mode to estimate the PID parameters for a given setpoint. Installation Hardware DS18-series (I'm using the DS18B20) temperature sensor Solid-state relay rated..... Listed under: [Sensor – Transducer – Detector Projects](#)

441.



[Wireless Arduino Oscilloscope](#) In this guide I will explain how to use a Windows 8.1 phone, Arduino Uno board, and HC-05 Bluetooth module to build a wireless oscilloscope. The phone application has the critical functions of an oscilloscope, although the bandwidth is a measly 300 Hz. Still, if..... Listed under: [Wireless Projects](#)
442.



[Simple Arduino Wireless Mesh](#) Build a low cost simple wireless mesh using arduinos and long range APC220 radio modules. Wireless mesh networks can handle individual nodes not working and are tolerant to environments such as forests and hills where data may not be able to go directly from one..... Listed under: [Wireless Projects](#)
443.



[Arduino 3.3V](#) This Lazy Old Geek (L.O.G.) loves Arduinos. I have noticed that a lot of sensors, like GPS, LCDs, magnetometers are 3.3Vdc sensors. But the standard Arduinos, Uno, RBBB are 5Vdc modules. So I decided I'm going to make more of my Arduino projects with 3.3Vdc..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
444.



[Arduino Fridge Magnet](#) Do you have a habit of leaving notes on the fridge, now take it digital and add an Arduino to it. In this instructable I'm going to show you how to do just that. All you need is an Arduino, an LCD screen and a..... Listed under: [LCD Projects](#)
445.



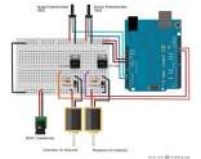
[Ultrasonic Range detector using Arduino and the SR04 Ultrasonic sensor](#) his is a preliminary instructable that will take you through the steps I took to get the SR04 ULTRASONIC SENSOR connected and working to the Arduino. It will then be incorporated to my mini environment monitor. Eventually, if it all fits, it will end up..... Listed under: [Sensor – Transducer – Detector Projects](#)
446.



[Kid-friendly PuppyDuino 0.31](#) OK, this is not a fully autonomous "get you a beer, open it for you and then tweet about it" robodog (yet 😊 but if you're itching to get past the blinky lights on a breadboard stage with your Arduino and you're ten or know..... Listed under: [LED Projects](#)
447.



[The Arduino Mothbot](#) The purpose of this project is to design and build a simple light-following robot using an Arduino Duemilanove microcontroller board. I really wanted to share a robot project that was cheap, simple to build, and had a complete set of instructions for all of the..... Listed under: [Robotics – Automation Projects](#)
448.



[David Bynoe works in progress](#) For an upcoming project I needed a pneumatic ram with a closed loop control system so I could position it accurately. Didn't have the budget for an off the shelf solution, so I bodged one together with an arduino, a couple air solenoid valves, and..... Listed under: [Other Projects](#)
449.



[How to Build an H-bridge Circuit with an Arduino Microcontroller](#) An h-bridge is a chip that allows DC motors to be run versatile, with bidirectional capability. With an H-bridge, motors can go forward or backward, left or right, up or down, etc, depending on the use of the motor(s) in the circuit. Without a microcontroller,..... Listed under: [Motor Projects](#)
450.



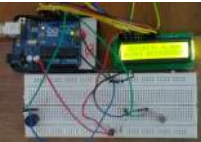
[Arduino passive IR trigger for Canon EOS](#) The other day I wanted to experiment with external triggers for my Canon EOS 550D camera. I stumbled upon a nice open source project called Arduino Camera Control from Oleg Mazurov, the creator of the USB Host Shield library for Arduino. The Arduino Camera Control..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
451.



[ARDUINO RF power & SWR meter](#) This sketch will readout RF power and SWR from any SWR bridge (for example 'monimatch' type). As this 'monimatch' type of bridge is frequency dependant, the meter must be calibrated for every band. Because my primary interest was for VHF/UHF/SHF, I have foreseen positions for..... Listed under: [Metering – Instrument Projects](#)
452.



[Internet connection indicator box with restart button](#) THE SETUP For an interface I thought 3 LEDs would be simple enough: Blue for everything is fine (as blue LEDs are cooler than green ones); red for something is wrong; and yellow for the modem and router are being restarted. I added a button..... Listed under: [Internet – Ethernet – LAN Projects](#)
453.



[Arduino Security Alarm with Reed Switch](#) How does the security alarm circuit works? When power is turned on, the circuit goes into standby mode, and this condition is indicated by "SECURITY ALARM" in the LCD screen.Note that here a N/O reedswitch + bar magnet combination is used to detect any mishaps,..... Listed under: [Security – Safety Projects](#)
454.



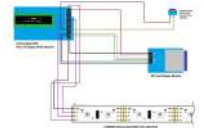
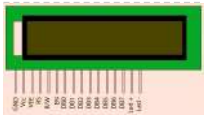
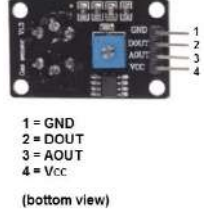
[Line Follower Robot using Arduino](#) A line follower robot using 8051 microcontroller is already published here and this time the same thing is done using arduino. This line follower robot is basically designed to follow a black line on a white surface. Any way the same project can be used..... Listed under: [Robotics – Automation Projects](#)
455.

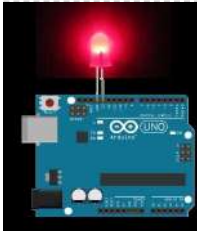


[HOW TO MAKE CUSTOM GEAR FOR LINEAR MOTION](#) In the manufacturing industry, a wide variety of devices used at home or in the garden has been experiencing challenges in automating linear displacement of any of the items used. For instance, For example, an automatic opening of gates, automatic unlocking and changing positions of..... Listed under: [Metering – Instrument Projects](#)
456.



[Arduino Platform – SIMON Game Implementation](#) Introduction Having been a CodeProject member for several years, and not having got round to ever publishing an article, left me feeling a bit disappointed in myself. I have thought many a time on what kind of article I can produce. Then after coming across..... Listed under: [Game – Entertainment Projects](#)

457.  [Arduino Based Security System using GSM & PIR Sensor](#) In present time Home/Office and many other place security is most important. In our absence these places are not secure. For make these palaces secure many peoples keep guards and many people prefer electronic security systems. In present time many types of security systems are..... Listed under: [Security – Safety Projects](#)
458.  [Interface single and Dual IR Infrared sensor with Arduino and LCD](#) Interface single and Dual IR Infrared sensor with Arduino and LCD
Introduction- Multiple Sensor Interface to Arduino In this another tutorial on sensors for beginners, we are going to interface single and multiple Infrared IR sensors with Arduino Uno development board, working simultaneously and have the..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sensor – Transducer – Detector Projects](#)
459.  [Getting Started with Arduino – LED Blinking](#) Arduino Uno is the best development board for beginners in the field of embedded systems. We can program Arduino board with less technical knowledge and programming skills. This tutorial is intended to beginners in the field of Arduino. Hope you already have an Arduino board. Then..... Listed under: [LED Projects](#)
460.  [26-Way MIDI DRUMS](#) his design is a 26-way MIDI/USB drum pad system with the velocity byte fixed for 10 input drum switches and a 16-way velocity sensitive circuit, providing a full (0-127) velocity range using piezo sensors. The drums are pre-selected to the MIDI outputs 35-50 for the..... Listed under: [Other Projects](#)
461.  [LPD8806 SD/LCD Digital Light Wand! \(Last Update – 20 September 2014\)](#) I have gathered the information from the HL1606 Digital Light Wand Blog and brought it all over to this new page so that there would be a page dedicated to the LPD8806 Digital Light Wand created by ISO-MICK. Mick took my original design and turned..... Listed under: [LCD Projects](#)
462.  [Interfacing LCD with Arduino Uno](#) 16×2 character LCD display is a very basic LCD module which is commonly used in electronic projects. 16×2 means it can display 2 rows of 16 characters (columns). Its other variants such as 16×1, 16×4 etc are also available. These LCDs are usually made using..... Listed under: [LCD Projects](#)
463.  [Analog to Digital Conversion in ARDUINO](#) Analog to digital conversion module of ARDUINO UNO has 6 input ports. The number of the port varies with your ARDUINO model but the coding remains the same. The analog reading in the analog inputs are converted into corresponding 10bit(0-1023). ARDUINO developers have made such an option that you..... Listed under: [Other Projects](#)
464.  [How to Convert an Arduino into an AVR Flash Programmer](#) In case you don't have an AVR programmer but you do have an arduino, the arduino can be converted into an AVR flash programmer, meaning it can program bare AVR microcontroller chips. Say if you have an AVR chip and you want to program the..... Listed under: [Arduino Programmer Projects](#), [How To – DIY – Projects](#)
465.  [How to Build an Infrared Distance Sensor Circuit](#) An infrared (IR) distance sensor is a sensor that can measure distance from a solid or physical object. An infrared distance sensor does this through light waves. It sends out infrared light and waits to receive it back at the receiver end. If it receives..... Listed under: [How To – DIY – Projects](#)
466.  [How to Build an HC-SR04 Distance Sensor Circuit](#) An ultrasonic distance sensor is a sensor that can measure distance from a solid or physical object. An ultrasonic range finder does this through sound waves. It sends out high-frequency sound waves and then waits to listen back for these sound waves. If it has..... Listed under: [Sensor – Transducer – Detector Projects](#)
467.  [How to Build a Servo Motor Circuit \(with Arduino\)](#) In this project, we will go over how to build a servo motor circuit using an arduino. This is a circuit which can control and rotate a servo motor to rotate a certain amount of degrees. Specifically, in our circuit, we will make it so..... Listed under: [Motor Projects](#)
468.  [How to Build an Ohmmeter Using an Arduino](#) In this project, we will show how you can build an ohmmeter using an arduino. An ohmmeter is a device that can measure resistance. Most of the times now, ohmmeters aren't standalone devices but appear as one of type of measuring device amongst many in..... Listed under: [Metering – Instrument Projects](#)
469.  [MQ-7 Carbon Monoxide Sensor Circuit Built with an Arduino](#) In this project, we will go over how to build a carbon monoxide sensor circuit with an Arduino. The carbon monoxide sensor we will use is the MQ-7 sensor. This is a sensor that is sensitive to effects of CO. Carbon monoxide (CO) is a..... Listed under: [Sensor – Transducer – Detector Projects](#)
470.  [MQ-3 Alcohol Sensor Circuit Built with an Arduino](#) In this project, we will go over how to build an alcohol sensor with an arduino. The alcohol sensor we will use is the MQ-3 sensor. This is a sensor that is not only sensitive to alcohol, particularly ethanol, which is the type of alcohol..... Listed under: [Sensor – Transducer – Detector Projects](#)
471.  [MQ-2 Smoke Sensor Circuit Built with an Arduino](#) In this project, we will go over how to build a smoke sensor circuit with an arduino board. The smoke sensor we will use is the MQ-2. This is a sensor that is not only sensitive to smoke, but also to flammable gas. The MQ-2..... Listed under: [Sensor – Transducer – Detector Projects](#)

472.  [How to Build a Liquid Level Gauge Circuit with an Arduino](#) In this project, we will build a liquid level gauge circuit with an arduino. This is a circuit in which a liquid level can be monitored through a gauge. We read the liquid level from the gauge (low, medium, or high), just as you see..... Listed under: [How To – DIY – Projects](#), [Metering – Instrument Projects](#)
473.  [Arduino Light Meter Circuit](#) In this project, we will go over how to connect an analog volt panel meter to an Arduino so that it can measure and give us a readout of light striking the circuit. In this way, the circuit will function as a light meter. When..... Listed under: [Metering – Instrument Projects](#)
474.  [How to Build a Soil Moisture Sensor Circuit with an Arduino](#) In this project, we are going to build a soil moisture sensor with an Arduino microcontroller. A soil moisture sensor, also called a hygrometer, measures the amount of moisture, or water, in the soil. Therefore, we can tell whether the soil has enough moisture or..... Listed under: [How To – DIY – Projects](#), [Sensor – Transducer – Detector Projects](#)
475.  [How to Build a Night Light Circuit Using an Arduino](#) In this project, we will go over how to build a night light circuit using an arduino. A night light circuit is a circuit which will turn on when nighttime comes, which is when it gets dark and the place could use some illumination. It..... Listed under: [How To – DIY – Projects](#), [LED Projects](#)
476.  [How to Build a Heat Detector Circuit Using an Arduino](#) In this project, we will go over how to build a heat detector circuit using an Arduino. A heat detector circuit is a circuit, of course, which can detect the presence or absence of heat. This could be useful for a wide range of circuits..... Listed under: [Sensor – Transducer – Detector Projects](#)
477.  [How to Build a Color Sensor Circuit](#) In this project, we are going to build a color sensor circuit with an Arduino microcontroller. A color sensor is a device that can detect and differentiate between certain primary colors. This sensor can detect and differentiate between the colors white, blue, green, and red..... Listed under: [How To – DIY – Projects](#), [Sensor – Transducer – Detector Projects](#)
478.  [Visual / Aural Guitar Tuner "The Tune Trainer" using arduino](#) Build a strobe tuner with an integrated tone generator to teach tuning by ear. - =Background=- I have always dabbled in instruments. Over the course of my life, I've attempted (with varying success) Piano, Guitar, Banjo, Penny Whistle, Ocarina, Panpipes, Great Highland Bagpipes, Smallpipes, and Didgeridoo..... Listed under: [Sound – Audio Projects](#)
479.  [How to Build a Light Detector Circuit Using an Arduino](#) In this project, we will go over how to build a light detector circuit using an arduino. A light detector circuit is a circuit which can detect the presence or absence of light, depending on how we write our code to respond to the varying..... Listed under: [How To – DIY – Projects](#)
480.  [How to Build an Infrared Proximity Switch Circuit Using an Arduino](#) In this project, we will build an infrared proximity switch circuit using an arduino. This is a circuit in which a switch activates when the infrared sensor detects an object in its proximity. The infrared proximity switch sensor is a reflection-type photoelectric sensor which sends..... Listed under: [How To – DIY – Projects](#)
481.  [How To Build Your Own Ultrasonic Batgoggles using an Arduino](#) Wish you were bat? Want to Experience Echolocation? Want to try to "see" with your ears? For my first Instructable, I will show you how to build your own ultrasonic Batgoggles using an Arduino microcontroller clone, Devantech ultrasonic sensor and welding goggles for around \$60..... Listed under: [Game – Entertainment Projects](#)
482.  [How to Build a Simple Force Sensing Resistor \(FSR\) Circuit](#) In this article, we will go over how to connect a force sensing resistor, or force sensitive resistor, (FSR) to a circuit to build many different types of useful circuits with them. Force sensing resistors are variable resistors which change resistance according to the pressure..... Listed under: [How To – DIY – Projects](#)
483.  [How to Install the Arduino to the Lithium Backpack using arduino](#) The Arduino is an open source hardware input and output circuit and the Lithium Backpack is a Arduino accessory that will power the Arduino when it is away from a computer or a wall power. These products are sold at Liquidware for under \$34 each..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
484.  [How to Connect a Microphone to an Arduino](#) In this project, we will go over how to connect a microphone to an arduino so that the arduino can detect whether there is sound in the environment or not. This circuit is only capable of detecting whether there is sound in the environment or..... Listed under: [How To – DIY – Projects](#)
485.  [Spectrographic Auroral Indicator – A Northern Lights Warning Device using arduino](#) 3/16/2011 EDIT: The Wing Kp Predicted Geomagnetic Activity Index model is now deployed and operational. Costello is now considered non-operational and will be discontinued on 23 Mar 2011. Comments and questions are welcomed at SWPC.CustomerSupport@noaa.gov The Wing Kp Predicted Geomagnetic Activity Index model is known..... Listed under: [Security – Safety Projects](#)
486.  [How to Integrate a Temperature Sensor Circuit to an LCD](#) In this project, we will go over how we can build a temperature sensor circuit and integrate it to an LCD so that we can get a readout of the temperature on the LCD. In previous projects with temperature sensor circuits, we built the circuit..... Listed under: [LCD Projects](#), [Sensor – Transducer – Detector Projects](#)
487. [How to Build a LM335 Temperature Sensor Circuit](#) In this project, we will demonstrate how to build temperature sensor circuit using a LM335 sensor. As a temperature sensor, the circuit will read the temperature of the surrounding environment and relay this temperature to us back in degrees Kelvin. The difference between an LM335..... Listed under: [Sensor – Transducer – Detector Projects](#)



488. [How to Build a TMP36 Temperature Sensor Circuit](#) In this project, we will demonstrate how to build temperature sensor circuit using a TMP36 sensor. As a temperature sensor, the circuit will read the temperature of the surrounding environment and relay the temperature to us back in degrees fahrenheit. The IC we will use..... Listed under: [Sensor – Transducer – Detector Projects](#)



489. [Hard Drive Persistence of Vision \(HDPOV\) using arduino](#) The platter of a hard drive spins well over sixty times a second. If a narrow slot was cut into the platter to allow LEDs to shine through, we can achieve flicker fusion and trick the eye into seeing a stable image. This phenomenon is..... Listed under: [Memory – Storage Projects](#)



490. [How to Drive a 7 Segment LED Display with an Arduino](#) In this project, we will show how to drive a single 7 segment LED display with an arduino microcontroller. A 7 Segment LED Display is an electronic device housing 8 individual LEDs. Using this device, we can display all numerals and many alphabetical characters and many more..... Listed under: [LED Projects](#)



491. [Low Cost Water Flow Sensor and Ambient Display using arduino](#) Water is a precious resource. Millions of people do not have access to clean drinking water, and as many as 4000 children die from water contaminated illnesses every day. Yet, we continue to be wasteful with our resources. The overarching goal of this project is..... Listed under: [Home Automation Projects](#)



492. [How to Build an RGB Full Color LED Module Circuit](#) In this project, we are going to build an RGB Full Color LED module circuit. A full color LED module is a circuit in which an LED can be lit to any color. This is why it is called a full color LED module. By..... Listed under: [LED Projects](#)



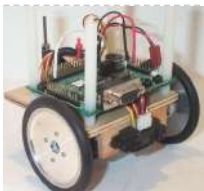
493. [Control Your Robot Using a Wii Nunchuck \(and an Arduino\) using arduino](#) After wearing myself out playing Wii Boxing I got to thinking wouldn't it be great if I could use this to control my robot, (looking to my left hand). Looking around the internet I found a bevy of people doing similar things, (links to everyone..... Listed under: [Robotics – Automation Projects](#)



494. [How to Connect and Read a Keypad with an Arduino](#) In this project, we will go over how to integrate a keyboard with an arduino board so that the arduino can read the keys being pressed by a user. Keypads are used in all types of devices, including cell phones, fax machines, microwaves, ovens, door..... Listed under: [Development Board – Kits Projects](#)



495. [Super Simple Beginners Robot! using arduino](#) I created this Instructable for the absolute n00by robot wannabe. I have noticed a huge jump in the number of beginners getting into the hobby and the number of "how do I" questions seem to be mounting. Maybe this humble little Instructable will help one..... Listed under: [Robotics – Automation Projects](#)



496. [How to Interface GPS with Arduino](#) Every single location in the entire globe can be specified in terms of geographical coordinates. The geographical coordinate is a system which specifies any given location on the earth surface as latitude and longitude. There are devices which can read the geographical coordinates of a..... Listed under: [GPS Based Projects](#)



497. [Make A Touch-less Switch Using Arduino](#) Arduino Project – Touch Me Not I modified the Arduino project from the Arduino Starter Kit (Touch Sensor Lamp). Now it lights up an LED when your hand is close on the aluminium foil (without even touching it). This can be used as a 'Touch-less..... Listed under: [Sensor – Transducer – Detector Projects](#)



498. [Create an Applescript/Arduino Alert flag. using arduino](#) Have you ever felt like the mail sound on your Mac just wasn't enough? Simple sounds and alerts just don't cut it for you? You want something more apparent and rewarding? If so, this is the Instructable you've been looking for. In this Instructable, I'll..... Listed under: [How To – DIY – Projects](#)



499.   [How to Build a Motion Sensor Light Circuit with an Arduino](#) In this project, we will go over how to build a motion sensor light circuit with an arduino. A motion sensor light circuit is a circuit in which a light turns on when motion is detected. With a PIR motion sensor integrated with an arduino,..... Listed under: [Sensor – Transducer – Detector Projects](#)



500. [Time Sensing Bracelet using arduino](#) The Time Sensing Bracelet is a fabric potentiometer. You select your desired time of day by making contact in the corresponding position on your wrist - where your watch would normally be. There is no point to it but fun. Update: Using some wire wrapped..... Listed under: [Sensor – Transducer – Detector Projects](#)



501. [YAHMS: Wireless Temperature Probes](#) My wireless temperature probes work by using an Xbee module to transmit readings from a TMP36 down to the Arduino base station. The XBees aren't too cheap, coming in around £19 or \$23 so I tried to be cheap and ordered mine from Sparkfun, I..... Listed under: [Temperature Measurement Projects](#)



502. [Simple mass storage for your microcontroller project using arduino](#) Do you want gigabytes of storage for your microcontroller? Would you like a simple way to transfer files from your PC to your picaxe or arduino or other micro project? This little projects demonstrates the uDrive that can be set up as an extra drive..... Listed under: [Memory – Storage Projects](#)



503. [How to make a solar iPod/iPhone charger -aka MightyMintyBoost using arduino](#) I wanted a charger for my iPodTouch and the MintyBoost was definitely my first choice. I wanted to take it a bit further and make it not only rechargeable but also solar powered. The other issue is that the iPhone and iPodTouch have large batteries..... Listed under: [Solar energy projects](#)



504. [Make an Ultrasonic Distance Calculator](#) Arduino Project – The distance calculator I have been playing with Arduino (micro-controller) for about 2 years now and I am becoming more and more passionate about circuits. For those who are not aware of Arduino, check out my article "Arduino – A Guide for..... Listed under: [Calculator Projects](#)



505. [TV-B-Gone Kit Using Arduino](#) Tired of all those LCD TVs everywhere? Want a break from advertisements while you're trying to eat? Want to zap screens from across the street? The TV-B-Gone kit is what you need! This ultra-high-power version of the popular TV-B-Gone is fun to make and even..... Listed under: [Video – Camera – Imaging Projects](#)



506. [Arduino Police Flasher Kit](#) After reading about the famous Arduino programmable microcontroller using the "Getting Started with Arduino Kit (Jameco P/N 2121121) I was eager to try my hand at some real live electronic programming. The Arduino platform is a great place to start for a novice like me. After learning..... Listed under: [LED Projects](#)



507. [Tweet-a-watt – How to make a twittering power meter... using arduino](#) Tweet-a-watt - How to make a twittering power meter... This project documents my adventures in learning how to wire up my home for wireless power monitoring. I live in a rented apartment so I don't have hacking-access to a meter or breaker panel. Since I'm..... Listed under: [Metering – Instrument Projects](#)



508. [Arduino Circuit to Dim LED with Potentiometer](#) In Lesson 8 you learned to write analog voltages on the Arduino, and in Lesson 10 you learned to read analog voltages from the arduino. In this lesson we will combine what you did in lessons 8, 9, and 10 to create an LED with..... Listed under: [LED Projects](#)



509. [LED Sunrise Alarm Clock with Customizable Song Alarm using arduino](#) My Motivation This winter my girlfriend had a lot of trouble waking up in the morning and seemed to be suffering from SAD (Seasonal Affective Disorder). I even notice how much harder it is to wake up in the winter since the sun hasn't come..... Listed under: [Clock – Timer Projects](#)



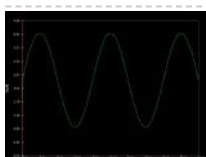
510. [Arduino Lab 2 – Morse Code Generator](#) Introduction An excerpt from OmniGlot.com about the origin of Morse Code: Morse Code was invented by Samuel F. B. Morse (1791-1872), a painter and founder of the National Academy of Design. He conceived the basic idea of an electromagnetic telegraph in 1832, and produced the..... Listed under: [Development Board – Kits Projects](#)



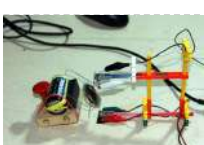
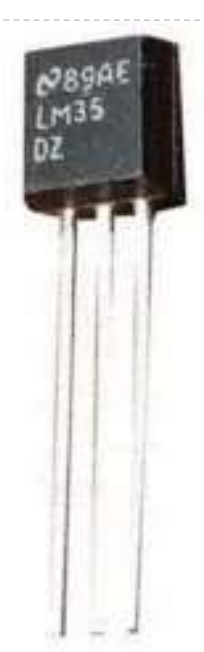
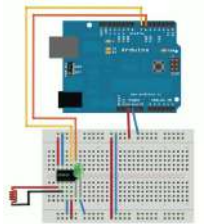
511. [Arduino robot kit – Wiring Diagram](#) I have created this wiring diagram for the connections between the motor controller, motors, and sensor shield. I'll update it later to include other components. And here is an update that includes the servo motor and the range sensor. And here are the detailed pin..... Listed under: [Robotics – Automation Projects](#)



512. [How To Communicate With An Alien Artifact or using arduino](#) Close Encounters of the Curiously Minty Kind. This Instructable will show you how to build an Altoids version of the 'Close Encounters' mothership, and how to interact with it. This may be vital training for that day when the Bright White Beam comes to suck..... Listed under: [Game – Entertainment Projects](#)

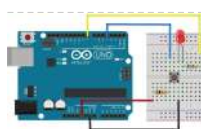


513. [Isolated mains power monitoring \(Arduino\)](#) All about power today.. For a while now, I've been looking around for a mains (220-240VAC) power monitoring circuit that I might be able to interface with an Arduino. There is of course the OpenEnergyMonitor solution, but they seem to use a transformer to isolate and measure..... Listed under: [Metering – Instrument Projects](#)

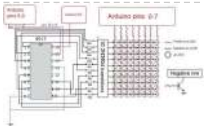
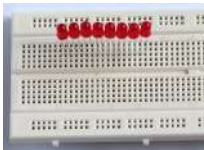
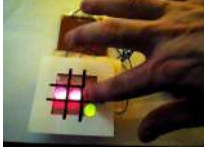
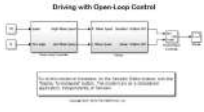
514.  [How to build an 8x8x8 LED cube and control it with an Arduino using arduino](#) There are a lot of LED cubes on Instructables, so why do another? Most are for small cubes consisting of 27 or 64 LEDs, rarely larger since they are limited to the number of outputs available on the microcontroller. This cube will be 512 LEDs,..... Listed under: [LED Projects](#)
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515.  [Arduino automatic watering system](#) [caption id="attachment_19540" align="alignright" width="210"] Fig. 1: Author's prototype[/caption] During summers, most people are too lazy to water the potted plants on their rooftop gardens every day. Explained in this section is a simple and exciting plant watering system that you can build yourself in just..... Listed under: [Home Automation Projects](#)
-
516.  [Using A Bar Graph With The Arduino](#) Introduction This project explores a couple of ways of simulating and using a bar graph with the Arduino. Bar graph components like the following one can be used, This type of bar graph is basically just 10 LEDs in a row with anodes on one..... Listed under: [Other Projects](#)
-
517.  [Solderless Breadboard Layout Sheets \(plug and play electronics\) using arduino](#) Here's a fun system designed to take care of some of the headaches involved in breadboarding a circuit. It is a simple set of template files drawn to scale with real world electronic components. Using a vector drawing program you simply move the components..... Listed under: [Development Board – Kits Projects](#)
-
518.  [Arduino-Based Optical Tachometer](#) Over ten years ago, I put up a web page with detailed instructions on building a simple electric motor based on one from the Beakman's World TV show. I called it the "Beakman's Electric Motor" page and over the years it has had hundreds of thousands, if..... Listed under: [Metering – Instrument Projects](#)
-
519.  [USB NES controller with an arduino! using arduino](#) UPDATE 22-12-2014 Instructables user mattpbooth has updated the code and is hosting it on github: <https://github.com/mattpbooth/ArduinoNESController...> Thanks Matt! UPDATE 03-12-2011 Replaced a println with print (derp). UPDATE 01-12-2011 Remade all code from scratch. Remade 'ible code section; Now includes a 'Processing COM port config for..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
-
520.  [How to Build a LM35 Temperature Sensor Circuit](#) In this project, we will demonstrate how to build temperature sensor circuit using a LM35 sensor. As a temperature sensor, the circuit will read the temperature of the surrounding environment and relay thi temperature to us back in degrees celsius. The IC we will use..... Listed under: [How To – DIY – Projects](#), [Temperature Measurement Projects](#)
-
521.  [Tilt Sensor Tutorial using arduino](#) What is a tilt sensor? Tilt sensors allow you to detect orientation or inclination. They are small, inexpensive, low-power and easy-to-use. If used properly, they will not wear out. Their simplicity makes them popular for toys, gadgets and appliances. Sometimes they are referred to as..... Listed under: [Sensor – Transducer – Detector Projects](#)
-
522.  [RFID with Arduino](#) If you ever wanted to integrate RFID functionality into your project, this small tutorial might help you accomplish that. I used the RDM630 module from seeedstudio in its UART version. It comes on a small board with presoldered connectors which fits perfectly on a breadboard. You only..... Listed under: [RFID - NFC projects](#)
-
523.  [Ceiling Fan LED Display using arduino](#) Seeing so many persistence of vision ideas on the web was too tempting not to try one. After considering several different motors to drive a display, a ceiling fan seemed to run at just the right speed, is out of the way, and very quiet..... Listed under: [Home Automation Projects](#)
-
524.  [Home Automation using Arduino and MATLAB](#) n present time home office appliance controlling is common thing. Today for controlling home/offices appliances, machineries in companies/industries uses different types of automation systems like DTMF controlled, GSM controlled and many others. So here this project is made for interfacing MATLAB (Graphic User Interfacing) and Home/office/industries..... Listed under: [Home Automation Projects](#)
-
525.  [AVRSH: A Command Interpreter Shell for Arduino/AVR. using arduino](#) Ever wanted to be "logged in" to your AVR microcontroller? Ever thought it would be cool to "cat" a register to see its contents? Have you always wanted a way to power up and power down individual peripheral sub-systems of your AVR or Arduino in..... Listed under: [Arduino Programmer Projects](#)
-
526. [How to Build a Vibration Motor Circuit](#) In this project, we will show how to build a vibration motor circuit. A vibration motor is a motor which vibrates whe given sufficient power. It is a motor that literally shakes. It is very good for vibrating objects. It can be used in a..... Listed under: [How To – DIY – Projects](#), [Motor](#)



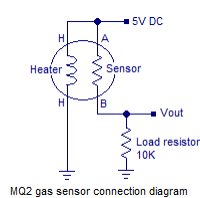
Projects

527.  [Acorn Chime using arduino](#) By: Charlie DeTar, Christina Xu, Boris Kizelshteyn, Hannah Perner-Wilson A digital wind chime with hanging acorns. Sound is produced by a remote speaker, and data about chime strikes is uploaded to Pachube. Step 1: Brainstorming for a device that would represent ourselves Our goal was..... Listed under: [Game – Entertainment Projects](#)
528.  [Arduino Chandelier from Jars](#) E-Edit: Thank you very very much for voting for me in Featured Author, Glue and Battery Powered Contests! Cheer up and wait for my project so special is coming... Edit: If you really like this project, you can vote for me on the top right corner, forFeatured..... Listed under: [LED Projects](#)
529.  [Bedazzler: DIY non-lethal weaponry using arduino](#) Our first open source Homeland Security non-lethal weapon project - The "THE BEDAZZLER: A Do-it-yourself Handheld LED-Incapacitator". After attending a conference where the \$1 million "sea-sick flashlight" (named "THE DAZZLER") was demonstrated by the US Dept. of Homeland Security, we decided to create our own..... Listed under: [Home Automation Project Ideas](#)
530.  [Using Push Button Switch with Arduino Uno](#) In this tutorial you will learn how to read the status of a digital pin of Arduino. I hope that you already go through our first tutorial, Getting Started with Arduino Uno – LED Blinking. In this example, a push button switch and an LED is connected to Arduino..... Listed under: [LED Projects](#)
531.  [Control a RepStrap with Processing using arduino](#) This instructable shows how you can use many openly available projects together to build an interesting and complex system. It draws on several community projects including: RepRap, Arduino, Processing, Linux and, of course, Instructables! More specifically this instructable shows how to draw the path of..... Listed under: [CNC Machines Project Ideas](#)
532.  [Build A Binary Clock Using Arduino](#) Introduction In this project, 16 LEDs are used to represent the time in binary. The time is read from a Real Time Clock breakout board - the same one used in the Digital Clock page. The binary clock uses 4 place values for the hour..... Listed under: [Clock – Timer Project Ideas](#)
533.  [Build an Arduino-powered talking robot head using arduino](#) This robot head was originally built as a end of the year project for my physical computing class, but over the summer it has "learned" how to talk. The head is powered by two Freeduinos, 3 TLC5940NT chips and an Adafruit Industries Wave Shield found here: www.ladyada.net/make/waveshield/..... Listed under: [Robotics – Automation Project Ideas](#)
534.  [Use Arduino to Interface with a Remote Controlled Power Switch](#) Update: check out the RFToy — an easy-to-use standalone gadget to control remote power sockets. Also, support for remote power sockets have been added to OpenSprinkler firmware 2.1.1. For a while I've been looking for a way to switch household power line (110V) devices. One of the simplest..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
535.  [3x3x3 LED Cube with Arduino Lib using arduino](#) There are other Instructables about building LED cubes, this one is different for several reasons: 1. It's built with a low number of off-the-shelf components and hooks up directly to the Arduino. 2. A clear, easy to reproduce circuit diagram is provided with plenty of..... Listed under: [Arduino LED Project Ideas](#)
536.  [Easy DIY Home Automation \(using servo switches\) using arduino](#) This Instructable is all about one of life's simple actions, flipping a light switch on and off. At oomlout we do it many times a day, so many in fact it came to a point where we asked ourselves "Can't we get an Arduino to..... Listed under: [Home Automation Project Ideas](#)
537.  [DIY Arduino Pulse Sensor](#) So I mentioned in an earlier Instructable that I am a teaching assistant (TA) for an introductory engineering course for biomedical engineering majors at Vanderbilt University. My main task as a TA is to re-write a few laboratory exercises that the students will be performed..... Listed under: [How To – DIY – Project Ideas](#), [Sensor – Transducer – Detector Project Ideas](#)
538.  [Two Wire Arduino Knight Rider](#) This tutorial shows how to interface eight LEDs to an Arduino using only two Arduino pins. This is made possible by using a PCF8574 I/O expander IC. A "Knight Rider" display is shown on the LEDs. Prerequisites Complete tutorial 4 – Arduino Knight Rider. Be able..... Listed under: [LED Projects](#)
539.  [Arduino Lilypad Interactive Passion Sensing Scarf using arduino](#) This was my first time working with an Arduino Lilypad. I have been wanting to try something that dealt with soft circuits for awhile now. This project is what I came up with. The concept is based off my friend Ethan Dicks from theFusefactory.org's emergent..... Listed under: [Game – Entertainment Project Ideas](#)
540.  [Arduino Serial Thermometer](#) The Arduino reads temperature from a MCP9700 temperature sensor IC and displays the temperature in the Arduino IDE serial monitor window. Also see the Arduino LCD thermometer tutorial (tutorial 14). Prerequisites Complete Tutorial 9: Using the Arduino Serial Port before attempting this tutorial. Components Besides an Arduino Uno board,..... Listed under: [Metering – Instrument Projects](#)
541.  [The Ardweeny: the little friend of the Arduino \(and how to beef it up\) using arduino](#) Open-source hardware? Arduino(tm) is the first name to come to mind! As great as it is, sometimes we need a small microcontroller solution for a project, or a stripped-down version for cost-

effectiveness. The Ardweeny is the solution. These small kits are 100% compatible with the..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)

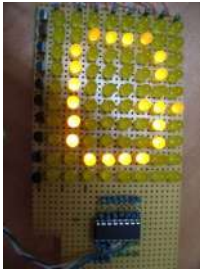
542.  [Using the Arduino Serial Port](#) The Arduino Uno can send data (such as a text message) to the PC over the USB cable. The Arduino IDE has a serial monitor window that can be opened and will receive and display the data sent from the Arduino board. Data can also..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)
543.  [Core3duino using arduino](#) This is an addon shield to an add-on shield. That's right, you have to have the Core2duino on your Arduino to be able to understand why you would want this in the first place. So once you have your Core2duino saddled up, give this one..... Listed under: [Development Board – Kits Project Ideas](#)
544.  [Make A Dual LED Flasher Using Arduino](#) A two transistor circuit that flashes two LEDs on and off alternately. Prerequisites Complete tutorial two - Transistor Timer before attempting this tutorial. Components In addition to an electronic breadboard, wire links, a 9V battery and a battery clip, you will need: QTY PART DESIGNATOR NOTES TYPE..... Listed under: [LED Projects](#)
545.  [Building IllyClock – Arduino-based alarm clock in a coffee can using arduino](#) Updated Aug 4, 2011 A streamlined version is now described here. Beside the enclosure, the original feature of IllyClock is showing the time in colors: 3 hours before wake-up time, color changes from green to orange; 1 hour before wake-up, the time is shown in red. One..... Listed under: [Clock – Timer Project Ideas](#)
546.  [Arduino Melody](#) A very easy tutorial that uses only two components. The Arduino plays a short melody on a loudspeaker. The program to load to the Arduino is one of the programs that is built into the Arduino IDE. Prerequisites Complete tutorial 3 - Starting with Arduino..... Listed under: [Sound – Audio Projects](#)
547.  [Twitter Mood Light – The World's Mood in a Box using arduino](#) How's the world feeling right now? This box tells you. Powered by: an Arduino, a WiFly wireless module, an RGB LED, Twitter.com and a 9v battery. I'm a news junkie. I want to know everything that is going on in the world as soon as..... Listed under: [Game – Entertainment Projects](#)
548.  [Arduino Knight Rider](#) In this tutorial, eight LEDs are interfaced to the Arduino Uno board. This is not complicated – it is just like interfacing a single LED to the Arduino as done in tutorial 3, but eight times over. A program is then loaded to the Arduino..... Listed under: [LED Projects](#)
549.  [Make a wall avoiding Robot! using arduino](#) Objective: To create from scratch a working robot that is able to avoid walls and obstacles. Ever wanted to make a robot that could actually do something, but never had the time or knowledge to do it? Fear no more, this instructable is just for..... Listed under: [Robotics – Automation Project Ideas](#)
550.  [Arduino LCD](#) In this tutorial you will connect a LCD (Liquid Crystal Display) to the Arduino Uno and then run the Arduino LCD example programs that are built into the Arduino IDE. Prerequisites It is recommended for beginners to complete all the Arduino tutorials up to and..... Listed under: [LCD Projects](#)
551.  [Arduino and Touchpad Tic Tac Toe using arduino](#) Or, an exercise in input and output multiplexing, and working with bits. And a submission for the Arduino contest. This is an implementation of a tic tac toe game using a 3x3 array of bicoloured LEDs for a display, a simple resistive touchpad, and an..... Listed under: [Game – Entertainment Project Ideas](#)
552.  [Make A Arduino LCD Thermometer](#) In this tutorial, a temperature sensor (MCP9700 linear active thermistor IC) and LCD are connected to the Arduino. The Arduino reads the temperature from the MCP9700 on analog pin A0 and displays the temperature on the LCD. This video shows the circuit operating. When touched..... Listed under: [LCD Projects](#)
553.  [How to wire an arduino-based 3-axis CNC machine using arduino](#) I've seen a number of tutorials about how to build the platform for a 3-axis CNC milling machine. I have not seen anyone tackle the tricky subject of the electronics. Here now is my attempt to do so. Step 1: Parts You'll need: - an..... Listed under: [CNC Machines Project Ideas](#)
554.  [Drive with PID Control on an Arduino Mega 2560](#) This example shows how to simulate a simple closed-loop control algorithm in Simulink and how to run it on an Arduino Mega 2560 board. Contents Introduction Prerequisites Required Hardware Task 1 – Build the Vehicle Task 2 – Build the Motor Controller Task 3 –..... Listed under: [Other Projects](#)
555.  [Musical MIDI Shoes using arduino](#) Like many people, I often find myself unconsciously tapping my feet, whether it's along to a song or out of some nervous habit. As fun as that is though, I've always felt as if something has been missing. If only I could trigger the sounds..... Listed under: [Sound – Audio Projects](#)
556.  [MIDI Linear Actuator](#) This project uses relays to control a Firgelli Automations linear actuator without feedback. The relays are controlled by the MIDI Volume (Control Change number CC7) command which is read by the microcontroller and converted into one of the only 3 states of operation: 1) The..... Listed under: [Other Projects](#)
557.  [Wallbots: Autonomous Magnetic Robots that Traverse Vertical Surfaces using arduino](#) This Instructable will teach you how to create magnetic robots that traverse vertical surfaces. These robots can move on any metallic walls, including elevators, whiteboards, refrigerators or metal doors. The robots are outfitted with several light sensors, allowing them to respond to simple user interactions..... Listed under: [Robotics – Automation Project Ideas](#)

558.



[LPG sensor using arduino](#) LPG sensor using Arduino with alarm and cutoff. A simple LPG sensor using Arduino is shown in this article. This circuit indicates the amount of LPG in the air. The circuit sounds an alarm and trips a relay when the concentration is above a predetermined..... Listed under: [Sensor – Transducer – Detector Projects](#)

559.



[Make a 8x10 L.E.D Matrix using arduino](#) UPDATE 1: I HAVE ADDED THE CODE FOR CONWAY'S GAME OF LIFE UPDATE 2: NOW YOU CAN SAVE SOME ARDUINO PINS WITH THE HELP OF 1 SHIFT REGISTER. In this instructable I will show you how to build a quite fancy 8 by 10 L.E.D matrix(with scrolling text and animations) using the Arduino and 4017 decade..... Listed under: [LED Projects](#)

560.



[IR Remote Controlled Home Appliances using Arduino](#) In present times there are many types of Home Automation Systems which are available in the market. Most of these are simple Home Appliances Controlling Systems like DTMF controlled Home Appliances, GSM based Home Appliances Controlling, RF based Home Appliances Controlling. Here we are going..... Listed under: [Home Automation Project Ideas](#)

561.



[Arduino Controlled Servo Robot \(SERB\) using arduino](#) What better way to start experimenting with open source micro-controllers (Arduino) then by building your very own open source robot (CC (SA -BY))? What to do with your SERB? (here) - How to connect your SERB to the internet and drive..... Listed under: [Robotics – Automation Project Ideas](#)

562.



[Build A Simple Robotics Breadboard Using Arduino](#) This Instructable shows you how to build a simple, inexpensive breadboard for robotics experiments. It is a companion to Cheap, Easy Robotics for the Non-Programmer. Here we'll learn how to build a Babuino robot to use for experiments with the Babuino/Blocos software environment. Using a..... Listed under: [Robotics – Automation Project Ideas](#)

563.



[An easy way to send your heartbeat to the Cloud using arduino](#) This cool (and very low price) sensor is attached on your ear and can detect your heart's pulse through transmitting infrared light and checking the absorption variation caused by the blood flow on your ear lobe. The site of the products provides also the Arduino..... Listed under: [Medical – Health based Project Ideas](#)

564.



[PIR Motion Sensor Tutorial using arduino](#) Pyroelectric ("Passive") InfraRed sensors: "What is a PIR sensor?" PIR sensors allow you to sense motion, almost always used to detect whether a human has moved in or out of the sensors range. They are small, inexpensive, low-power, easy to use and don't wear out..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)

565.



[A DIY photoplethysmographic sensor for measuring heart rate](#) Meet Easy Pulse: A kit that includes all it needs to make a DIY heart rate sensor. Although it is not built using an Arduino, it is still open and easy to build. From the site: "This project is based on the principle of photoplethysmography..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)

566.



[The Smuggie: Tweet straight from your Snuggie using arduino](#) Want to tweet how satisfied you are cuddled up in your Snuggie? The Smuggie is a modified Snuggie, designed specifically for those who feel the need to express their smug satisfaction with a Snuggie to their friends on Twitter. Here's a list of everything you'll..... Listed under: [Internet – Ethernet – LAN Project Ideas](#)

567.



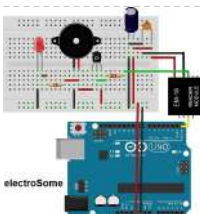
[Very simple ECG + Pulse Oximeter using arduino](#) Scott W Harden has built an updated version of his ECG circuit for tracking his heartbeat. The main goal of the update is to provide a hack for collecting heartbeat with minimal h/w cost and circuit complexity. As you can see from the project photo above, the..... Listed under: [Medical – Health based Project Ideas](#)

568.



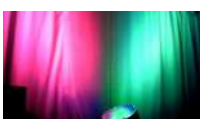
[The Lightning Simulator/Breathalyzer/Graphic Equalizer – Arduino Powered using arduino](#) UPDATE: A portable version of the Talking Breathalyzer is here <http://talkingbreathalyzer.com> The LED strips are mounted on an outdoor trellace which functions as a lightning simulator, outdoor breathalyzer, graphic equalizer synced to music, and a few other effects with sound. Materials: 8 12v RGB Waterproof Flexible..... Listed under: [LED Projects](#)

569.



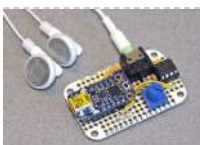
[Interfacing EM-18 RFID reader with Arduino Uno](#) Arduino Uno is an opensource physical computing platform based on ATmega328 microcontroller and provides a development environment for writing software for the board. It can be used for a variety of projects. EM-18 RFID reader is one of the commonly used RFID reader to read..... Listed under: [Other Projects](#)

570.



[Arduino + WiFi, Music Responsive LED Light Fixture using arduino](#) This instructable gives instructions for constructing a Saiko5 WiFi enabled LED light fixture based on the Arduino hobbyist platform. It includes step-by-step instructions from board design to soldering to case integration, as well as instructions explaining how the software and firmware can be used to..... Listed under: [LED Projects](#)

571.



[Trinket Audio Player using arduino](#) Overview We usually think of the Adafruit Trinket as a tiny subset of a "real" Arduino; less RAM, less code space, less I/O. But this little chip has a couple tricks up its sleeve, things its larger brethren can't do. One of these is a..... Listed under: [Sound – Audio Projects](#)

572. [Beatfly : Make an illuminating blimp and control it with your voice, Keyboard, MIDI Controller, Garageband file, iPhone, Flash, and more! \[Mac OSX\] using arduino](#) [Mac OSX Only] Because I use Quartz Composer, my program works only on Mac OSX. I am now extending and improving it toward cross-platform



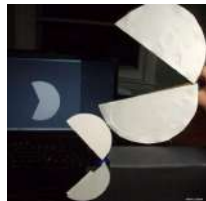
you have knowledge of computer programming, you can make your own system that connects to the blimp. The communication protocol..... Listed under: [LED Projects](#), [Sound – Audio Project Ideas](#)



573. [Make A Arduino Solar Radio](#) Solar charging, via the panel on the back. * 12 position switch to select channel number * Seek up / seek down controls and 'store' button * RDS display of call sign * Frequency display * Battery voltage display * Solar charging current display The..... Listed under: [Radio Projects](#)



574. [Updating the Arduino Garage Door Circuit for the new Gliderol Garage Controller](#). We moved house recently and I was obviously very keen to continue the home automation routine. As described in Adventures with an Arduino – Part 1: The Business Problem, I created an Arduino based garage door interface to integrate with a BOSS BOL6 garage door controller..... Listed under: [Home Automation Project Ideas](#)



575. [PUPPET CONTROLLER using arduino](#) Three kinds of motion: Human, Mechanical, Animation. Blend them together to build a puppet controller for the real and virtual world. Or, Pacman - three ways. This Instructable includes: - Using an adjustable resistor as input to the Arduino Micro-controller - Controlling two servo motors from..... Listed under: [Game – Entertainment Project Ideas](#)



576. [Intelligent Letter Box using Arduino and GSM](#) In the days of technology postman still comes to our house for delivering the letters, couriers and parcels. Because some things like courier, parcels can't send via email and by using any other electronic media. So for getting notification of our letter delivery in our..... Listed under: [Other Projects](#)



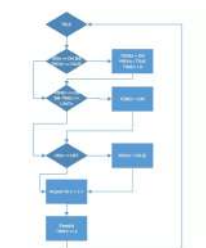
577. [LED Umbrella with Arduino using arduino](#) The LED Umbrella with Arduino combines an umbrella, an 8x10 LED matrix and an Arduino microcontroller to create a controllable, programmable LED experience in the privacy of your own umbrella. This project was inspired by the Electric Umbrella by sockmaster and a number of LED matrix instructables..... Listed under: [LED Projects](#)



578. [ARDUINO based IR remote control robot using arduino](#) Hi everyone. This my new project IR remote control robot using arduino. This is a simple design robot you can easily build it. Step 1: Requirements: Project requirements: Arduino uno Tsop1738 (ir receiver) H bridge ic (L293D) Two dc motor A robot base 9v Battery..... Listed under: [Robotics – Automation Project Ideas](#)



579. [Sleek word clock using arduino](#) Inspired by drj113's great instructable on making a word clock, I wanted to make my own. After seeing the (extremely overpriced) commercial "qlocktwo" word clock, I decided to borrow its smooth glossy black design while basing the innards of my clock on drj113's design. In..... Listed under: [Clock – Timer Project Ideas](#)



580. [Project work3:Arduino code and the circuit diagram using arduino](#) In order to realise the "music garden", the most important part is the Arduino code and circuit diagram. First of all, I will present my Arduino code: (I will show you the way I think as a flow chart at first) Flow Chart: Details: this flow chart is a..... Listed under: [Sound – Audio Projects](#)



581. [Haptic Feedback device for the Visually Impaired \[Project HALO\] using arduino](#) I recently watched an episode of Stan Lee's Superhumans which featured a blind man who used a series of clicks, like a bat, to echo locate his surroundings. I got to thinking about other blind people and their ability to navigate freely – without the..... Listed under: [Medical – Health based Project Ideas](#)



582. [Hobbyduino Mini V1.0 using arduino](#) Introduction The Hobbyduino Mini is a clone of the Arduino main-board. It contains a ATmega328 processor programmed with the Arduino bootloader. The Hobbyduino does not contain the circuitry for USB communication. I opted to rely on the FTDI232R serial boards to handle the USB-to-Serial protocol. Here..... Listed under: [Development Board – Kits Projects](#)



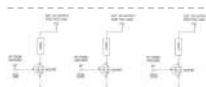
583. [A simple DIY spectrophotometer using raduino](#) What's all this? This instructable will explain how to build a fairly basic but working spectrophotometer out of easily sourceable parts. Of course, this device is nothing compared to a commercial spectrophotometer, but it will allow the builder to understand how such a device works..... Listed under: [Metering – Instrument Project Ideas](#)



584. [Build Your Own Arduino & Bootload an ATmega Microcontroller – part 1](#) There are many reasons to build your own Arduino circuit on a protoboard or a custom-designed printed circuit board. At the heart of the Arduino platform is an AVR microcontroller, in usual way you need a special hardware programmer and suitable hex files to program..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)



585. [High-speed Photography with Arduino and CHDK using arduino](#) This project uses an Arduino microcontroller and a laser break-beam trigger to fire via USB remote a Canon camera modified with CHDK (Canon Hack Development Kit) firmware. Immediate influences are the high-speed flash photography triggered by sound or light project by Glacial Wanderer and the..... Listed under: [Video – Camera – Imaging Projects](#)



586. [Arduino PWM Led Control using arduino](#) Looking for a simple circuit to control the light intensity of Light Emitting Diodes (LEDs) or similar lighting sources? Here is an Arduino based circuit with three independent pulse width modulated (PWM) channels to fulfil your requirements! Just follow the schematic diagram to complete the..... Listed under: [LED Projects](#)

587. [Lunchtime Clock using arduino](#) Have you ever wished lunchtime were longer, but didn't know where to find those few extra minutes? Well, wish no longer: Thanks to great advances in clock technology, I present to you a clock that speeds up 20% every day at 11:00 and slows..... Listed under: [Clock – Timer](#)



[Project Ideas](#)

588.



[Arduino project: Stereo Peak Program Meter using arduino](#) Previously, we introduced the Arduino's analog-to-digital converter (ADC) in detail, looking at successive-approximation A-D conversion and how it's the best compromise between speed and cost. This time, we start putting some of that theory into practice by building a stereo peak-program meter. Our Peak Program..... Listed under: [Metering – Instrument Project Ideas](#)

589.



[Simple Animatronics with Servos and Arduino using arduino](#) Servos are surprisingly easy to use. Even more so than simple DC motors and steppers when you have a microcontroller. In this instructable we'll use a 'duino to drive five servos which will control a doll's limbs and neck. I bought the servos at HobbyPartz..... Listed under: [Game – Entertainment Projects](#)

590.



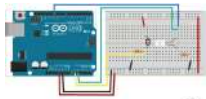
[MIDI Bass Pedal Arduino Encoder using arduino](#) MIDI BASS PEDAL ARDUINO UNIT The MIDI Bass Pedal circuit is capable of encoding any number of momentary action, push to make, single pole single throw (SPST), switches from 1 up to 30 to produce the equivalent MIDI note-on/note-off data commands. The encoded switches are..... Listed under: [Sound – Audio Projects](#)

591.



[Arduino + Laptop Touchpad using arduino](#) Yes, this is more or less your average touchpad that one can find from inside a laptop. This model, like majority of touchpads out there operates with PS/2 standard. This means that it can be directly plugged in to a PS/2 connector and with proper..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)

592.



[Electronic Circuit: photocell and LED](#) The cmd_response sketch is very general with respect to the ANALOG IN and DIGITAL I/O of the Arduino boards. We can use it to read a wide variety of sensors from remote computer systems. First, we demonstrate how the Arduino cmd_response sketch works, we construct..... Listed under: [LED Projects](#)

593.



[Sending Message Using Alpha-Numeric Keypad with GSM and Arduino](#) GSM is quite a common Device which is used in major Projects and Real Time Operations. There are many applications which are using features of GSM Module like the feature sending Messages, making a Voice Call, Reading Messages, attempting Call etc. Many at times you..... Listed under: [Development Board – Kits Project Ideas](#)

594.



[Arduino Wind Instrument using arduino](#) I wanted to create an Arduino instrument that was easy to play, but would sound better with practice. This "wind" instrument combines the Sparkfun Electret Microphone breakout board with the Tone library and 5 buttons on one analog pin. The musician must make a sound..... Listed under: [Home Automation Project Ideas](#)

595.



[Peggy2: High And Low](#) First and foremost, big thanks to Damien for her time and effort on soldering 265 LEDs on peggy2 circuit board, which made my programming part possible to continue. Instead of soldering LEDs directly onto the Peggy2 board, we have to use Ethernet cables as "extensions" Listed under: [LED Projects](#)

596.



[Rechargeable Battery Capacity Tester using arduino](#) Do you have a pile of AA rechargeable batteries in your drawer? Some are old, some are new, but which sets would you bring with your camera on your next trip, and which ones are past their useful life? I like using rechargeable batteries, but..... Listed under: [Battery Projects](#)

597.



[CMUcam3: Working Module But Not Working CMUcam3-Arduino System](#) After over spending nearly 20 hours extra on fixing peggy2 board I mentioned in the previous post, there is only a few hours left for me to work on CMUcam3-Arduino system and its facial-recognition driven motor system. The basic programming architecture is shown below. When in..... Listed under: [Video – Camera – Imaging Projects](#)

598.



[NESBot: Arduino Powered Robot beating Super Mario Bros for the NES using arduino](#) An Arduino Duemilanove (other boards will probably work, but you will have to adjust the steps for your device) Working NES Console Super Mario Bros. (Note: this must be only the single game, not the two- or three-in-one cartridge) A controller you can cut the..... Listed under: [Game – Entertainment Project Ideas](#)

599.



[Arduino Intervalometer Camera controller](#) Intervawhat? An intervalometer is a camera controller that signals the camera to take a picture after some set interval. This is really useful for creating time-lapse videos. For a long time, I used my TI-89 calculator to create time-lapse videos with my Canon digital Rebel XTi. It..... Listed under: [Video – Camera – Imaging Projects](#)

600.



[Q&D-Poor man's-Skinner-Sadist-Jeopardy game using arduino](#) In this instructable you will learn how to make a Q&D-Poor man's-Skinner-Sadist-Jeopardy game . First off, the disclaimer: I'm not responsible of whatever you do. You have to know that with a great power comes...bla-bla-bla. Just be careful and remember that electricity reserves respect. While..... Listed under: [Game – Entertainment Project Ideas](#)

601. [Radio Telemetry for a Model Rocket using arduino](#) Flying model rockets is fun, but there is always the question of how high did it go. Using a programmable micro-controller and some sensors, you can monitor the entire phase of flight and measure acceleration and altitude, among other things. With this project show you how..... Listed under: [Radio Project Ideas](#)



602. [Bubblebot: Gigantic Bubble Generator using arduino](#) While being a bit lengthy and requiring experience with Arduino, this contraption is bound to grant you infinite glory among your friends, toddlers and grownups alike! Step 1: What You Need Here's a list of the materials and parts I used: The Frame * 5..... Listed under: [Game – Entertainment Project Ideas](#)



603. [New Arduino WiFi Shield \(Testing\) usign arduino](#) The WiFi Shield was delivered by Amazon. The Arduino UNO Rev 3 was found at RadioShack... First you need to load the last Arduino IDE (Ver 1.0.2) it has the necessary library to use the WiFi shield. Tried the examples "Scan for available networks" and Listed under: [Wifi - Wlan Projects](#)



604. [Yet Another Daft Punk Coffee Table \(5x5 LED Matrix\) using arduino](#) Yes, I know this has been done before, but I wanted to build my own, using as few parts as possible. I built this as a table top or wall mount model, but it can be scaled up to make a coffee table. I built..... Listed under: [LED Projects](#)



605. [Review – Maxim MAX7219 LED Display Driver IC using arduino](#) Today we are going to examine the Maxim MAX7219 LED display driver IC. The reason for doing so is to show you how something that used to be quite complex can be made very simple – and that is what all this technology is for,..... Listed under: [LED Projects](#)



606. [Arcade Button MIDI Controller using arduino](#) Having a hardware interface to your favourite music / DJ / VJ software can really open up doors in your creativity. The most widespread form of hardware control to your PC for such applications is a MIDI based controller. A MIDI controller can send and..... Listed under: [Sound – Audio Project Ideas](#)



607. [Brushless DC \(BLDC\) motor with Arduino. Part 3 – The Stroboscope Project](#) It has been all dry theory in the Brushless DC (BLDC) motor with Arduino series up to this point. This is where it gets to be more fun. If you've just arrived, please check out the previous two installments: Driving a three-phase brushless DC motor..... Listed under: [Motor Projects](#)



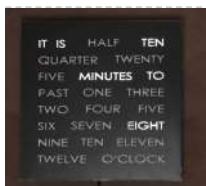
608. [Arduino Basics: Rctime using arduino](#) Rctime is a function for the Arduino that finds its roots in Basic-based micro controller programming languages (such as the Basic Stamp). This function basically counts the amount of time it takes to charge a capacitor through a resistor and returns a digital value. In..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)



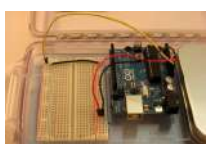
609. [Arduino Mega Pololu Shield using arduino](#) RepRap Arduino Mega Pololu Shield, or RAMPS for short. It is designed to fit the entire electronics needed for a RepRap in one small package for low cost. RAMPS interfaces an Arduino Mega with the powerful Arduino MEGA platform and has plenty room for expansion..... Listed under: [Development Board – Kits Project Ideas](#)



610. [The Wordclock Grew Up! using arduino](#) Well, It had to happen. I first published my WordClock project in September 2009. It was a Microchip PIC based clock, using a PIC16F877A microprocessor. In the last year and a half, I have been constantly improving it, and have adapted it to the Arduino,..... Listed under: [Clock – Timer Projects](#)



611. [Light Meter Using I2C Level Converter, LCD, and TSL2561using arduino](#) I recently needed to measure how different materials affect light transmission for a gardening project. I decided this was the perfect opportunity to try out the new logic level converter to run both a 5v LCD and a 3.3v light sensor on a single i2c..... Listed under: [LCD Projects, Metering – Instrument Project Ideas](#)



612. [Arduino Laser Show with Full XY Control using arduino](#) Update! See Step 32 to find out how to use this project with a green laser! Also - checkout the LaserTweet Instructable to make this project display data from Twitter: <http://www.instructables.com/id/LaserTweet-Twitter-Projecting-Laser-Show/> This project uses an Arduino and some cheap audio speakers to create a real..... Listed under: [Game – Entertainment Project Ideas](#)



613. [Arduino GPS Clock usign arduino](#) I had a Holux M-1000B Bluetooth GPS module that was just gathering dust in my room. I had bought it from DealExtreme back in the days when I had GPS-less (but external GPS capable) Nokia E51. Upgrading to a Nokia E52 has since made this..... Listed under: [Clock – Timer Project Ideas, GPS Based Project Ideas](#)

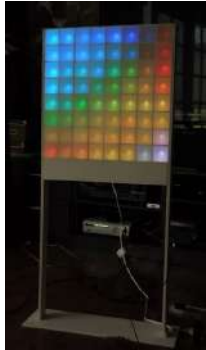
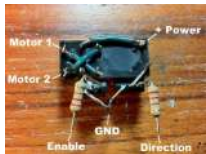
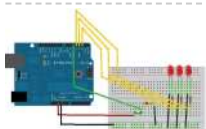


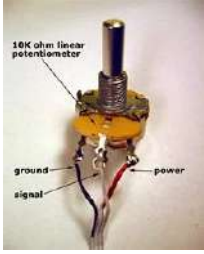
614. [How to Build an Arduino Powered Chess Playing Robot using arduino](#) Judging by the sheer number of chess related Instructables, I think it's safe to say the community enjoys the game. It can be difficult, however, to find someone who plays on the same level you do. To solve this dilemma, and to increase my playing..... Listed under: [Robotics – Automation Project Ideas](#)



615. [DS1307 I²C Clock using arduino](#) I wanted to learn how to interface with I²C devices using my Arduino, so I bought a DS1307 clock and crystal kit from Earthshine Electronics. I've no association to them, but I'd recommend having a look at their shop. Their prices are very reasonable, unlike..... Listed under: [Clock – Timer Project Ideas](#)



616.  [Lampduino – an 8×8 RGB Floor Lamp using arduino](#) Lampduino is a computer-controlled free-standing floor lamp, comprised of an 8x8 RGB LED matrix. The lamp stands 45" high and 18" wide. Light emanates from both sides. It has various display modes, as well as an included editor for creating animations. The lamp is controlled..... Listed under: [Home Automation Project Ideas](#)
-
617.  [Room roving robot – phase 1 using arduino](#) My second holiday project was a bit more fun than just blinking lights. I decided to tear apart a \$10 RC jeep and control it with the Arduino. For this project, I added a motor shield on top of the Arduino that I purchased at..... Listed under: [Robotics – Automation Project Ideas](#)
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618.  [Make a simple platform and give mobility to your computer using arduino](#) A computer is a very handy thing to use in your robots. If you start listing all the features that can be used for robotic purposes you'll find that it is cheaper to buy a netbook than buying LCD, wifi and bluetooth modules, cameras, speech synthesizer..... Listed under: [RTOS – OS Projects](#)
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619.  [Hacking Hex Bug Spider using arduino](#) For the Smart Cities exhibition in Leeds in a couple of weeks, we've been building a physical representation of an agent based simulation. Hex Bug Spiders are relatively cheap hexapod robots that are controlled via an infra-red transmitter which has an A or B code so..... Listed under: [Game – Entertainment Project Ideas](#)
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620.  [\(w/ Video\) Basic Arduino Robot, Light Seeker! using arduino](#) Many times I have Googled for "Arduino Robot" in hopes of finding a robot to build. I end up finding many versions of a obstacle avoiding robot that uses either an infrared or a sonar range finder sensor mounted on a servo to detect objects..... Listed under: [Robotics – Automation Project Ideas](#)
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621.  [Easy, Reversible Motor Control for Arduino \(or any Microcontroller\) using arduino](#) This project uses just three main components to provide forward and reverse control for a single motor. You can easily interface it to an Arduino or any other microcontroller. It's so simple - you can wire it up "free-form" without a circuit board in about..... Listed under: [CNC Machines Project Ideas](#)
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622.  [How To Use a Nokia Color LCD!](#) Nokia manufactures a wide variety of cell phones and many of their cheaper phones contain simple LCD's which may be used in microcontroller projects. There is one particular LCD model that is used in a wide variety of their phones and is often referred to..... Listed under: [Phone Project Ideas](#)
-
623.  [Tutorial – Arduino and the MAX7219 LED Display Driver IC using arduino](#) Use the Maxim MAX7219 LED display driver with Arduino in Chapter 56 of our Arduino Tutorials. The first chapter is here, the complete series is detailed here. Update – 4/1/15 – This article is pending a re-write, please refrain from comments and questions until the new version is published. Introduction..... Listed under: [LED Projects](#)
-
624.  [Ollie- a DIY autonomous robotic blimp using arduino](#) Ollie is an open source blimp-based autonomous and ambient robot that dwells in human habitats. Ollie is observant, often flying in a manner suggesting curiosity for the world around him. Ollie reacts to voices by excitedly flapping his wings, communicating his friendliness and eagerness to..... Listed under: [Robotics – Automation Project Ideas](#)
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625.  [PS1 Controller Joysticks with Arduino](#) Idea: To take one of my old Playstation 1 controllers and extract the dual thumbstick setup so that it can be easily used in a microcontroller project (in my case: with the Arduino) without extra libraries or drivers that you would need if you want..... Listed under: [Game – Entertainment Project Ideas](#)
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626.  [Arduino Binary Die using arduino](#) After buying a Nanode (an Arduino-compatible board with ethernet built-in) last weekend, we've been trying to work it out by making a couple of simple examples, the 'Binary Dice' is the first one with input and outputs. A note, this code example is based on..... Listed under: [LED Projects](#), [Other Project Ideas](#)
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627.  [Shaun The Noisy Sheep using arduino](#) Make A "doorbell" using an Arduino Uno, a Wave shield from Adafruit, a small speaker, a plug, a Sharp distance sensor and a Shaun the Sheep. Our Shaun is used in an open doorway to alert store staff when a customer has entered. Step 1:..... Listed under: [Game – Entertainment Project Ideas](#)
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628.  [Telecran \(Etch a Sketch\) + Arduino = Telecrandduino ! using arduino](#) I came across a bunch of stepper motors and I have since been looking for a project to do with the kids. An old Telecran (French for Etch-a-Sketch) later, we are in business ! What I used for this project: - an Arduino Uno -..... Listed under: [CNC Machines Project Ideas](#)
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629.  [Boozeduino using arduino](#) Now with more LED. Arduino mega powered breathalyzer using the MQ-3 sensor. A relative gauge for judging how intoxicated you are. NOT TO BE USED AS MEANS OF BREATHALYZING NEVER DRINK AND DRIVE. This is more of a device to encourage one to drink..... Listed under: [LED Projects](#)
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630.  [Analog Sensors using arduino](#) Analog sensors produce an analog (continuous) voltage that typically varies from 0 to 5 volts. They have three wires – ground, power, and signal (typically red, black, and white, respectively). Examples shown below include: Potentiometers Proximity Accelerometers Ribbon Bend Pressure Light Temperature Sound Multi-touch Touch..... Listed under: [Sensor – Transducer – Detector Projects](#)
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631.  [LoL Shield Audio Spectrum VU Meter using arduino](#) This is an audio spectrum VU meter using the LoL Shield for Arduino . The LoL Shield is a 14 x 9 LED matrix which fits onto the Arduino as a shield and is controlled through an efficient method known as Charlieplexing . It was..... Listed under: [Metering – Instrument Project Ideas](#)
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632.  [Flash trigger using arduino](#) his project is mainly based in this one from Glaciar Wanderer. I just liked his idea and worked it on my own. (I think this guy and me would be friends, as the projects he has in his photography category are things I've been wanting..... Listed under: [Video – Camera – Imaging Projects](#)
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633.  [TROBOT: A Miniature Articulated Robot using arduino](#) The TROBOT is a miniature six-axis articulated robot, modeled after large industrial & assembly line robots. The prototype versions were developed to be interfaced with ABB's Robot Studio software. Robot Studio was designed to program, simulate, and debug real industrial robots in an offline virtual environment..... Listed under: [Robotics – Automation Project Ideas](#)
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634.  [Jetson/Tutorials/GPIO using arduino](#) Quickly testing a GPIO pin To set pin GPIO_PH1 as an output: sudo su (Enter your user password. Defaults to "ubuntu") # See which pins are currently configured as GPIO, and what their state is. cat /sys/kernel/debug/gpio # Validate that the entry for the Tegra..... Listed under: [Other Project Ideas](#)
-
635.  [Arduino + LEDs + fan = POV "APPLAUSE" sign](#) I saw these POV(Persistence of Vision) devices on other Instructables and thought I would like to make one and I have always wanted my own "APPLAUSE" sign. Next improvement will be to make it go on whenever I enter the room. 😊 Maybe have it..... Listed under: [Robotics – Automation Project Ideas](#)
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636.  [Magic Music Table No menus, no buttons using arduino](#) NOTE: This instructable is now slightly old and a better machine has been made with lower cost parts and much better software that automatically allows you to "pair" new cards with new tracks as they are added to the iPod playlist. iPod playback track selection..... Listed under: [Sound – Audio Project Ideas](#)
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637.  [Using the tymkrs "Turn Me" with an Arduino](#) Here is a quick write up on how to use the tymkrs "Turn Me" rotary encoder. This supports the "push down" feature of the tymkrs kit. Fritzing Rotary Encoder Part: Rotary Encoder with Knob bth.fzpz Fritzing Project: RotaryEncoderDemo.fzz Arduino (1.5) project: RotaryEncoderDemo.ino 1 2 3 4 5 6 7 8..... Listed under: [Sound – Audio Projects](#)
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638.  [Boost Converter Intro with Arduino](#) Let's say that you're trying to drive a few Nixie clock tubes, or you want to make a strobe light. A variable high voltage DC power supply from 50-200+ volts may be required. Transformers are terrific, but difficult to find the right one and a..... Listed under: [PWM Projects](#)
-
639.  [Arduino Circular Cylon!](#) This is a quick arduino project that is great for beginners. Enjoy! There is a video on the last step! Step 1: What you Need To build this project you will need: 10 LEDs, any color will do. Some wire, I used a ribbon cable..... Listed under: [LED Projects](#)
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640.  [Reading pulses from meters with pulse outputs.. using arduino](#) A note on what this document covers The main thing that's being added here to the wealth of information on the internet about pulse counting is how to count pulses from more than two pulse outputs sources (up to 12 sources) using a continuous sampling..... Listed under: [Temperature Measurement Project Ideas](#)
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641.  [Car No. 06 Programmed Automatic Driving Car using arduino](#) Hi! Kaeru no Ojisan is back with Car No.06. Car No.06 is a Programmed Automatic Driving Car with following procedure; - Simulate the Car Trajectory based on the Target Passing Points. - Drive automatically as simulated using Reflective Photosensor and Gyro Sensor . - Adjust..... Listed under: [Car Projects](#)
-
642.  [Interactive skull using arduino](#) I bought this skull to decorate my computer desk. However, analyzing better, I could do something more interesting. I hope you enjoy. Step 1: Materials - A plastic skull - 8 screws; - Microcontroller (I used an Arduino board); - A Protoboard - A nunchuck..... Listed under: [Game – Entertainment Project Ideas](#)
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643.  [Light and obstacle detecting bot using arduino](#) Introduction For our ECSP project we have made a bot that senses and follows light and at the same time avoids obstacles. Rationale We wanted some hands on experience in using microcontrollers and electronics in general . Using a combination of light and distance sensors..... Listed under: [Robotics – Automation Project Ideas](#)
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644. [8 LED Chaser with 74HC595 8 Bit Shift Register using arduino](#) Have you wanted to make a sweet Cylon/Knight Rider (Larson) Scanner effect? But you don't it to use up all of your Arduino IO pins? Well, you can make a nice 8 LED Scanner with a shift register IC. In this tutorial we'll be using..... Listed under: [LED Projects](#)



645. [arduino based distance sensor using arduino](#) Here is a simple tutorial to build a Distance sensor which will show the distance from the distance sensor HC-SR04 (Or any other compatible devices) to the wall or obstacles in front of the sensor in CentiMeters. This project uses a HCR-SR04 distance sensor and..... Listed under: [Temperature Measurement Project Ideas](#)



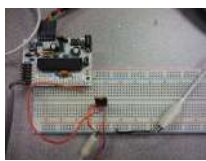
646. [Make A 3D LED Cube Using Arduino](#) The 3D LED Cube is a really cool device that enables you to see in three dimensions, get some depth perception and has 512 LED's or 512 pixels. It is based on an Arduino Uno which is an Atmel AVR microcontroller on a development board..... Listed under: [LED Projects](#)



647. [TiDiGino Contest using arduino](#) The project TiDiGino We developed a new GSM remote control called TiDiGino. The name recalls the initials (TDGxx) of our previous GSM remote control and is also based on the Arduino project. All the details of this circuit can be found below, but no the sketch, because this is your assignment. The contest You have to write..... Listed under: [Wireless Projects](#)



648. [Control Ikea Dioder LED Strip with Arduino + 16X PWM LED Fader Board using arduino](#) We're going to show how to wire up and control an Ikea DIODER LED strip with an arduino, using a 16X PWM LED Fader board as an intermediary. The 16X PWM board is basically a bunch of mosfets under PWM control (switches that turn on..... Listed under: [LED Projects](#)



649. [Secret Knock Final using arduino](#) Secret Knock Description - My final project is a door lock that listens for your personalized knock. The lock uses an arduino board and a piezo speaker and will not unlock the door unless the specific pattern is used as a knock. Arduino Program -..... Listed under: [Home Automation Projects](#), [Security – Safety Project Ideas](#)



650. [Thermocouple Sensor 1.0 using arduino](#) Overview Jump to the Table of Contents This is a simple board for measuring temperature. It uses an AD595 chip to make thermocouple measurements easy. The AD595 amplifies the thermocouple signal and conditions it for easy use. Thermocouples are great due to their linearity over..... Listed under: [Temperature Measurement Project Ideas](#)



651. [Display Live Txts on Costume at Party w/ Scrolling LED Belt Buckle using arduino](#) This project shows how to send SMS text messages to a cheap scrolling LED display via an Android app and arduino with USB host shield. The project was originally inspired by a friend wanting to make a "sexting themed" costume, with a scrolling LED display..... Listed under: [LED Projects](#)



652. [Arduino: measuring the Earth's magnetic field with the magnetometer HMC5883L using arduino](#) The HMC5883L magnetometer This component (a small chip) HMC5883L, produced by Honeywell, bases its operation on AMR (Anisotropic Magnetoresistive) technology and allows you to be able to measure both the direction and the magnitude of the earth's magnetic field. This magnetometer HMC5883L has within 3 magneto-resistive..... Listed under: [Temperature Measurement Project Ideas](#)



653. [Nunchuk-controlled Helicopter using arduino](#) Welcome to my 3rd Instructable everyone ! Today we're going to build a 'device' to control a mini-sized helicopter with a Wii Nunchuk. The helicopter that we're using is a cheap (26\$) 3-channel (yaw, throttle, pitch) helicopter that I bought a 1 month back from..... Listed under: [Game – Entertainment Project Ideas](#)



654. [Surfin' Bird \(Arduino Style\) using arduino](#) I just hope every body's heard. The Bird is the Word! This is a simple device to play Surfin Bird really loudly when someone trips off the motion sensor. If you don't already own an Adafruit Wave Shield, I'd highly suggest purchasing one. It's become..... Listed under: [Game – Entertainment Project Ideas](#)



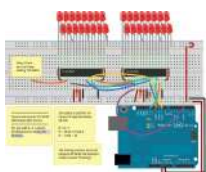
655. [Voice Recognition System using arduino](#) Contents 1 Team Members 2 Mentor 3 Concept 4 Softwares Used 5 circuits 5.1 Pre Amp circuit 5.1.1 Circuit Diagram 5.1.2 Working 5.2 EEPROM circuit 5.3 Led Matrix display circuit 6 Algorithm for silence & noise removal 6.1 Pre-Emphasis 6.2 Silence and Noise Removal 6.2.1..... Listed under: [Sound – Audio Projects](#)



656. [Arduino powered Haunted Pumpkin using arduino](#) This is a cute little project that takes a pumpkin, motion sensor, and some parts from Radio Shack. It was fun to create and build. This project was sponsored by the Radio Shack Great Create and I was able to make the whole thing with..... Listed under: [Game – Entertainment Project Ideas](#)



657. [A Makers Wedding – Photo booth usnig arduino](#) This Instructable is about: building an automated photo booth. The total build cost was around \$150 as I re-used a lot of the components and materials I already had in my garage - in addition to what I could salvage from scrap yards. Why? -..... Listed under: [Video – Camera – Imaging Projects](#)



658. [Extending PWM output pins with a Texas Instruments TLC5940 LED driver using arduino](#) Introduction Microcontrollers like the Arduino were designed to facilitate the use of electronics for designers and DIY enthusiasts. The interface provides a great starting points for a variety of electronic circuit designs. However, as the microcontroller is standardized, it is also limited in its use..... Listed under: [PWM Projects](#)

659. [LASER Maze – Halloween Haunted House using arduino](#) The LASER Maze was our Processing and Arduino powered garage haunted house for 2011. A monitor sits outside of the garage, displaying "PRESS START." After the button is pressed, an intro video plays that instructs you to dodge the lasers and get your candy in..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)



660. [Human Body Infrared Smoke Temperature Alarm System with Arduino](#) Web site: <http://www.instructables.com/id/Human-Body-Infrared-Smoke-Temperature-Alarm-System/> Project Summary: The Human Body Infrared Smoke Temperature Alarm System works under the DC 5v voltage and uses the DH11 Temperature Module to detect the room temperature. When the module detects the temperature is higher than the maximum, the buzzer alarms and..... Listed under: [Security – Safety Projects](#)



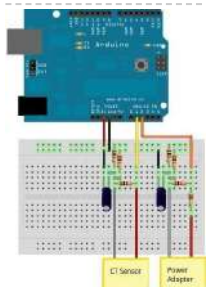
661. [Doorbell to Arduino 'Interface'](#) Hi Everybody In my first Instructable I want to show you how to build an cheap and easy Doorbell to Arduino 'Interface' so you can let your Arduino project get triggered through it or simply use your Arduino as a bell. Almost endless possibilities 😊 Step..... Listed under: [Home Automation Project Ideas](#)



662. [1RE45 Non contact digital thermometer using arduino](#) Contents 1 Introduction 2 Components Used 3 Description 4 Idea 5 Plan Of Action 6 1st week: 7 2nd week: 8 3rd week: 9 4th week 10 5th week 11 Expenses(In Rupees) 12 Videos, Photos 13 Code 14 Team Members 15 Resources: Introduction Temperature is..... Listed under: [Temperature Measurement Projects](#)



663. [SPROT, my SimPleROboT using arduino](#) in this instructable i will show you how to make a very simple robot, using an arduino. this robot could be the base for a wide range of projects, i am planning on adding LDRs to mine so it can seek put light and also..... Listed under: [Robotics – Automation Project Ideas](#)



664. [How to build an Arduino energy monitor – measuring mains voltage and current arduino](#) Including voltage measurement via AC-AC voltage adapter and current measurement via a CT sensor. This guide details how to build a simple electricity energy monitor on that can be used to measure how much electrical energy you use in your home. It measures voltage with..... Listed under: [How To – DIY – Projects](#), [Temperature Measurement Project Ideas](#)



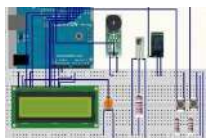
665. [VOICE CONTROL CAR USING ARDUINO AND ANDROID](#) Hello friends,Welcome to ElectroPLUS . This is a post to show how to make voice control car using arduino and android. COMPONENTS REQUIRED: 1.Arduino uno or Induino R3 board. Hello friends,Welcome to ElectroPLUS . This is a post to show how to make voice control..... Listed under: [Car Projects](#), [Sound – Audio Projects](#)



666. [Build a Laser 3D Printer – Stereolithography at Home using arduino](#) Here is how to make a Stereolithography 3D Printer. It is still a bit of a work in progress but so far it is working pretty well. This is mainly an experiment which started as a Delta Robot Stereolithography Printer but ended as a more..... Listed under: [CNC Machines Project Ideas](#)



667. [A new board for the 3Drag: there's more than Sanguinololu using arduino](#) When we first released our 3D printer, we tried to use some parts that were already available and tested, in full respect of the open source philosophy. In particular, we decided to use the electronic card Sanguinololu. The "open" firmware we chose, the Marlin firmware..... Listed under: [Blog](#), [Motor Projects](#)



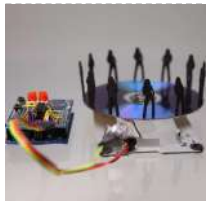
668. [Temperature Detecting Heating Control System with Arduino Mega2560](#) Web site: http://www.icstation.com/product_info.php?products_id=3517 Project Summary: To help electronic DIY hobbyists, will show you how to use Temperature Detecting Heating Control System with Arduino Mega2560. Full Project: The temperature detecting heating control system works with DC5V voltage. This system uses DS18B20 temperature detection chip as the..... Listed under: [Temperature Measurement Projects](#)



669. [RoboBrrd Using Arduino](#) RoboBrrd is an robot / animatronic character whose purpose morphs to mirror that of the virtual world. It is designed to be used as a tangible real world interface to virtual world learning applications. As a standalone robot, RoboBrrd is an entertaining platform that can..... Listed under: [Game – Entertainment Project Ideas](#)

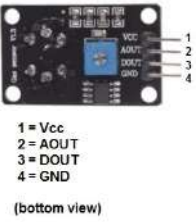
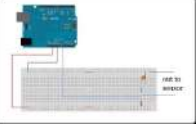
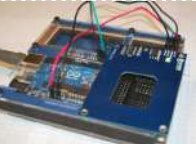


670. [Camera and flash trigger module using arduino](#) Here we go again, here is a picture of the camera and flash trigger module I made for my arduino photographic projects: It includes three 4N26 optocouplers. One (first one from the left side) to trigger a flash, as I did in the arduino controlled..... Listed under: [Video – Camera – Imaging Projects](#)

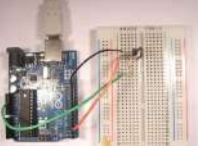


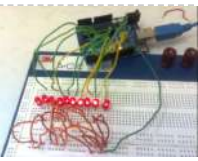
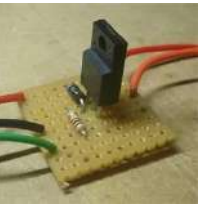
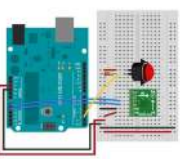
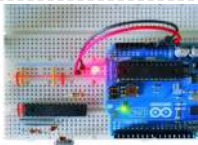
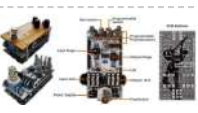
671. [Stroboscope \(zoetrope\) using Arduino and a broken Xbox 360 DVD drive using arduino](#) Stroboscope (AKA zoetrope) is a device that creates an illusion of a moving picture by showing a rapid successions of frames "stopped" for a fraction of a second due to the persistence-of-vision (POV) effect. It is a very old toy; zoetropes have been amusing crowds..... Listed under: [Game – Entertainment Project Ideas](#)

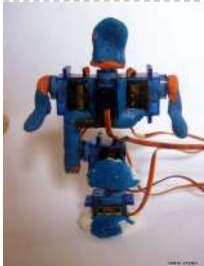


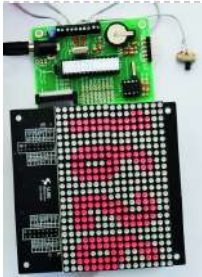
673.  In this project, we will go over how to build a hydrogen gas sensor circuit with an arduino. The hydrogen gas sensor we will use is the MQ-8 sensor. This is a sensor that is sensitive to effects of hydrogen gas. Hydrogen gas (H2), at..... Listed under: [Sensor – Transducer – Detector Projects](#)
674.  Simple Solar Power Light contains energy. When light hits a conductor (or semiconductor) some of the energy is translated into moving electrons, creating current. We can harness the current using solar cells (aka photovoltaic cells). When the sun shines on a solar cell, the current..... Listed under: [Battery Projects](#)
675.  You always wanted to be a Disc-Jockey. You know nothing about beats, delays or mixing but, damn, scratching is like the coolest thing ever invented! If this is also your case, follow this instructable to build a low-fi DJ set: the DIY Turntable as featured..... Listed under: [Sound – Audio Project Ideas](#)
676.  Using the Arduino development board (<http://arduino.cc>) has become a very popular way to create hardware prototypes that bridge the divide between the physical world and the Internet. This article outlines how to use an Arduino, some off-the-shelf electronic parts, the Processing programming language, and Google..... Listed under: [Internet – Ethernet – LAN Projects](#)
677.  For Maker Faire Detroit 2011, I displayed a hack I made to a FurReal Friends Butterscotch Pony. My fellow LVL1 Hackers and I had taken control of the motor control system of the toy and added a flame thrower to it. It seemed to go..... Listed under: [Robotics – Automation Project Ideas](#)
678.  We present the candidature of Mr. Michele Mancini for the TiDiGino Contest. He proposes us a recent application with Arduino: Real-Time Energy Monitor This is a simple power meter to analyze the current consuming in a house using the led indicator of a house energy..... Listed under: [Temperature Measurement Project Ideas](#)
679.  I am going to show you how you can use an RGB LED and a Cds photocell as a colour sensor for a micro-controller. I will illustrate the method to retrieve a colour using Arduino, and I will show you a how you can verify the..... Listed under: [LED Projects](#)
680.  Well I managed to kill my Arduino. It no longer accepted uploads with the classic out of sync error. After asking on the Arduino forum I was told I would need a high voltage programmer to rectify, so I decided just to buy a new..... Listed under: [Development Board – Kits Projects](#)
681.  Research Group: Ryan Mountcastle, Minh Trang Nguyen, Nathan Ranno, and Ryan Ward Launch: Whitworth Fall 2012 This experiment was designed to examine cosmic ray activity in the Earth's atmosphere as altitude increases. The previous group's project utilized three Geiger counters stacked vertically to eliminate false..... Listed under: [Other Projects](#)
682.  f you've ever wanted the ability to use some form of hardware-based authentication in your projects then this is the board to do it with. The Parallax RFID (Radio Frequency Identification) reader is super easy to configure. It only takes four wires! It uses serial..... Listed under: [Projects](#), [RFID - NFC projects](#)
683.  This was a behemoth of a project involving an inflatable costume, a LED costume, and a glove that controlled the colors and patterns of the LEDs. I've been wanting to make an inflatable creature that would give birth to me for a while now (lots..... Listed under: [Game – Entertainment Project Ideas](#)
684.  The resolvent of clock synchronization over internet. by PKJ, The web-based clock management system allows you to monitor clock status from wherever they are and centrally change settings. and this small device is built with PoE technology, thus IP clocks get their time, data and power..... Listed under: [Clock – Timer Projects](#), [Internet – Ethernet – LAN Projects](#)
685.  128X160 pixels in 18 bit color with a microSD breakout board courtesy of Adafruit Industries You can purchase the 18-bit color TFT LCD display with microSD card breakout kit (part# ST7735R) from Adafruit Industries This tutorial from Adafruit is for a 1.8" diagonal TFT display..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [LCD Projects](#)
686.  Update (6/7/2012) – I've had to disable comments on this post, because it is being targeted by spam bots for some reason. Please use the contact page if you have a question about this topic. [box type="note" color=" #202020 " bg=" #ffbb00 " font="verdana" fontsize="14" radius="20..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)
687.  Many of you have probably seen the Awesome button done by Matt Richardson of Make Magazine. If not here is his video which was very well done and was the inspiration of my project. I liked the idea of having a button to press for..... Listed under: [LED Projects](#)
688.  Protect your secret hideout from intruders with a lock that will only open when it hears the secret knock. This started out as a bit of a joke project, but turned out to be surprisingly accurate at judging knocks. If the precision is turned all..... Listed under: [Home Automation Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)
689. [The Soil Temperature Sensor using arduino](#) You are building a soil temperature sensor. We need a waterproof thermometer that we can bury in the soil. T sensor is made up of a small circuit enclosed in a piece of heat shrink (to waterproof it). Supplies: (see the parts page) an LM335..... Listed under: [Home Automation Projects](#), [Temperature Measurement Projects](#)



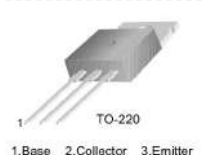
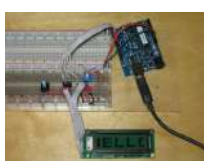
690.  [Make An Arduino RFID Card Reading](#) Finally! It's been about 3 months since my last Arduino tutorial – I've been keeping busy as usual. I've been working on this one for some time. I got the parts months ago, made an outline a few weeks ago, prototyped the circuits and wrote..... Listed under: [Projects](#), [RFID - NFC projects](#)
691.  [Arduino – One Wire Digital Temperature Sensor – DS18B20](#) The one wire Digital Temperature Sensor - DS18B20 from Maxim (formerly Dallas) is a great chip for measuring temperature in your projects. Luckily, there is a Dallas Temperature library for the arduino which makes using this sensor very easy. The most recent version of this..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#), [Temperature Measurement Projects](#)
692.  [Traffic Light Stoplight LED Scarf – Safety Scarf of Righteousness using arduino](#) Multipurpose like a traffic light, this one keeps you warm and blinks to make you more visible in the night. Stop traffic with this fun scarf worn around your neck. Repurpose a dollar-store bicycle safety flasher to embed in the scarf. Simulates the light changing..... Listed under: [LED Projects](#)
693.  [Soldering an SMT MOSFET Driver with a hotplate](#) Soldering SMD components isn't as hard as you might think. In fact it's easy. If you follow this instructables you'll soon see just what great results you can obtain at home using just a hotplate. It's not just being able to make small circuit boards..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#)
694.  [Wendell the Robot using arduino](#) What follows is my proposed design for a robot. A robot with a simple design, that is easy to share and change. A robot you can build with a hand saw or a laser cutter; from cardboard or karbonite. A robot you can share; and change..... Listed under: [Robotics – Automation Project Ideas](#)
695.  [Arduino + Compass Module 3-Axis HMC5883L](#) Background In this blogpost we're going to deal with the Compass Module 3-Axis HMC5883L from Parallax and how to integrate it into an Arduino. The Compass Module 3-Axis HMC5883L is designed for low-field magnetic sensing with a digital interface. This compact sensor fits into small..... Listed under: [CNC Machines Project Ideas](#), [Robotics – Automation Project Ideas](#)
696.  [3D AIR mouse | Arduino + Processing](#) 3D AIR mouse | Arduino + Processing I'm an Industrial design student, and last year as part of a course called "Technology as RAW materiel" I built this project as my final work. I work most of the time with SolidWorks, a CAD software for..... Listed under: [Arduino Programmer Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)
697.  [Arduino Chiptunes usnig arduino](#) I am not a big fan of programming. I may like it but, I try to keep it down to a 555 timer like in this ible. However, when it comes to synths, well, I just NEED programming. One day, while exploring Synthesizers, I came..... Listed under: [Sound – Audio Project Ideas](#)
698.  [LilyPad Arduino – the wearable technology using arduino](#) Introduzione LilyPad Arduino is one of the many Arduino microcontrollers, but unlike the more well-known Arduino UNO, MEGA and Yun, this little board has very specific characteristics that make it unique. In fact, the LilyPad can be sewn on fabric. In fact, with only 19..... Listed under: [Medical – Health based Project Ideas](#)
699.  [Make A Twitter Poem Box Using Arduino](#) This is a project that was inspired by Marc de Vinck's Kitty Twitty Cat Toy <http://makezine.com/22/kittytwitty/> . It incorporates an RFID reader and the BlinkM, a programmable RGB LED. The lamp tweets random colored poems when it detects one of the three RFID cards which..... Listed under: [Internet – Ethernet – LAN Projects](#)
700.  [Smart Relay Power Box\(SiriProxy Compatible\)](#) If you have ever wanted to control high voltages/currents with an Arduino, setup up a complicated light timer, or even have Siri turn on a Lamp. Then this is an instructable for you! In this instructable in a few simple steps we will build a self-powered..... Listed under: [Development Board – Kits Project Ideas](#)
701.  [BennyP's Light Contraption using arduino](#) Introduction Disclaimer: I am not an expert in any of this. There is lots of information online regarding such designs. Although this setup worked for me, do not trust any of my calculations. Please work all this out for yourself and consult many other sources,..... Listed under: [Home Automation Project Ideas](#), [PWM Projects](#)
702.  [ST7565 LCDs: Graphical LCDs](#) What it is... Type: Graphical (128x64) monochrome LCD with LED backlight Interface: Serial / SPI This is a good time to read the datasheet Available from: Adafruit, of course! Introduction: This mini-tutorial will go through the process of setting up a ST7565 LCD. These LCDs..... Listed under: [LCD Projects](#)
703.  [Standalone Arduino chip on breadboard](#) If you're like me, after I got my Arduino and performed a final programming on my first chip, I wanted to pull it off my Arduino Duemilanove and put it on my own circuit. This would also free up my Arduino for future projects. The problem..... Listed under: [Development Board – Kits Projects](#), [Projects](#)
704.  [USB Biofeedback Game Controller using arduino](#) Building upon our last tutorial, which taught you how to build a muscle sensor, we've decided to give you a project that really showcases the power of our muscle (EMG) sensors. Advancer Technologies' "USB Biofeedback Game Controller" harnesses the power of electromyography to allow players to..... Listed under: [Game – Entertainment Project Ideas](#)

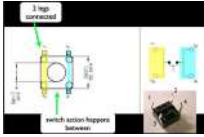
705.  [CT sensors – Interfacing with an Arduino](#) To connect up a CT sensor to an Arduino, the output signal from the CT sensor needs to be conditioned so that it meets the input requirements of the Arduino analog inputs: a positive voltage between 0V and the ADC reference voltage. Note: This page give the..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)
706.  [Making 1×10 LED Array with Random Patterns](#) This will teach you how to make a very simple 1x10 array of LEDs on a breadboard controlled by an Arduino Uno to make the LEDs blink and flash in 10 different patterns. Link to notebook for project: <https://docs.google.com/document/d/1YP4p11SbDNOmM7mDn-sRjLnxGPj6o0DkrFZnznVMvk/edit> Link to YouTube video of LEDs..... Listed under: [LED Projects](#)
707.  [The party starter using arduino](#) A desktop motorized musical disco ball. Great for holiday parties, impromptu dance-offs, and Tuesday afternoons. Bling, Music, Arduino, and glitter covered styrofoam; this Instructable has got what you need to get your boogie on. Fires need help go get going, so do parties. I recently..... Listed under: [Game – Entertainment Project Ideas](#)
708.  [Controllers and Sensors using arduino](#) John has been working to recover components from old power supplies and available trash electronics, in order to build controllers to power stepper motors and other mechanisms for the FabLab. Intro The Arduino microcontroller board is able to supply a current of 40mA from its..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)
709.  [Arduino lets you play Atari 2600 and ZX Spectrum using a NES controller](#) This instructable shows you how to use NES controller in Atari 2600 or ZX Spectrum (with Kempston Interface) with the aid of an Arduino. Step 1: Background talk I have recently acquired a couple of Atari 2600s and a bunch of joysticks. Both consoles were working..... Listed under: [Game – Entertainment Projects](#), [Projects](#)
710.  [Serial Duplex using an Arduino](#) Overview In the first serial lab, you sent data from one sensor to a personal computer. In this lab, you'll send data from multiple sensors to a program on a personal computer. You'll use the data from the sensors to create a pointing-and-selecting device (i.e..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)
711.  [Yet Another Arduino 110v Power Controller](#) This Instructable shows you how to build a four-gang outlet box in which each outlet is controlled via an Arduino (or any other TTL level signals). It differs from the other relay boxes in that it uses no circuit boards and has very few parts (one..... Listed under: [Projects](#), [Solar energy projects](#)
712.  [Sensing color with the ADJD-S371 + Arduino](#) About 2 years ago I picked up a ADJD-S371 color sensor from Sparkfun to work with my arduino. I spent a few days getting it to work, but finally got it going pretty well. I still get a few emails here and there asking for..... Listed under: [How To – DIY – Project Ideas](#), [Sensor – Transducer – Detector Project Ideas](#)
713.  [Displaying Twitter feed without a PC! using Arduino](#) There are a lot of Twitter feed readers around the Web that use Arduino AND a PC to display twits on LCD displays or whatsoever. Then, I decide it was the time to design a solution for performing the same job WITHOUT A PC, and..... Listed under: [Internet – Ethernet – LAN Projects](#), [LCD Projects](#)
714.  [Geiger counter triggered LED decorations using arduino](#) Bored of blinky lights that blink in response to time? Make them blink with space instead! This instructable shows a quick method for connecting LED tree decorations to a Geiger counter via arduino, so that the lights blink between different strings each time radiation is..... Listed under: [LED Projects](#)
715.  [Arduino ISP \(In System Programming\) and stand-alone circuits](#) We use an Arduino to program other ATmega without bootloader . This technique allows you to use all flash memory for code and make boards using new ATmega, cheaper than those with bootloader. The qualities that have made the success of Arduino are undoubtedly the open-source..... Listed under: [Arduino Programmer Projects](#)
716.  [Introducing PETBOT: A node.js Telepresence Robot using arduino](#) It's a telepresence robot I built for our office, consisting of an iPad mounted on a lightweight chassis powered by an RC car. To operate it, you open up a video chat session with the iPad, then control the robot from your browser using the..... Listed under: [Robotics – Automation Project Ideas](#)
717.  [Digispark RGB LED Fader](#) Forward: This instructable was originally posted at <http://www.instructables.com/id/How-to-make-LED-Fader-using-Digispark/> My students and I developed it into this exemplar, for which they received a very good mark. Viewing the following video may leave you with a sense of too much too fast. Please continue to read this..... Listed under: [LED Projects](#)
718.  [Rocket Brand Studios Medium Tank using arduino](#) This is the assembly instructions for the Medium Tank from Rocket Brand Studios. This is a great little robot kit, and can be purchased as a complete kit or as a rolling chassis, ready for the micro controller of your choice --Arudino Uno, Duemilanove, Picaxe..... Listed under: [Robotics – Automation Project Ideas](#)
719.  [pedalSHIELD Arduino Guitar Pedal](#) Web site: <http://www.electrosmash.com/pedalshield> Project Summary: pedalSHIELD is a programmable Arduino Open Source & Open Hardware guitar pedal made for guitarists, hackers and programmers. Users can program and share their own effects in C/C++. Full Project: pedalSHIELD is a programmable Arduino guitar pedal. It is Open..... Listed under: [Sound – Audio Projects](#)

720.  [World's Smallest Stepper Motor with Arduino and EasyDriver](#) This little wonder of electromechanical engineering came from inside a laser diode sled of an HP CT10L Bluray drive I've opened some time ago. The device on the picture consists of several parts, all easily fitting on a dime coin: a bipolar stepper motor with..... Listed under: [Motor Projects](#)
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721.  [Telemetry with solar cell using an Arduino](#) *NOTE* THIS PROJECT IS DONE BY A GROUP OF STUDENTS FROM SINGAPORE POLYTECHNIC. Telemetry - Solar Cells Our project is using Arduino with the ZigBee to transmit and receive data from the solar cell. Data will be shown in the LCD and the software called..... Listed under: [Battery Projects](#), [Metering – Instrument Projects](#), [Projects](#), [Solar energy projects](#)
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722.  [LED Gingerbread house using arduino](#) Last year my Wife and I started a new tradition of building a Gingerbread house for Christmas. We had a few nicely decorated houses last year, and I wanted to do a little more this year. Adding LEDs makes everything better, so that is exactly..... Listed under: [Home Automation Project Ideas](#)
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723.  [An I²C Bus powered Arduino IO Expander Board controlled via Bluetooth and Android](#) Today we'll expand Arduino's digital resources thanks to an I2C bus equipped shield and we'll allow the management of the board via a bluetooth connection RN-42 through an Android systems. All Arduino boards feature a number of digital I/Os. For the simplest projects, such resources..... Listed under: [How To – DIY – Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)
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724.  [Linking an Arduino to a Radiometrix NTX2B Transmitter](#) Part 1 - Test Circuit and Test Code Introduction Getting your Arduino to transmit via the radio initially may seem daunting but its actually pretty simple. Please freely substitute the word "Arduino" for any micro-controller you wish to use. The example below works for 5V..... Listed under: [Wireless Projects](#)
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725.  [Extreme Color Organ using arduino](#) Hi All! I have wanted to do something fun with my bedroom for a while now and the Make it Glow challenge provided me with a reason to do so. A few months ago I acquired a strand of GE-35 Color Effects lights and owing..... Listed under: [Home Automation Project Ideas](#)
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726.  [Solar USB Charger 2.0](#) Everyone has USB gadgets. It's pretty much a fact of life. Another fact of life is that these USB gadgets also continually run out of power when you most need them. No need to fear, solar power is here! Ditch those crazy wall adaptors, throw..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Solar energy projects](#)
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727.  [Make A 0 to 99 Light Display Using Arduino](#) This circuit will take a light reading then display a number between zero and 99. Step 1: Parts you will need Major Components in Project To make the 0-99 LED display you will need... ~ photo resister ~ Arduino ~ 9 different wires ~ 2..... Listed under: [LED Projects](#)
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728.  [PS/2/You: Go-anywhere, LED digital message board using Arduino microcontroller](#) Combine three inexpensive LED matrix display panels, an Ardweeny microcontroller and a standard PS/2 computer keyboard into your own go-anywhere, instantly updatable 768-pixel digital message board. The code can hold up to six lines of text with a maximum of 100 characters each. Pressing a..... Listed under: [LED Projects](#)
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729.  [Solar Tracker Relay circuit using Arduino](#) I've reached the point where I need to think how I'm going to control the motor & linear actuator for my solar tracker. Things to consider - Must be able to go forwards and backwards - so that makes 4 channels, 2 for each motor..... Listed under: [How To – DIY – Projects](#)
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730.  [BARC Jeep – An XBOX Controlled Power Wheels](#) Make a power wheels jeep that is controlled by an XBOX controller. This particular build is using Power Wheels® Jeep® Hurricane with Monster Traction™ but should be usable across many different types of power wheels with small adjustments. I wanted to do this project so I could..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#)
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731.  [Nick Smith – Magical Music Box using arduino](#) This is my Magical Music Box which converts music into a light show. When i was daydreaming what to make for my final project, i wanted something that would make a light show for any song simply by hearing it. Materials used: 1x arduino 8x..... Listed under: [Game – Entertainment Projects](#)
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732.  [Interactive LED Lab Coat using Arduino](#) This is an instructable for the Interactive LED Lab Coats, showcased at Autodesk University. Check out the videos below! The first is a demo of the colors actuated by the buttons. The second is a demo of the breathalyzer! (this will be explained later) Tools Listed under: [Home Automation Projects](#), [LED Projects](#), [Projects](#)
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733.  [Sugru + Servos = Robot using arduino](#) Build a robot using a bag of Sugru and 5 mini-servo motors. Motivation: Build a robot using very few parts and very cheap servo motors. Steps: Parts list Build Wire Program Play! Outcomes of this project: Robot with 5 joints Arduino Code which is expandable Control..... Listed under: [Robotics – Automation Project Ideas](#)
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734.  [Sleep Tracking using an Arduino](#) Background and motivation This project was motivated by two things: my almost complete inability to get out of bed in the morning, and my fondness for recording data from routine activities and making graphs with that data. My main problem with waking up in the..... Listed under: [Home Automation Projects](#), [Metering – Instrument Projects](#), [Projects](#)
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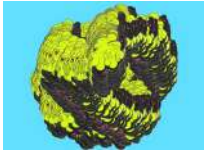
735.  [\[Said Alyami\] – \[Funny Cartoon Sounds with a twist\] arduino](#) Introduction My project is about providing multiple saved cartoon sounds then do funny effect on them through controlling the speed of play either faster or slower. it contains 4 sound files: Crazy Frog, Bird is the Word "by Family Guy", oompa loompa "by Willy..... Listed under: [Game – Entertainment Project Ideas](#)
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736.  [How to convert \(almost\) any 27 or 49 MHz RC Car into a Robotic car using arduino controller](#) I am teaching a robotics course in my kids high school (Rambam Mesivta in Lawrence, NY). I was looking for a cost effective way to teach them about the principles of robotics without spending an arm and a leg, and getting them excited about the..... Listed under: [Robotics – Automation Project Ideas](#)
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737.  [\[OoB\] Shooting paintball maker with relay, Arduino and .NET WinForms](#) [OoB] Shooting paintball maker with relay, Arduino and .NET WinForms My first Arduino based project was Sonar with C#, JS and HTML5. Now I continue the "Out of Boredom" series with a setup that allows firing a paintball marker (gun) with a command sent from..... Listed under: [Game – Entertainment Project Ideas](#)
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738.  [Arduino Controlled RGB LED Dot Matrix Board](#) This project is a relatively straightforward and simple DIY music board. The Dot Matrix Board will allow any aged person to create their own music and beats. All you need to have is an understanding of Arduino and circuitry. Step 1: Gather Parts Needed [box..... Listed under: [LED Projects](#)
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739.  [5x5 rgb lpd6803-led matrix arduino controlled](#) what: a 5*5 rgb led matrix, made with arduino and lpd6803 based leds from adafruit. with an pir sensor, it goes on if it detects movements and a ir distance sensor, 1 animation shows the distance you have from the sensor :). why: because its..... Listed under: [LED Projects](#), [Projects](#)
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740.  [Self-contained 16-Digit display – Arduino & Attiny85](#) Ever wanted a 7-segment display for around the house? Here's your chance to make one! It can even be interactive based on the programming.Parts: (\$7.60) 16 Digit TM1640 based display Dealextreme.com SKU: 104311 <http://www.dealextreme.com/p/jy-mcu-16x-digital-tube-yellow-led-module-104311> (\$2.50) Atmel ATtiny85 Digikey PN: ATTINY85-20PU-ND(\$1.73) Extra long female header pins..... Listed under: [Home Automation Project Ideas](#)
-
741.  [An Open Source, hackable Digital Clock](#) Andrew O'Malley, an amazingly creative maker, created this fantastic Open Source Arduino-based clock that can display the time in many different ways: if not enough, one can also add his own personal animation. Compared to other clocks based on Arduino, this one has two distinctive..... Listed under: [Clock – Timer Projects](#)
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742.  [Tiny Wearable LED kit – 12 PWM LEDs from a reprogrammable ATtiny85](#) This instructable covers the assembly and use of a Tiny Wearable LED kit. The kit is useable immediately but is designed to be hackable and can be reprogrammed to your liking using an ISP programmer or Arduino board and the Arduino IDE. There are not..... Listed under: [LED Projects](#), [Projects](#), [PWM Projects](#)
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743.  [Infinity Mirror – Tony Stark Arc-Reactor thing using arduino](#) I'm creating a robot, but am finding that it's better if I break the build down into smaller projects. This is one of those projects, and it seems to have a look that could be used for other things as well. Step 1: Destroy a lady's..... Listed under: [Battery Projects](#)
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744.  [Ultraviolet nightlight, ingredients and setup](#) This simple instructable will show you how to make a nightlight out of a translucent container, a bottle of tonic water, an Arduino, and ultraviolet LEDs. If you've ever played with a black light, you've noticed that some substances glow brightly under these lights. In..... Listed under: [LED Projects](#)
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745.  [Rocket Brand Studios Tiny Tank using arduino](#) This is the assembly instructions for the Tiny Tank from Rocket Brand Studios. This is a great little robot kit, and can be purchased as a complete kit or as a rolling chassis, ready for the micro controller of your choice --Arudino Uno, Duemilanove and..... Listed under: [Robotics – Automation Project Ideas](#)
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746.  [LCD & Keypad Shield Quickstart Guide using arduino](#) The 16x2 LCD And Keypad Shield is very simple to use because it's fully compatible with the Arduino "LiquidCrystal" library. You can initialise the LCD and display messages on it with just a few lines of code, but it also gives you the flexibility to..... Listed under: [LCD Projects](#)
-
747.  [Arduino Esplora Light Calibrator](#) This sketch shows you how to read and calibrate the Esplora's light sensor. Because light levels vary from one location to another, you need to calibrate the sensor for each location. To do this, you read the sensor for a few seconds, and save the..... Listed under: [Development Board – Kits Project Ideas](#), [LED Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)
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748.  [MultiMovEDIA](#) The title "MultiMovEDIA" does not mean much – if anything – at first sight. However, looking at more carefully, we can see it is a composition of two words: "Multimedia", referring to the information content and the channels it uses (text, image, sound), and "Move",..... Listed under: [Sound – Audio Projects](#)
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749. [\[Team PGH\] – Prototype I Final Report: \[Motion RC Car\] using arduino](#) Introduction: Give a brief description of what you are trying to solve. Include a high-level overview of what you made, why you made it, what parts you used, and what it does. In today's growing technology, it seems every little electronic is becoming touch or motion sensed..... Listed under: [Car Projects](#)



750.  [The IKEA Robot Lamp using arduino](#) Welcome to the SM-1 project from ArduinoArts.com! (A.K.A as the Annoying IKEA Lamp) We are proud to introduce you to the SM-1 project (aka the Annoying IKEA lamp), as part of the Toy hacking contest from the SseedStudio.com friends. The project consists in modifying an..... Listed under: [Robotics – Automation Project Ideas](#)
751.  [Single Digit Decimal counter using Arduino](#) “Hello world”,I am not going to start this blog with typical “Hello world” program,since lot of resources already covered Arduino way of telling “hello world”,that is Blinking a LED. This project is absolutely for beginners who prefers to run than taking a walk,I am going..... Listed under: [Clock – Timer Project Ideas](#)
752.  [Python Meets the Arduino](#) Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software. Python is our favorite programming language that allows you to integrate systems more effectively. Learn how to use Python to ... Listed under: [Internet – Ethernet – LAN Projects, Projects](#)
753.  [Alarm Clock with Tetris to Prove You’re Awake using Arduino](#) This is an Arduino powered alarm clock that after hitting snooze twice the alarm will not cancel until the user has cleared 4 lines in the game Tetris. You physically turn the clock sideways, so the screen is vertical, to play Tetris. It's never fun..... Listed under: [Clock – Timer Projects, Home Automation Projects, Projects](#)
754.  [Using a transistor to control high current loads with an Arduino](#) In this tutorial, you'll learn how to control a high-current DC load such as a DC motor or an incandescent light from a microcontroller. (:toc Table of Contents:) Connect a transistor to the microcontroller The transistor allows you to control a circuit that's carrying higher..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)
755.  [Wireless Glove-Controlled Electric Mountainboard: An Analysis](#) Hey guys! So I finally decided to make a page that has everything you could possibly know about my project. Even though I had previously answered everyone's questions, they were usually through a message. Because of that, I was usually asked the same questions and..... Listed under: [Radio Project Ideas](#)
756.  [IR Harp using arduino](#) Contents 1 Team Members 2 Mentor 3 Introduction 4 Components Used 5 Idea 6 Arduino Uno Board (ATMega328P) 7 Approach to Project 8 Sound Synthesis 8.1 Delay() 8.2 Interrupts 8.3 The nature of the periodic waveform 8.4 The nature of the amplitude envelope 9 Working..... Listed under: [Home Automation Project Ideas, Security – Safety Project Ideas](#)
757.  [Arduino Mobile Processing](#) How the mobile sketch works: The brain of the system is really on the arduino or the web page the phone requests. . . The phone just passes any data it sees back and forth. . . For the phone app to run, it needs..... Listed under: [Phone Projects](#)
758.  [Bleeber – A physical layer between data and action. using arduino](#) This project is a contribution to the first belgian Arduino Jam (2012). First of all we would like to thank the organisation and especially the main sponsor, Capgemini, which made all of this possible. Bleeber is a physical way of interacting with data trough oobleck. In..... Listed under: [Development Board – Kits Project Ideas](#)
759.  [Build An Lego Spybotics With Arduino](#) A friend gave me his old Lego Spybotics robot, however, the programming environment that goes along with it is a bit too orientated to the younger user. So why not control it using an Arduino? Step 1: Open up! In order to get this robot..... Listed under: [Home Automation Projects, Robotics – Automation Projects](#)
760.  [Arduino animatronics- make your awesome costumes more awesome](#) Here's how to add lights, sound and action to your favorite Halloween project using the open source Arduino microcontroller. Arduino is easy to learn to use and it opens up a whole new world for costume builders and creature creators. If you want to learn..... Listed under: [Game – Entertainment Projects, Projects](#)
761.  [Custom Large Font For 16x2 LCDs using arduino](#) A couple of years ago i was learning to use the Ardiuno and started playing around with an Hitachi HD44780 based 16x2 LCD screen. I soon learned that the screen has 8 customizable character slots. I had found a project where someone used those slots..... Listed under: [LCD Projects](#)
762.  [General Instruments SP0256-AL2 English Phoneme Speech chip & an Arduino](#) The GI SP0256 chip is an early 1980s bit of technology. It's a 5V (to 7V) NMOS chip which is compatible enough with the 5V TTL circuitry common in that era. 5V TTL disappeared for a while, then came back with the Atmel _28-based Arduino..... Listed under: [Home Automation Project Ideas, Sound – Audio Project Ideas](#)
763.  [CARduino – Arduino-Powered, LabVIEW-Controlled Vehicle](#) The CARduino is a remote-operated vehicle which is controlled by a controller attached to a computer running LabVIEW. The vehicle is powered by the Arduino, and can be expanded upon through the addition of sensors or other devices. Using LabVIEW, one can easily modify the..... Listed under: [Car Projects](#)
764. [Momentary Switch as Digital Sensor using arduino](#) many cases switches are just switches. They directly control the flow of electricity to an appliance, flashlight or mains-voltage lamp. An example of this is the switch on the wall in your living room. In many cases nowadays however, switches are digital sensors, meaning



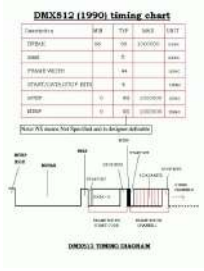
that..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)



765. [Read analog data directly in Processing using arduino](#) This instructable presents a fast an easy way to use data received from an analog sensor in Processing. You will learn to utilize the Arduino and prototype electronic boards to read meaningful data from the environment. The sensors can be affected by the light, the..... Listed under: [Arduino Programmer Projects](#)



766. [The Arduino Noise Machine](#) Okay, okay, I know you all were wondering what I am up to now. I love synths and so, I built this. There are three things that can catch my attention: Synthesizers, Amplifiers and free. The other day (Actually it was just Thursday) I was..... Listed under: [Projects](#), [Sound – Audio Projects](#)



767. [Arduino DMX shield for Christmas projects](#) This shield allows to connect an Arduino with DMX equipment. It implements the RS485 interface to adapt the electrical levels needed for DMX connection. This shield has been designed with flexibility in mind and allows the user to choose between several Arduino pins for digital..... Listed under: [Game – Entertainment Project Ideas](#)



768. [The Soil Moisture Sensor using arduino](#) You are building a cheap soil moisture sensor so the brain can read the amount of moisture in the soil. The version we are building is very low tech, but it is also very cheap and easy to build. It consists of a block of..... Listed under: [Home Automation Projects](#), [Temperature Measurement Project Ideas](#)



769. [Arduino theremin like musical instrument](#) When I got my Arduino protoshield from sparkfun, I wanted to make something cool with it. And since I had seen a few Theremin projects before, and already thought about making some, I finally made one, using the Parallax PING sonar sensor. Here are some..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)



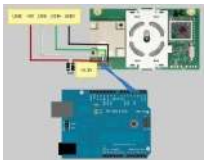
770. [Mouse Control With Pushbuttons using arduino](#) Overview In this lab, you'll build an alternative computer mouse using an Arduino Leonardo using pushbuttons to move the mouse left, right, up and down. You'll see the difference between reading a digital input continually and reading for a change of state. (:toc Table of..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)



771. [Make A G Meter using Arduino](#) I have a late 80's VW and the gauge cluster has 5 dummy LED locations underneath the other warning lights. Well I was tired of the m not doing anything, so I decided to do something about it. I came up with the idea to..... Listed under: [Metering – Instrument Projects](#)



772. [Remote control via GPRS or GSM SMS using Arduino](#) Remote control, it has been a very profound things in the past. When I was a child, I always imagine that I have an equipment which can control all home appliances. Now, this has become a reality, and it is quite easy. Then I will..... Listed under: [Ideas](#), [Phone Project Ideas](#), [Radio Project Ideas](#)



773. [Xbox 360 RF module + Arduino](#) I was going to make a huge write-up on this, but I can't be bothered right now. I'll probably do something about it later. Until then, have an Arduino sketch. If you don't know what you're doing with it then chances are you don't have..... Listed under: [Radio Project Ideas](#), [Wireless Projects](#)



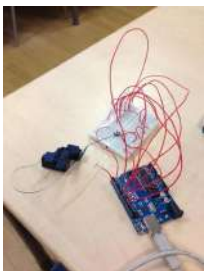
774. [Robotic Talking Turret using Arduino](#) Here I will show you an overview on how to make a robotic talking turret, loosely based off of the turrets from the popular game, Portal. This instructable should help anyone wanting to do an animatronics project. For more detailed pictures, go to: <http://razorconcepts.net/turret.html> This..... Listed under: [Projects](#), [Robotics – Automation Projects](#)



775. [New Textiles 2012 using arduino](#) Twist Switch by ttseng Through the action of twisting, swatches of conductive fabric are folded in upon each other, completing a circuit that then turns on LEDs. On each face of stretched spandex are swatches of conductive fabric. Before choosing which swatches to designate as..... Listed under: [LED Projects](#)



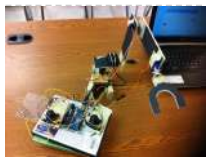
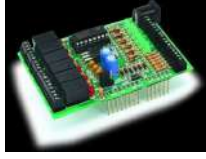
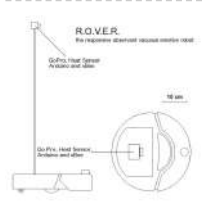
776. [Demystifying 4 pin RGB LEDs \(Radio Shack 276-0028\) using arduino](#) RGB LEDs are fairly useful in projects allowing for a wide range of color from a single unit. However they can be a pain in the neck to work with and they too often come with little or no documentation. I searched for some time..... Listed under: [LED Projects](#)



777. [Connect the arduino and make the speaker play](#) To make your Arduino to play a melody you need thes accessories. One 5 ohm speaker One Arduino uno board One Push buttom One 10 kohm resistor 8 leds And a lot of core wires Step 1: Connect the arduino and make the speaker play This..... Listed under: [Sound – Audio Projects](#)

778. [Team 1 Final Project Report & Video: Arduino Video Game System using arduino](#) Introduction We built a video game system that can play either Snakes or Pong. We saw a project called "Arduino Pong" and wanted to recreate it with our own twist. Description Parts Needed: Arduino Uno Video Game Shield 2 ' ^ ^ ; 2 non-latching push buttons 2..... Listed under: [Game – Entertainment Projects](#)



779.  [Arduino Morse Code Flaher using arduino](#) I am a big fan of programming but I like to keep it down to 555 timer but when it comes to complex functions like flashing a LED in a certain pattern programming is necessary. One day while surfing through the I came across something known as Morse code. I decided..... Listed under: [Arduino Programmer Projects](#)
780.  [How To Make A Arduino Robotic Arm](#) In this instructable I will show you how to make a simple robotic arm controlled by 4 servos , 2 analog joysticks, and an Arduino UNO. It is very similar to my "2 Servos + Thumbstick" instructable. This tutorial is in particular to help out..... Listed under: [Robotics – Automation Projects](#)
781.  [Rear Wheel Tachometer using arduino](#) One of the goals of Movable Party is to provide an interactive experience for audiences/participants. Since power will be generated from a hub motor attached to the rear wheel of each bike (see this post), the speed of the rear wheel directly translates to the..... Listed under: [CNC Machines Project Ideas](#), [Temperature Measurement Projects](#)
782.  [The Versatile Arduino Robot using arduino](#) This is my first arduino robot, and I am quite happy with the outcome. What I came up with is a robot that with modifications can do just about anything in the realm of small arduino robots. The electronics are very simple. You only need..... Listed under: [Robotics – Automation Project Ideas](#)
783.  [Time-Lapse Camera Controller using Arduino](#) Simple digital cameras can produce remarkably good quality photos and are now cheap enough that it doesn't hurt the wallet too much to buy one with the intention of modifying it for use in a project. You may even already have an old digital camera..... Listed under: [Video – Camera – Imaging Projects](#)
784.  [A useful and simple IO Shield for Arduino](#) In order to "visually" highlight the behavior of Arduino programs you must connect a device to the I/O pins, which gives you tangible signals. Normally, if you want to check if a program changes a level of an output pin, answering a command or executing..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#)
785.  [StorageBot – voice controlled robotic parts finder using arduino](#) Introduction I created the StorageBot to help solve a problem experienced by most Makers. After many years of accumulating thousands of parts stored in storage bins, I began to go crazy looking for parts scattered between so many of these bins. The hardest parts to..... Listed under: [Robotics – Automation Project Ideas](#)
786.  [Automated LED stairs using arduino](#) After seeing the lovely LED stairs at interactivefurniture.de, I decided to make my own, open-source version. Here is a video of them in action. I am not an expert videographer and cannot do the stairs full justice, but they came out exactly as I wanted..... Listed under: [Home Automation Project Ideas](#)
787.  [Laser cut gear clock with ChronoDot using Arduino](#) This summer, my hackerspace LVL1 (in Louisville, Ky) got an awesome laser cutter <http://fslaser.com/40w-deluxe-hobby-laser-engraver-and-cutter>. LVL1 is an awesome community of creative folks that like to build stuff. You can always check out what we are up to at <http://www.lv1.org>. If you like instructables and making..... Listed under: [Clock – Timer Projects](#), [Projects](#)
788.  [Using an Arduino to Control or Test an SPI electronic device](#) There are many electronic devices that use the SPI bus, or Serial Peripheral Interface bus, for communications (e.g. various sensors, LCD displays, digital potentiometers, D/A and A/D converters, wireless transmitters and receivers, audio volume controls). The devices receive data serially from a microcontroller using a..... Listed under: [Battery Projects](#)
789.  [Solar Powered LED/Ultracapacitor Arduino Regulated Light](#) This instructable primarily shows how to control the charging voltage from a solar panel to an energy storage device (capacitors in this case). I showed how to construct the light previously <http://www.instructables.com/id/Human-Powered-Light-from-my-book-Doable-Renewab/> Step 1: This solar panel can produce up to 18 volts, but my..... Listed under: [LED Projects](#), [Projects](#)
790.  [Arduino – based camera trigger unit](#) I developed the camera trigger unit in order to synchronize various events and actions during free-flight experiments with hawkmoths in the wind tunnel described in a previous post. More specifically, the goal was to trigger multiple high-speed cameras and have LEDs that indicate the exact..... Listed under: [Home Automation Project Ideas](#), [Video – Camera – Imaging Projects](#)
791.  [Bouncing Multicolored LED line](#) This is an arduino controlled project and uses leds, jumper wires, and a breadboard. This is one of my first attempts on programming arduino and I am pleased with the outcome. I'm ten years old and I just started programming 2 weeks ago. Step 1:..... Listed under: [LED Projects](#)
792.  [R.O.V.E.R.: Reactive Observant Vacuous Emotive Robot using arduino](#) R.O.V.E.R. is an autonomous robot. He was built and designed as an interactive art installation specifically for the MAT EoYS 2013. He navigates the space with a heat array and bump sensors and interacts with attendees. When R.O.V.E.R. recognizes that a person is present he..... Listed under: [Electronics News Updates](#), [Robotics – Automation Project Ideas](#)
793. [Airmonica – a free-air musical instrument](#) improvise + harmonize + customize The airmonica is a easy-to-learn tweakable musical instrument that you can to perform harmonic musical ditties by accompanying a tri-tone arpeggiator. There are endless opportunities to expand the airmonica in any way that will make



it your your own..... Listed under: [Sound – Audio Projects](#)



794. [Programming Arduino in C++11 — ROM dumping](#) In this tool-assisted education video I show how to program an Arduino Atmega2560 board in C++11 to dump a ROM chip, such as a 386sx BIOS or a Famicom cartridge ROM. I also make a ZMODEM sender and a LED blinker in this video. Sorry..... Listed under: [Arduino Programmer Projects](#), [Projects](#)



795. [Smallsword Choreography Shirt usnig arduino](#) Stage combat is the art of theatrical violence. Rather than resembling fencing, stage combat is choreographed like dance for aesthetic and theatrical effect as well as for safety. Over years of choreographing and teaching others stage combat choreography, I realized that one of the most..... Listed under: [Game – Entertainment Project Ideas](#)



796. [Arduino Automatic Watering System For Plants Sprinkler](#) Last month, Elecrow have left from the original office and moved to a new office. We will miss our original office where we worked so hard for more than two years, we will miss everything here, the desks, the windows, and those potted plants, that..... Listed under: [Home Automation Projects](#)



797. [The iButton garage-door opener using an Arduino](#) I've made an iButton garagedoor opener and logger. On a Dutch (kind of) eBay (www.marktplaats.nl) I found some iButtons and readers very cheap. I had no idea what to do with them, but I bought them anyway. My garage opens with a push on a..... Listed under: [Home Automation Projects](#), [LCD Projects](#), [Projects](#)



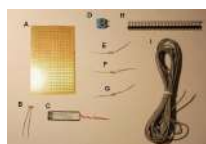
798. [RFM12B – Part 1 – Hardware Overview](#) To see how RFM12B wireless compares to other similar wireless options (e.g Xbee, XRF etc..) check out this well compiled comparison overview by Stuart Poulton: <http://blog.homelabs.org.uk/wireless-connectivity/>. Overview Made by Hope RF, re-branded by RFsolutions in the UK. Sometimes called 'Alpha RF' Low cost RF transceiver (from Rapid, Farnell,..... Listed under: [Radio Project Ideas](#), [Wireless Projects](#)



799. [Arduino Throttle Body Synchronization Shield](#) A common Motorcycle maintenance task is to synchronize the throttle bodies on the engine to smooth out any rough idle. This is done by monitoring the vacuum on each throttle body and using the idle screw to make the adjustment. While this sounds rather advanced,..... Listed under: [Car Projects](#), [Projects](#)



800. [Ardusumo: an Open Source Platform for Fighting Robots using Arduino](#) The idea Ardusumo is a universal platform to build robots on wheels that can move around avoiding obstacles using infrared sensors and follow routes marked with dark lines on a white background. We have created Ardusumo to bring young students to the world of robotics:..... Listed under: [Projects](#), [Robotics – Automation Projects](#)



801. [A laser barrier with Arduino](#) In this post we will see how to make a laser barrier to integrate with an Arduino board. The applications of a light barrier (laser and infrared) are numerous, especially whenever we want that the passage of a person or of an object through a threshold..... Listed under: [Home Automation Project Ideas](#), [Security – Safety Project Ideas](#)



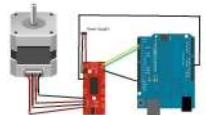
802. [BUILD YOUR OWN LASER HARP using Arduino](#) The laser harp is a musical instrument made of light. A fan of beams shoots up from the floor into the night sky. The performer can create music by placing their hands in the beams. Not only does "breaking" the beam produce notes, but sliding..... Listed under: [Game – Entertainment Projects](#)



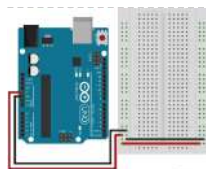
803. [Touch Control Panel using Arduino](#) Small 4-wire resistive touchscreens are now amazingly cheap: they are produced in such enormous quantities for mobile phones, PDAs, and particularly handheld games such as the Nintendo DS that they can be bought brand new for under US\$10. Larger touchscreens are also rapidly falling in..... Listed under: [Sensor – Transducer – Detector Projects](#)



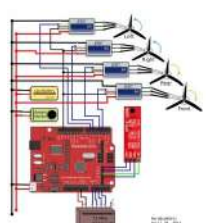
804. [Arduino + 2 Servos + Thumbstick \(joystick\) using arduino](#) In my other 2 Arduino tutorials I have help new users to play tones and making 2 servos move with a mouse. This time I will help you move the same 2 servos with a thumbstick. And again I have surf the internet to see If there..... Listed under: [Motor Projects](#)



805. [Stepper Motor drive from Arduino](#) Stepper Motor drive from Arduino In this tutorial we will show you how to connect a bipolar stepper motor to an Arduino Uno board. The stepper motor we are using is the Sparkfun Stepper Motor but you can use any other 4-wire bipolar stepper motor..... Listed under: [Motor Projects](#)



806. [Analog In with an Arduino](#) Overview In this lab, you'll learn how to connect a variable resistor to a microcontroller and read it as an analog input. You'll be able to read changing conditions from the physical world and convert them to changing variables in a program. (:toc Table of..... Listed under: [How To – DIY – Project Ideas](#)



807. [UVic Quadcopter using arduino](#) Hardware Controller The Arduino platform is selected for this project, mainly due to its open software and hardware nature which has resulted in availability of extensive technical information. As a result there are many tutorials and example project available for this platform. A list of..... Listed under: [Car Projects](#), [Robotics – Automation Project Ideas](#)



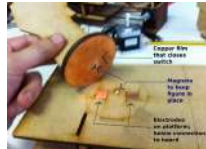
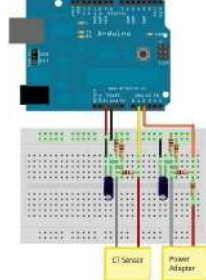
808. [How to: Use Arduino to Generate Glitchy Audio VGA Visuals](#) This post is a guide for people that are interested in my previous posts about dual monitor VGA hacking (see 1, 2 and 3). You will need: • A laptop or a computer with a VGA output • A breadboard (optional) and so

wires or..... Listed under: [Sound – Audio Projects](#), [Video – Camera – Imaging Projects](#)

809.  [Hacked Pan and Tilt Camera Mount](#) So my sister managed to break a pan and tilt camera mount and naturally thought daddy can fix this. After sitting on my dads workshop bench for a while he had a go at it and couldn't work out how to fix it so it..... Listed under: [Video – Camera – Imaging Projects](#)
810.  [Adafruit Arduino Motor Shield Build](#) Overview The Arduino Motor Shield is based on the L298 (datasheet), which is a dual full-bridge driver designed to drive inductive loads such as relays, solenoids, DC and stepping motors. It lets you drive two DC motors with your Arduino board, controlling the speed and..... Listed under: [Motor Projects](#), [Projects](#)
811.  [How to make fist pumping with LED animation using Arduino](#) It's to make a fist pumping LED controller. What is it? Have you noticed yourself fist pumping to the music at a party or a club? That's exactly for that. You would wear a band with a accelerometer/gyro mounted. As you move your hand around..... Listed under: [LED Projects](#), [Projects](#)
812.  [Developed on Hackaday: First Version of the Hardware](#) The Hackaday writers and readers are currently working hand-in-hand on an offline password keeper, the mooltipass (click to see the project description). Next in our Developed on Hackaday series, we present the first version of our schematics. There's already been a lot of discussions going on in..... Listed under: [Security – Safety Projects](#)
813.  [DIY Teagueduino](#) What is Teagueduino? Teagueduino is an open source electronic board and interface that allows you to realize creative ideas without soldering or knowing how to code, while teaching you the ropes of programming and embedded development (like Arduino). Teagueduino is designed to help you discover..... Listed under: [How To – DIY – Projects](#), [LED Projects](#)
814.  [Automatic blind hooked up to existing projector screen using Arduino](#) Hello my name is Chipsy, I'm French, reading instructables since at least 2 years, it is the first entry i make on this website. Why i made this project : I have a small homecinema system in my living room, with a projector and a..... Listed under: [Home Automation Projects](#), [Projects](#)
815.  [4x Multiplexed RTD Temperature sensor module](#) Description This module can be used to measure temperature using RTD (resistive temperature detectors) temperature sensors. It produces an analog voltage that is proportional the temperature of the probe. The module contains a multiplexer to enable measurement of up to 4 temperature probes. Design RTD..... Listed under: [Temperature Measurement Project Ideas](#)
816.  [MenZ-DECK](#) About a year ago, we drunk beer in The-MenZ Lab. When Zagan said "I want PCDJ controller, So next project is make controller!". The project began at this time. ***MenZ-DECK featured by Maker Faire UK Blog.*** <http://www.makerfaireuk.com/maker-faire-tokyo/> (Continue with broken English) Components for make controller: Arduino..... Listed under: [Development Board – Kits Projects](#)
817.  [Arduino Watch Build Instructions](#) Update: New version out that works with Arduino 1.0 and higher! The Arduino Watch provides augmented sensing of temperature and range, 16-bit color drawing program, Breakout game, and also tells the time in your choice of digital, binary, or analog. Additional sensors, devices, and programs..... Listed under: [Clock – Timer Projects](#), [Projects](#)
818.  [Girino – Fast Arduino Oscilloscope using Arduino power connector](#) I am a Physicist and the nicest part of working in this field is that I get to build my own instruments. With this way of thinking, I decided to build a homebrew Arduino Oscilloscope. This instructable was written with the purpose of teaching a..... Listed under: [Metering – Instrument Project Ideas](#)
819.  [GSM Remote Control – GSM Module](#) This GSM Mobile is used for our Remote Control (for example Gate Control, Temperature Control....). We use the word 'module' because, unlike what we did in our remote control projects, this time around the mobile phone is not mounted on a printed board, but rather on..... Listed under: [Phone Projects](#)
820.  [Team 12 – Prototype I Final Report: Home Automation Project using arduino](#) Introduction The Home Automation Framework project is a web application that can remotely control the electronic devices in one's home using a web interface on a smartphone, tablet or desktop computer. The project facilitates ease of access and remote control of electronic devices for those..... Listed under: [Home Automation Project Ideas](#)
821.  [Interface a rotary phone dial to an Arduino](#) An old rotary phone can be used for a number of purposes in your Arduino projects - use it as a novel input device, or use the Arduino to interface a rotary phone to your computer. This is a very basic guide describing how to..... Listed under: [Interfacing\(USB – RS232 – I2c –ISP\) Projects](#), [Phone Projects](#), [Projects](#)
822.  [Arduino Controlled Can Crusher With LCD Readout](#) I have always wanted to do an instructable, but I never had a somewhat original idea that hasn't been done a million times, or something that had no means of building. I have some friends who recycle aluminum for money and after seeing the large bags of an unknown..... Listed under: [Home Automation Projects](#), [LCD Projects](#), [Projects](#)
823. [Infinite Loop – Prototype I Final Report: Hazardous Weather Warning System using arduino](#) Introduction: The LED warning system notifies local residents of emergency withing the area. The difference in the color of the LED will allow residents to differentiate between different warnings. Each shelter building has a

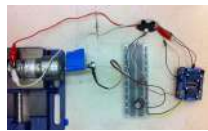


person who is in charge of unlocking the door for residents..... Listed under: [Security – Safety Project Ideas](#)

824. **Computers Are Dumb** [Computers are Dumb](#) Objective: Overcome your fear of computers! If you can count to two, then you can master the basics of computers. If you think computers are smarter than you, you are wrong and I will prove it. For normal people, just follow the LOG: comments. Computers..... Listed under: [RTOS – OS Projects](#)
825.  [Bicycle North Indicator using Arduino](#) Magnetoception is the ability of some animals to detect magnetic fields as a means of orienting themselves. Although humans do not seem to possess the same biological mechanisms that allow other animals to sense magnetic fields, there are still many ways that we can improve our..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)
826.  [Shade Technologies – Prototype I Final Report: Motorized Wheelchair Canopy using arduino](#) Introduction Our Motorized Wheelchair Canopy intends to help those people with disabilities that confine them to their motorized wheelchairs and need shelter at times of inclement weather, such as rain or extreme heat. Although manual wheelchair canopies do exist, no type of motorized wheelchair canopy..... Listed under: [Medical – Health based Project Ideas](#)
827.  [Fab Lab Barcelona SuperNode /Fab Lab Sevilla /Jose Perez de Lama](#) Retablillo de las Maravillas v1.0 Developed July > > August 2013 4./ Interactivity & electronics 4.1/ Switches / characters 4.2/ Screen / interface 4.3/ Motor controller 4.4/ I/O controller & interface [4./ electronics] [4.1/ switches / characters] The characters on top of the moving platform function, as interfaces,..... Listed under: [Game – Entertainment Project Ideas](#)
828.  [SPI interface to the FlySky/Turnigy 9x](#) Interfacing a RC radio to a microcontroller is a bit of a pain, especially if you want a lot of channels, because you have to time each channel's output individually. An AVR only has one 16 bit timer with two compare channels, so either you..... Listed under: [Radio Projects](#)
829.  [Arduino powered 7seg led display with Port Manipulation](#) Time for something a little more advanced. Direct Port Manipulation. Normally when using Arduino software, the actual logic behind changing the values in pins is abstracted away with digitalRead and digitalWrite. Now, for most people that's just fine. But it has some limitations. For one,..... Listed under: [LED Projects](#), [Projects](#)
830.  [Arduino controlled animatronic wooden head \(reading lamp\) using arduino](#) This head is a reading lamp which can be adjusted for direction of lighting, and dimmed as required. This Instructable combines Arduino programming, some simple electronics, carving with hand and power tools, mechanical control and a bit of woodwork. Apart from the Arduino and a..... Listed under: [Home Automation Projects](#)
831.  [How to build an Arduino energy monitor – measuring mains voltage and current](#) This guide details how to build a simple electricity energy monitor on that can be used to measure how much electrical energy you use in your home. It measures voltage with an AC to AC power adapter and current with a clip on CT sensor,..... Listed under: [Temperature Measurement Project Ideas](#)
832.  [High Power RGB LED Moodlamp which syncs with Philips Hue](#) In this instructable the main focus lies on the software which I've created - not so much on the hardware side. You needn't to use a high- power led for this, you can use every RGB- LED you like. The "High Power RGB LED Moodlamp"..... Listed under: [LED Projects](#)
833.  [Buggy Wheelchair Robot using an Arduino](#) This is a Modification of an electric wheelchair. I called it "Buggy" for two reasons. #1 My kids can still ride it around because I left the seat intact. #2 I haven't programmed anything for a long time. I plan to create "jobs" for it..... Listed under: [Projects](#), [Robotics – Automation Projects](#)
834.  [Make A FOBO Bipedal Walking Robot Using Arduino](#) FOBO is the fourth prototype from Project Biped. It is a 3D printed, self-contained, statically balanced, bipedal robot. It has 8 DOF (degrees of freedom) and can walk around its environment and avoid obstacles using an ultrasonic range sensor. All of the designs, instructions, source..... Listed under: [Robotics – Automation Project Ideas](#)
835.  [Build the Ultimate Larson Scanner! using arduino](#) I have watched the availability of high power (>10W) LED's jump over the past year or so and... drop in price. I came across some very inexpensive 10W white LED's from Deal Extreme that were in the \$3 dollar range and put out 900lumens, which..... Listed under: [CNC Machines Project Ideas](#)
836.  [Precision Fermentation: Arduino-Controlled Crock Pot Yogurt Maker](#) A homemade thermostat attachment for a crock pot (or other electric heating device). It can be used to precisely control the temperature of the crock pot for things like yogurt fermentation. Why Making yogurt is fun. It is also way cheaper than buying it. You..... Listed under: [Home Automation Projects](#)
837. [BLU-BOARD, control your home with blue tooth!](#) Big thanks to the fine people at Hack-A-Day for sharing this with the world! if you'd like to donate to the project: <https://www.suprmass.com/projects/167/blu-board> This project has been in the works for along time, three months if I reckon Correctly, but anyw this device will allow you..... Listed under: [Development Board – Kits Projects](#), [Home Automation Projects](#)



838.  [CatBot: Automated Cat Laser using an Arduino](#) The CatBot is an autonomous laser toy for your cat. You may say "But Joe, isn't the laser pointer the best toy for the lazy cat owner?" I'd have to say no, the CatBot takes one step further. Using two servos, an Arduino and a..... Listed under: [Projects](#), [Robotics – Automation Projects](#)



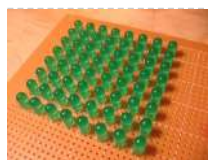
839. [Group 9 – Prototype I Final Report: Remote Piano Pedal Controller using arduino](#) Introduction: As a group, we feel that everyone should be able to enjoy the things they love to do despite their limitations. Our project is designed to enable people who are unable to use their legs to operate the pedals of a piano and..... Listed under: [Sound – Audio Project Ideas](#)



840. [Arduino compatible Luna Mod Looper](#) The Luna Mod Looper, basically lets you record a sequence using a potentiometer to control the pitch of the note, and then play it back and add affects. Ever since I saw videos of the Luna Mod being played, I wanted to build my own..... Listed under: [Projects](#), [Sound – Audio Projects](#)



841. [Glowing Color-Changing Guitar](#) In the kingdom of rock and roll it is important to set oneself apart. With millions of people in this world who can play the guitar, simply playing well is just not going to cut it. You need something extra to rise up as a..... Listed under: [Sound – Audio Projects](#)



842. [LED matrix using shift registers using arduino](#) This instructable is meant to be a more complete explanation than others available online. Notably, this will provide more hardware explanation than is available in the LED Marquee instructable by led555. Goals This instructable presents the concepts involved with shift registers and high side drivers..... Listed under: [LED Projects](#)



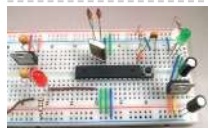
843. [Athena: The Global Car Tracking System\(3D Images\)](#) Bring out your 3D glasses and enjoy viewing in a novel way! I have added a new dimension to my instructable. If you do not have 3D glasses, then you can make one yourself. The following link explains how to make 3D glasses (link). Please..... Listed under: [Car Projects](#), [Sensor – Transducer – Detector Projects](#)



844. [Piano Stairs with Arduino and Raspberry Pi](#) Who doesn't love music? These Piano Stairs are an interactive, relatively portable, musical installation that can be applied to basically any stairwell. I built them for HackPrinceton and won 2nd place in the hardware track. I've had requests to share my code and diagrams, so..... Listed under: [Sound – Audio Projects](#)



845. [Addressable Milk Bottles \(LED Lighting + Arduino\) using arduino](#) Make PPE milk bottles into good looking LED lights, and use an Arduino to control them. This recycles a number of things, mainly the milk bottles, and uses a very low amount of power: the LEDs apparently dissipate less than 3 watts but are bright..... Listed under: [LED Projects](#)



846. [How to Build an Arduino Circuit on a Breadboard](#) Small Kit with Big Functionality By Ryan Winters Product Manager There are many reasons to build your own Arduino circuit on a breadboard or PCB. It takes less space, projects don't always require every pin to be used on the I/O headers, or maybe you..... Listed under: [Development Board – Kits Project Ideas](#)



847. [Make your own cellphone from scratch](#) The DIY Cellphone is a working (albeit basic) cellphone that you can make yourself. It can make and receive phone calls and text messages, store names and phone numbers, display the time, and serve as an alarm clock. It connects to GSM networks (like AT&T and T-Mobile..... Listed under: [How To – DIY – Projects](#), [Phone Projects](#)



848. [Arduino LED Cube Spectrum Analyzer](#) In this project we'll create a small add-on PCB containing the a MSGEQ7 spectrum analyzer circuit and show how it can drive the RGB LED cube kit from Freetronics. This allows the cube to display the seven bands over four horizontal planes. There is a small amount..... Listed under: [LED Projects](#)



849. [High Speed Outdoor Photography](#) High speed photography is generally carried out in a dark room with dedicated equipment (controlled remote flash for example)... The instructable proposed here enables to make high speed photography outside (and enjoy the sun!), in less than 2 hours with some generic DIY basic tools. The principle is the following..... Listed under: [Video – Camera – Imaging Projects](#)



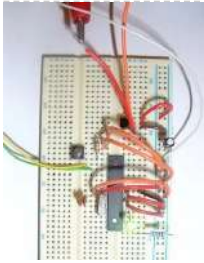
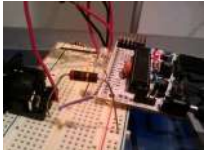
850. [DIY Sensors Workshop using arduino](#) The Arduino offers the advantage that a lot of people are using it so it is usually quite easy to get help or information via the internet. The main website for the Arduino is: <http://www.arduino.cc/>. The Arduino can also be programmed to behave in many..... Listed under: [Sensor – Transducer – Detector Projects](#)



851. [Troubleshoot your car battery with ATtiny](#) Last winter I experienced some problems with my car battery. I knew that it was about time to replace it so off I went to buy a new one. This fact reminded me of an old article about a car battery/charging system diagnostics kit I..... Listed under: [Battery Projects](#), [Car Projects](#)



852. [Solar theremin with Arduino using arduino](#) materials: arduino uno 3 photoresistors 4 buzzers 3 10k resistor (optional) usb solar pannel or usb battery Step 1: Why? During the 2014 art Exhibition at Met (M. di Ragusa), I created (with the technical collaboration of Carmel Iurato), this theremin made from three photoresistors,..... Listed under: [Solar energy project Ideas](#)

853.  [Arduino Prototype Center](#) This is a relatively inexpensive and easy to build project that will help you test out all of your Arduino projects and prototypes. Since it has a plug-in power source, it eliminates frequent battery use and leaves the breadboard free of voltage regulators and capacitors..... Listed under: [Metering – Instrument Project Ideas](#)
854.  [STEAMPUNK STEAM GAUGE, POWERED BY ARDUINO](#) This was created to be some eye-candy for my kitchen. I wanted something unique for a special blank space on my wall, and adding movement, blinky lights and interesting mechanical “guts” made it even better. Ultimately, this project ended up requiring the following range of..... Listed under: [Metering – Instrument Projects](#), [Sensor – Transducer – Detector Projects](#)
855.  [Build An Arduino Laser Engraver](#) I started this project because I wanted to make something that had mechanical, electrical and software components. After looking around on Instructables, I figured that an Arduino based laser engraver would be an interesting machine to make, and that the machine itself could make interesting..... Listed under: [Other Projects](#)
856.  [Google Docs and the Arduino Yún](#) Introduction This is the second in a series of tutorials examining various uses of the Arduino Yún. In this article we'll examine how your Arduino Yún can send data that it captures from the analogue and digital inputs and a real-time clock IC to an online Google..... Listed under: [Internet – Ethernet – LAN Projects](#)
857.  [Make A Multitouch Music Controller Using Arduino](#) This project is an Arduino-powered infrared touchscreen / coffee-table interface that I've been using to control various music and graphics applications on my computer. This is an old project that I've recently had time to go back and document/fix up; this project is a little..... Listed under: [LCD Projects](#), [Sound – Audio Projects](#)
858.  [Arduino ATmega328 – Hardcore using arduino](#) Ok, you've completed your prototype using an Arduino Uno board, perhaps using a shield or a breadboard for any additional components, but now you want to finalise your design and construct it using your own pcb. Well, that is fairly straightforward, as we have made..... Listed under: [Development Board – Kits Project Ideas](#)
859.  [Controlling Cubase with Arduino based MIDI](#) A friend of mine wanted to control Cubase, his audio recording software, with a push button so that he could stop and start recordings remotely without having to go over to the computer and type on the keyboard. You may be able to do this..... Listed under: [Projects](#), [Sound – Audio Projects](#)
860.  [Plugduino – Arduino based 120 Volt outlet controller](#) give your Arduino a 120 volt kick in the pants! The Arduino is a great tool for anyone interested in learning microcontroller programming, but after blinking some LEDs, what's next? This project enables your Arduino to control real-world 120 Volt electrical appliances you have in..... Listed under: [LED Projects](#)
861.  [Arduino Masterclass Part 2: Build an LED weather station using arduino](#) Project-specific parts You'll need the standard parts (Arduino board breadboard wires pliers and so on) along with these extras: DHT11 temperature/humidity sensor 7 x 330-ohm/0.5W metal film resistors 3 x 4.7k-ohm/0.5W metal film resistors 2 x BC337 NPN transistors 2 x LTS543R or FND500 common..... Listed under: [LED Projects](#)
862.  [Proximity Sensing Origami Flower using Arduino](#) Origami is the traditional Japanese art of paper folding. In this project, with a little help from an Arduino, you can bring your origami into the 21st century and make it an interactive art! The result shown here uses Bare Conductive paint to give an..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)
863.  [Make A Worms in Space Board Game Using Arduino](#) Story: NASA has taken worms to the ISS on their own special capsule. There was an accident aboard the station and the worm astronauts have to navigate to the escape capsule to return to Earth. The airlock to the escape capsule has been damaged but..... Listed under: [Game – Entertainment Projects](#)
864.  [FireHero: Turn Guitar Hero into an extreme sport by adding flamethrowers! using Arduino microcontroller](#) So, long ago I had read about propane fire poofers. They're pretty cool... I mean, who doesn't love fire?! But, no matter how awesome, they could get pretty boring after a while of seeing the same large fireball. I never built one because I wanted..... Listed under: [Game – Entertainment Projects](#)
865.  [How to Display Text on an HD44780 LCD with an Arduino](#) In this article, we will go over how to connect an HD44780 LCD to an arduino in order to display any text that we want to show on the LCD. To do this, first, we must make the appropriate physical connections from the arduino board..... Listed under: [LCD Projects](#)
866.  [DIY Antique Phone Doorbell using Arduino](#) Bryan Zimmer emailed us this fantastic retro-themed DIY hack, a most timely submission as we just revisited the noir art deco-science fiction classic Dark City and we think this would have perfectly fit in the world (or in Adama's quarters on BSG). Bryan gives step-by-step..... Listed under: [Home Automation Projects](#), [How To – DIY – Projects](#), [Phone Projects](#)
867.  [Controlling speed controllers with Arduino](#) Hey guys, I'm back with another instructable. This is about RC speed controllers. What this will do is allow you to test out your speed controller in the Arduino world using Serial, then you write the values down and can use them for your projects..... Listed under: [Ideas](#), [Metering – Instrument Project Ideas](#)
868. [Arduino Touch Screen iTunes control \(ATSIC\) using arduino](#) What I'm going to show you is how to make an iTunes control device using an Arduino and a touch screen. The iTunes Control works by reading area's of the touch screen and send a letter to the computer via the serial port, which is..... Listed under: [Phor Projects](#)



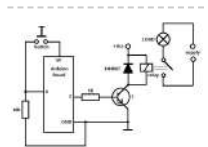
869.  [Building an Arduino Robot, Part II: Programming the Arduino](#) Welcome to the second article in the tutorial series in which I'm building a remote controlled Arduino based vehicle robot. Here is the list of articles I have published: Part I: Hardware Components Part II: Programming the Arduino (this article) Part III: Assembling the Robot..... Listed under: [Robotics – Automation Projects](#)



870. [Make A Color Changing Display Using Arduino](#) Custom made Multiple color display. Have you ever wanted a display that is a little larger then one you can buy? Have you ever wanted to make a display the way you wanted it? Me too! This is how I made a custom multiple color..... Listed under: [LED Projects](#)



871. [DMX Ardweeny Node using Arduino](#) I've settled on the lighting industry standard of DMX as my overall control protocol as I explore the world of blinky lights. This universal control method is electrically robust, radio transmissible, and flexible enough for my needs (not to mention the needs of major concert,..... Listed under: [Development Board – Kits Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)



872. [Control a Relay with Arduino](#) In this quick Arduino tutorial I will explain how you can control a relay using the Arduino Board, one 1K and one 10K resistors, 1 BC547 transistor, one 6V or 12V relay, one 1N4007 diode and a 12V fan. When the button is pressed the..... Listed under: [Sensor – Transducer – Detector Projects](#)



873. [Easily control your iPod using Arduino](#) Easily control your iPod with Arduino using serial commands. This instructable includes the schematic, the code and some extra info; everything you need to make this work. USB,battery or wall power supply powered. Step 1: What you need Parts: 5x 1K ohm resistors 2x 1M..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Phone Projects](#), [Projects](#)



874. [Make an Arduino Timer](#) Hi, so me and my pal are setting up so we can make PCB's. We are currently making a UV exposure box (possibly another instructable) and for this box, we needed a timer, so this is what we have done so far, and what we..... Listed under: [Clock – Timer Projects](#), [Projects](#)



875. [RC Car to Robot using arduino](#) Converting an RC car into a robot is a quick and easy way to get started with robotics. At the very least, when you get bored of playing with your remote control car after three days, you can turn it into a robot that will..... Listed under: [Game – Entertainment Project Ideas](#)



876. [Easy 4x6 LED Matrix, Arduino!](#) In this inst'able, I will show you how to create your very own 4x6 LED matrix as well as show you how to write code for it! There is an animation creator program in step 4! Here is one ANIMATION to get you excited about the project! ***Wave..... Listed under: [LED Projects](#), [Projects](#)



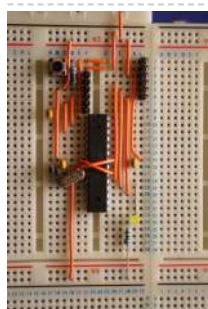
877. [Pulse Width Modulation : PWM using Arduino](#) Pulse Width Modulation or PWM is a method of Digital to Analog Conversion. It helps in delivering analog average voltage using digital pulses of variable pulse width. By controlling the on time and off time, we can generate an analog average voltage using the digital..... Listed under: [PWM Projects](#)



878. [Robot arm from a desk lamp \(IKEA Tertial hack\)](#) This project answers to a need I had: a third hand that holds a camera while I perform a test and takes photos/videos (useful when you're stuck at the lab late at night, and suddenly need a photographer). The downside to a robotic arm was..... Listed under: [Robotics – Automation Projects](#)



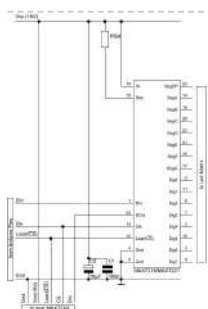
879. [Arduino Guitar Pedal using arduino](#) The Arduino Guitar Pedal is a digital multi-effect pedal based upon the Lo-Fi Arduino Guitar Pedal originally posted by Kyle McDonald. I made a few modifications to his original design. The most noticeable changes are the built-in preamp, and the active mixer stage which lets..... Listed under: [Game – Entertainment Project Ideas](#)



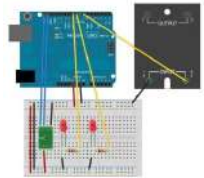
880. [Breadboard Arduino](#) Received a couple of nice big bread boards for Christmas and decided that one of them needed an arduino to use with it. After some thought I decided that the best option was to build the required parts of an Arduino circuit direct on the..... Listed under: [Development Board – Kits Projects](#)



881. [Tabletop Soccer Game using arduino](#) Send a Foosball down a ramp and try to score on the goalie! But scoring is not so easy - the goalie moves left and right to block your shot! This project was made for a class called "Thinks that Think" at CU Boulder for the Spring..... Listed under: [Game – Entertainment Project Ideas](#)



882. [The MAX7219 and MAX7221 Led drivers](#) These two integrated circuits from Maxim are for driving either 64 individual Led's, or up to 8 digits of 7-segment displays. The drivers implement a SPI compatible slave interface that can be controlled from the Arduino using only 3 of the digital output pins. An..... Listed under: [LED Projects](#)

883.  [Arduino Time & Temp Display Shield](#) Another project I'm working on required a good timer, but the more I read about Arduino, I realized that I couldn't make an accurate timer using an Arduino that was already devoted to other tasks. The Arduino will always lose time if you perform other..... Listed under: [Temperature Measurement Projects](#)
884.  [Measuring Battery Capacity With an Arduino](#) I needed a couple of AA batteries and found the display at the supermarket where they were all arrayed. Normally when I'm shopping in the supermarket, I tend to look at the price/kg or price/l when comparing similar products. In the case of the batteries,..... Listed under: [Battery Projects](#), [Projects](#)
885.  [Sunflower Automaton using arduino](#) This was a 6 week project created for the Spring 2012 Things That Think course at the University of Colorado at Boulder. Our project is an autonomous Sunflower. As in nature, the highest priority for our flower is sunlight, necessary for photosynthesis. Our Arduino controlled..... Listed under: [Video – Camera – Imaging Projects](#)
886.  [Arduino Optical Theremin](#) When I first became aware of Arduino, a theremin seemed like a natural project: sensor + actuator. It turned out to be quite affordable and fun to make. It is a naive design, using just one photocell and some hacked headphones. After some experimentation, I..... Listed under: [Ideas](#), [Sound – Audio Project Ideas](#)
887.  [Charlieplexing LEDs with an Arduino](#) Charlieplexing is an ingenious method for controlling many LEDs without using many microcontroller pins. You can turn on or off one LED at a time. To light more than one LED at a time, you can scan the LEDs by turning a sequence of them..... Listed under: [LED Projects](#), [Projects](#)
888.  [Mobile Earth Rover One – 3.5G Exploration using arduino](#) If you can't explore the Moon or Mars ... you can always explore your neighborhood! The main goal of this project is to alter a remote controlled vehicle and control it via Internet Telerobotics using the Mobile Telephone Network (WWAN - Wireless Wide Area Network)..... Listed under: [Robotics – Automation Project Ideas](#)
889.  [Nocturnal Emissions: My Arduino Powered Internet Enabled Dream Generator](#) We all need to dream more so I've created this Arduino Powered "dream generator" to help plant the seeds for some big thinking craziness. When you approach the generator a Maxbotix ultrasonic sensor triggers lights and music that draw you in so you can stare..... Listed under: [Internet – Ethernet – LAN Projects](#)
890.  [Light Seeking R.C Car Hack \(with Arduino\) using arduino](#) Creating a robotics platform from scratch takes allot of work and a few dollars. Buying a ready built one is easy but costs allot of money (at least for me). So instead I decided to piggy back off of the companies who make remote control..... Listed under: [Car Projects](#)
891.  [Appliance Remote Control using Arduino](#) One of the basic tasks in many home automation systems is controlling power to appliances. They could be lights, or a heater, or an exhaust fan, or just about anything else that runs on mains power. The problem of course is that it's dangerous to..... Listed under: [Home Automation Projects](#), [Robotics – Automation Projects](#)
892.  [Arduino Wireless Programming with XBee Series 1 or 2](#) Hi. This Instructable will guide you through the process of wirelessly programming your Arduino using two XBees. I just finished designing a wireless EEG system with the XBee modules, so I've become quite fluent in their programming and have just now been able to accomplish this. It still amazes..... Listed under: [Arduino Programmer Projects](#), [Projects](#)
893.  [My Arduino Binary Clock](#) Hi from Italy Although many watches are created binary, my project was inspired mainly to this: <http://www.instructables.com/id/LED-Binary-Clock-1/>, very smart and funny. I tried to improve the design and to add something personal. I think it's a good result at the end. The project is..... Listed under: [Clock – Timer Projects](#), [Projects](#)
894.  [Power Supply unit for arduino power and breadboard using arduino](#) how you can take a computer u hv old (power supply unit) and turn it into a power supply that will power your Arduino and give you all the amperage you need as well as your standard 3.3 volts, 5 volts, and 12 volts for..... Listed under: [Development Board – Kits Project Ideas](#)
895.  [Using Arduino tide predictions using arduino](#) In the previous post, I outlined some Arduino code to generate tide height predictions for a NOAA tidal reference station. Now let's do something useful with this newfound functionality. In the experiments I run, it's useful to keep intertidal animals like snails and limpets on..... Listed under: [Home Automation Project Ideas](#)
896.  [Arduino weather station part 2 using arduino](#) Sometimes I just do not have time to connect to the internet and check current weather conditions. This is the reason why I made this indoor LCD weather display based on Atmega328 Arduino MCU. The circuit board consists of two LP2950 voltage regulators, MCU, four..... Listed under: [Sensor – Transducer – Detector Project Ideas](#)
897.  [Cheap Arduino Controlled Yogurt Maker](#) These days I was reading an interesting post on how to make yogurt "by the gallon" (<http://www.instructables.com/id/Yogurt-By-The-Gallon/>). One thing needed was to maintain a rather constant temperature of 43°C (110°F), so the bacteria can grow properly. Though you can buy commercial yogurt makers, they aren't..... Listed under: [Home Automation Projects](#), [Projects](#)

898.



[Make A Low Cost LED Grid Using Arduino](#) There are a number of great Instructables on LED grids out there. This is a low cost version - not quite as polished, but easy to make. This project uses a couple of sheets of foam core, a fluorescent fixture cover from the local home..... Listed under: [LED Projects](#)
899.



[Make an Attiny13 based IR proximity sensor](#) This is an extremely cheap IR proximity sensor you can make with a few cheap parts and an AVR programmer. I use an Arduino as my programmer in this Instructable. This sensor only has a range of about 3 inches. You can easily add more..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sensor – Transducer – Detector Projects](#)
900.



[Google Weather on graphical display with Arduino](#) In this project, I am using an Arduino board to show forecast of the weather from Google Weather service on a VGA screen. The display is obviously graphical one, with icons and some colorful text. It is one of those gadgets I wanted to have..... Listed under: [Internet – Ethernet – LAN Projects](#), [LCD Projects](#), [Projects](#)

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