



# Go Faster

Ollie Phillips

# Go Faster

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Ollie Phillips

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# Preface

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# About the Author

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# Before you begin

Some pointers to help you get the most from *Go Faster*

## Go Playground

Throughout *Go Faster* we use example code which in most cases is also provided as executable snippets on the Go Playground. You can also use the playground to test your code if you don't have a local development environment. You can find it here:

<https://go.dev/play/>

All the examples, listed by chapter can also be found on Github here:

<https://github.com/golangatspeed/GoFasterExamples>

## Installing Go

If you do want to set up your local environment, you'll need to download and install a recent version of Go.

At the time of writing the latest version is 1.19. You can get a distribution for your operating system here:

<https://go.dev/dl/>

## Editing code locally

You'll have more fun writing Go in a text editor which offers Go-specific helper functions such as code completion, formatting and automatic imports.

Either *Visual Studio Code* - with the appropriate plugins - or *Goland* which has full Go support out-of-the-box, is recommended.

There are links to download pages for both applications below.

- Visual Studio Code - <https://code.visualstudio.com/download>
- Goland - <https://www.jetbrains.com/go/>

## A word on the code examples

*Go Faster* was written on *macOS*, so many of the command line examples will contain Mac/Linux-specific syntax. For example, directory paths are Mac/Linux style and not Windows style.

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# Chapter 5 - Dependency management

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### 7.1.2 Boolean

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### 7.1.3 String

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### 7.1.5 Rune

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### 7.2.1 Array

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### 7.6.1 Type conversion

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## 8.1 Control structures

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### 8.1.1 Sequence logic

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### 8.1.2 Selection logic

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#### 8.1.2.1 If/else/elseif

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### **8.1.3.6 Break & Continue**

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### **8.2.1 Error helpers**

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### 8.2.2 Custom error types

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## 9.1 Developing with functions

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### 9.1.1 Function parameters

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### 9.1.3 Multiple return values

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### 9.1.4 Function return styles

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### 9.1.5 Functions are a type

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### 9.1.5 Pointer or value returns

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### 9.2.3 Garbage collection

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## 9.3 Using receivers with custom types

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### 9.4.1 Recapping

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### 9.4.2 Creating interfaces of our own

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### 9.5.1 Type assertion

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### 9.5.2 Reflection

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## 9.6.3 Summary

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### 10.1.1 The `go` keyword

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### 10.2.1 Conventions

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### 10.2.2 The `context.Background()` empty context

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### 10.2.3 The `context.TODO()` empty context

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### 10.5.4 Signalling using an unbuffered channel

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### 10.5.5 Closing a channel

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### 10.5.6 Using range with channels

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## 10.5.7 Monitoring several channels with select

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## 10.6 Summary

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# Chapter 11 - Quality Assurance

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## 11.1 Testing

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### 11.1.1 Test file setup

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### 11.1.2 Test functions

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### 11.1.3 Test coverage

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### 11.1.4 Subtests

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### 11.1.5 Example tests

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## 11.2 Benchmarking

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## 11.3 Profiling

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### 11.3.1 Obtaining profiles with the test tool

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### 11.3.2 Obtaining profiles from a running program

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### 11.3.3 Analysing a profile with the pprof tool

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# Glossary

API - Application Programming Interface

CLI - Command Line Interface

CPU - Central Processing Unit

CRUD - Create, Read, Update, Delete

FIFO - First In First Out

IDE - Integrated Development Environment

JSON - JavaScript Object Notation

LIFO - Last In First Out

NOOP - No Operation

OOP - Object-Oriented Programming

OS - Operating System

REST - Representational State Transfer

Stdout - Standard Out

URL - Uniform Resource Locator