



REACT DEV CONF

08.18 / 广州

如何把业务逻辑这个故事讲好

有限状态机与React开发

How to tell the story of business logic
Finite state machine & React

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前端工作者

Cloud Safe FrontEnd Team

打造云安全领域最强前端团队
虚位以待!

前端开发最难的部分

表现层

视觉
交互

数据 × 状态

业务逻辑

状态是什么？

现实，状态是某一时刻看到或感受到的状况

设计，状态是UI在交互过程中某一时刻的画面

开发，状态是存储上下文中所用到的数据

$$UI = f(\text{state})$$


1. JSON数据

2. 公共变量

3. 标识符

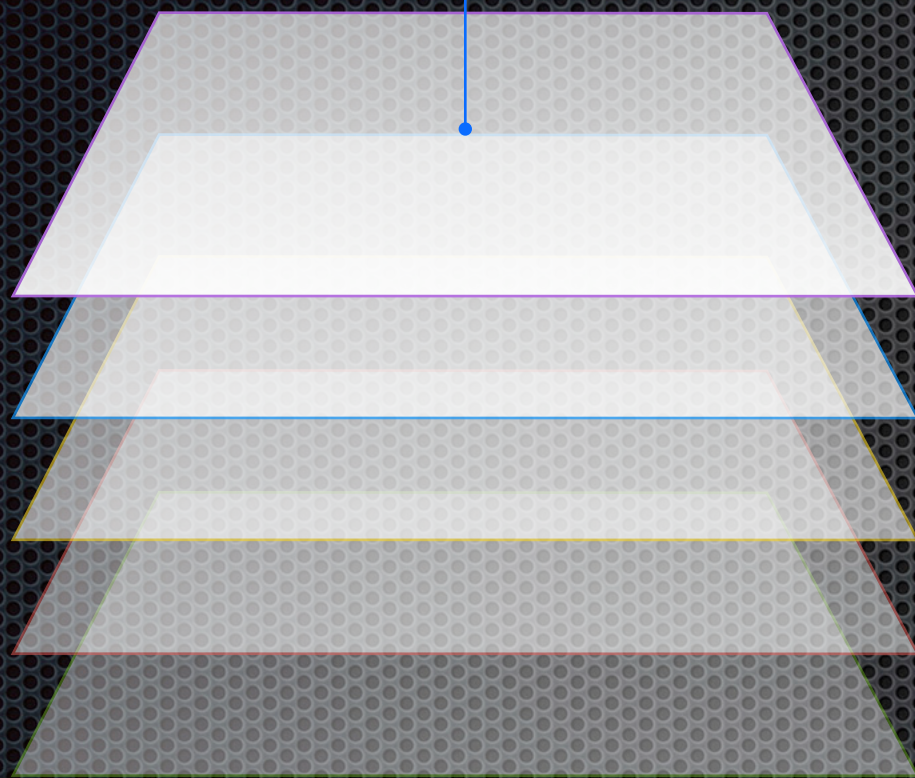
Data

UI状态

Scott Hurff 的UI栈

UI Stack

$$N_i + N_e + N_p + N_l + N_b$$



- Blank State 空白状态
- Loading State 加载/过程中状态
- Partial State 不完整状态(内容/属性缺失/权限)
- Error State 错误状态(显示/交互)
- Ideal State 理想状态

状态管理，越管越乱

2015后 -

Redux-Saga / MobX / Vuex / Dva...

优化连接、下发和异步行为

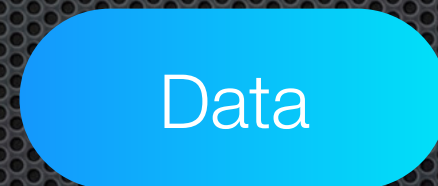
2015 - Redux



2013 - Flux



2010 - Backbone

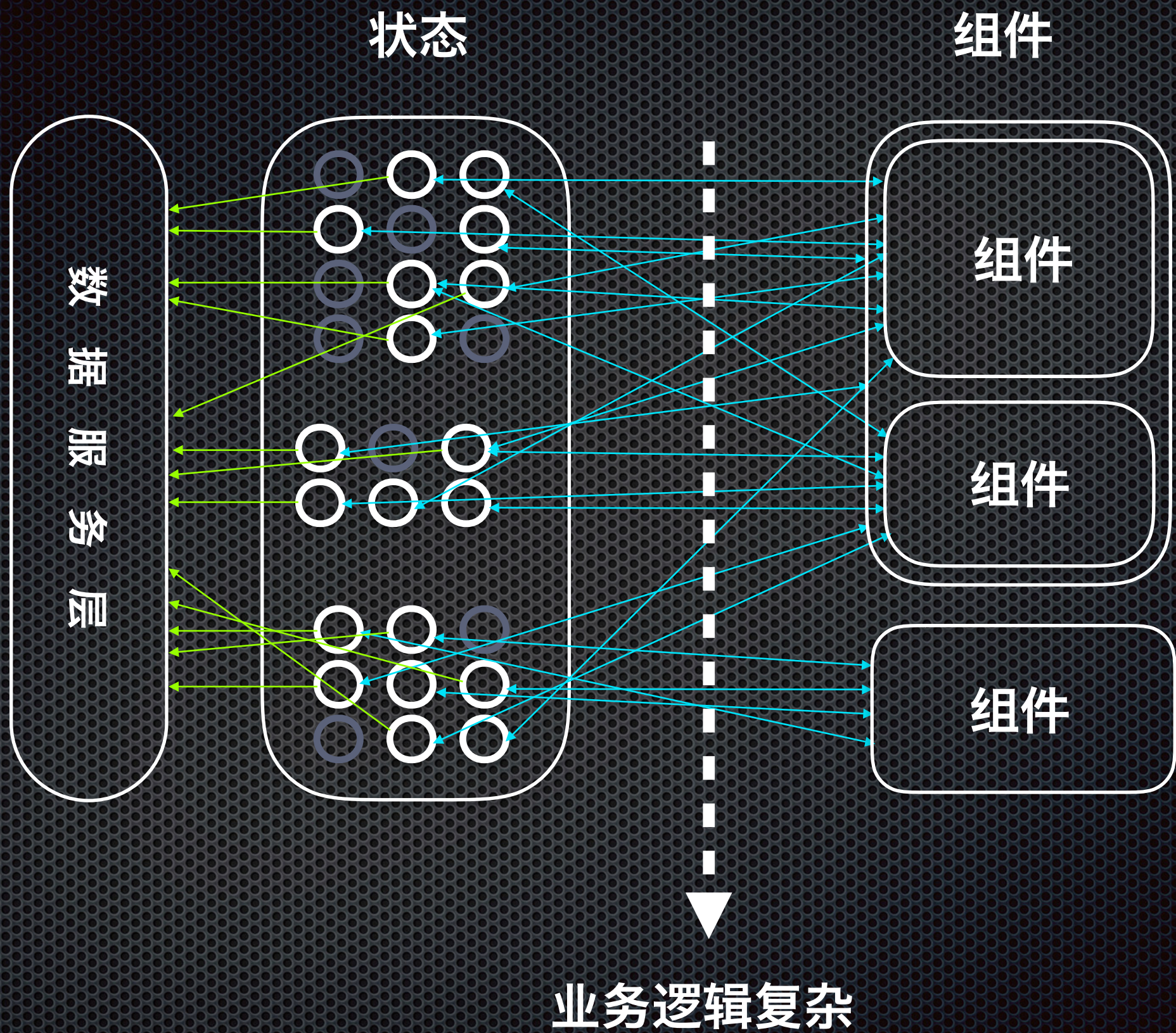




分类存放

优化分类存放

导致更大的复杂度



复杂业务逻辑的code smell:

1. action太多, 业务逻辑有若干分支和行为组成
 2. 各种if-else分散在action和不同层级的高阶组件里
 3. 产品逻辑调整, 带来“霰弹式”修改
 4. 跨组件共用的状态和数据太多
 5. 组件组合关系复杂、分散, 代码难读
 6. 各种工具制造的概念太多, 学习成本越来越高
 7. 多余的状态被误触发, 组件树连锁rerender
 8. 冗余的状态成为“钉子户”
-

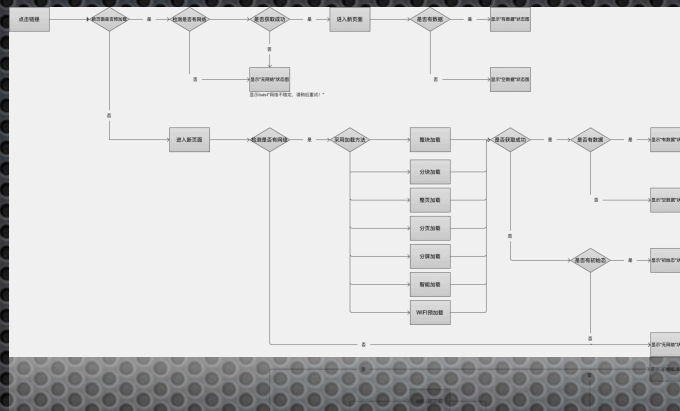
什么能把业务逻辑 这个“故事”讲清楚？

Article 7. Subdivision Review	
Table 7.1 Subdivision Review At A Glance	
Steps in the Process:	Responsibility of:
Sketch Plan (all subdivisions):	
1. Submission of sketch plan, including any waiver requests	Applicant; at least 15 days prior to a regularly scheduled Development Review Board meeting
2. Development Review Board meeting	Attendance of applicant or designee required
3. Classification of subdivision as minor or major; written recommendations re: sketch plan	Development Review Board; within 30 days of completion of sketch plan review
Minor Subdivision (residential < 5 lots):	
1. Submission of final subdivision plan, including any waiver requests, proposed plat and supporting documentation	Applicant; within 6 months of the date of sketch plan approval
2. Development Review Board public hearing	Development Review Board; within 30 days of receipt of the final subdivision plan
3. Subdivision/plat approval	Development Review Board; within 45 days of the hearing adjournment date
4. Final plat recording in the town records	Applicant; within 90 days of the date of subdivision approval
5. Submission of as-built drawings	Applicant; upon completion
Major Subdivision (other than minor):	
1. Submission of preliminary subdivision plan including any waiver requests, supporting documentation	Applicant; within 6 months of the date of sketch plan approval
2. Development Review Board public hearing	Development Review Board; within 30 days of receipt of the preliminary subdivision plan
3. Preliminary subdivision/plat Approval	Development Review Board; within 45 days of the hearing adjournment date
4. Submission of final subdivision plan, including supporting documentation	Applicant; within 6 months of the date of preliminary plan approval
5. Final Development Review Board public hearing	Development Review Board; within 30 days of receipt of the final subdivision plan
6. Final subdivision/plat Approval	Development Review Board; within 45 days of the hearing adjournment date
7. Final plat recording	Applicant; within 90 days of the date of final subdivision and plat approval
8. Submission of as-built drawings	Applicant; upon completion

Page 122 Bennington Land Use & Development Regulations

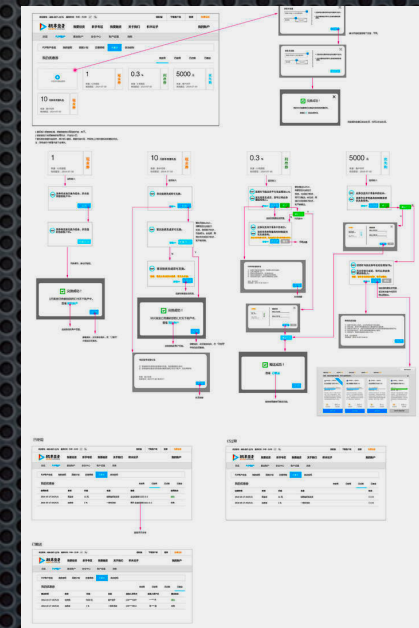
文档？

冗长 / 功能 / 无交互逻辑
版本管理



流程图？

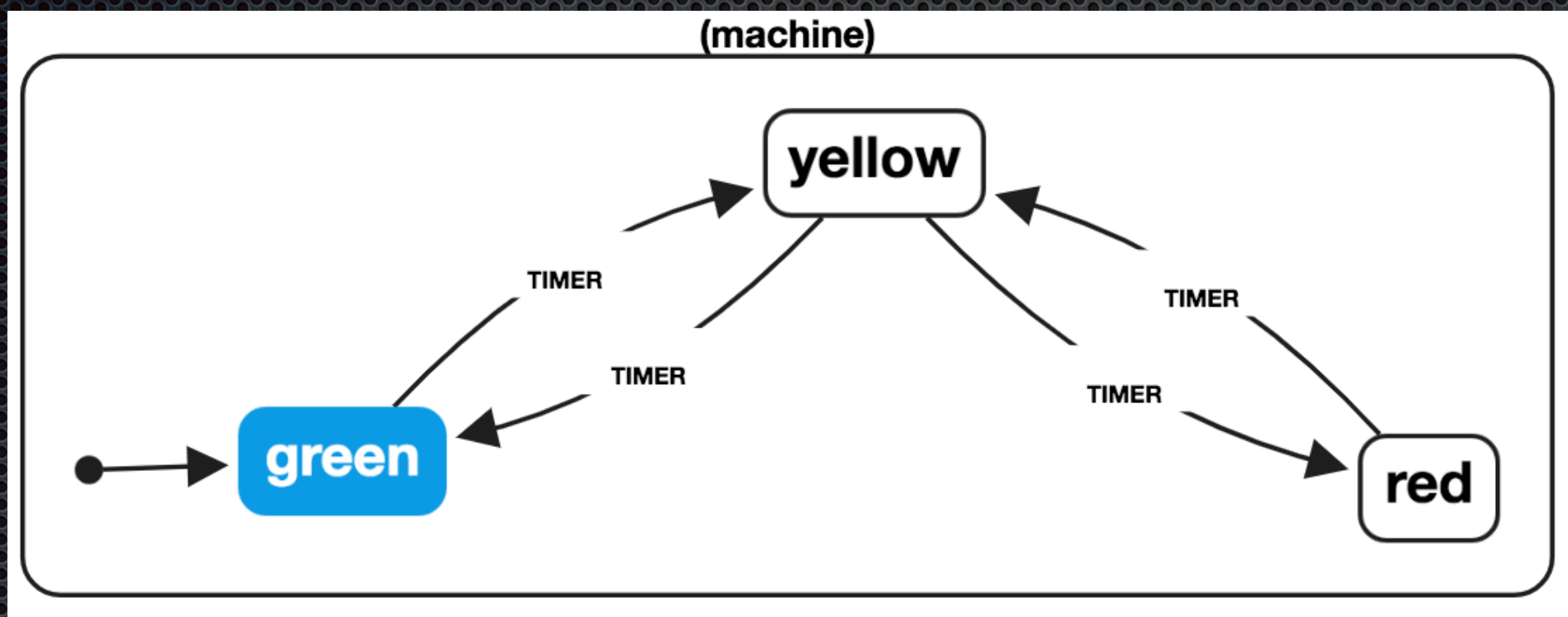
缺少细节 / 无交互逻辑
版本管理



交互稿？

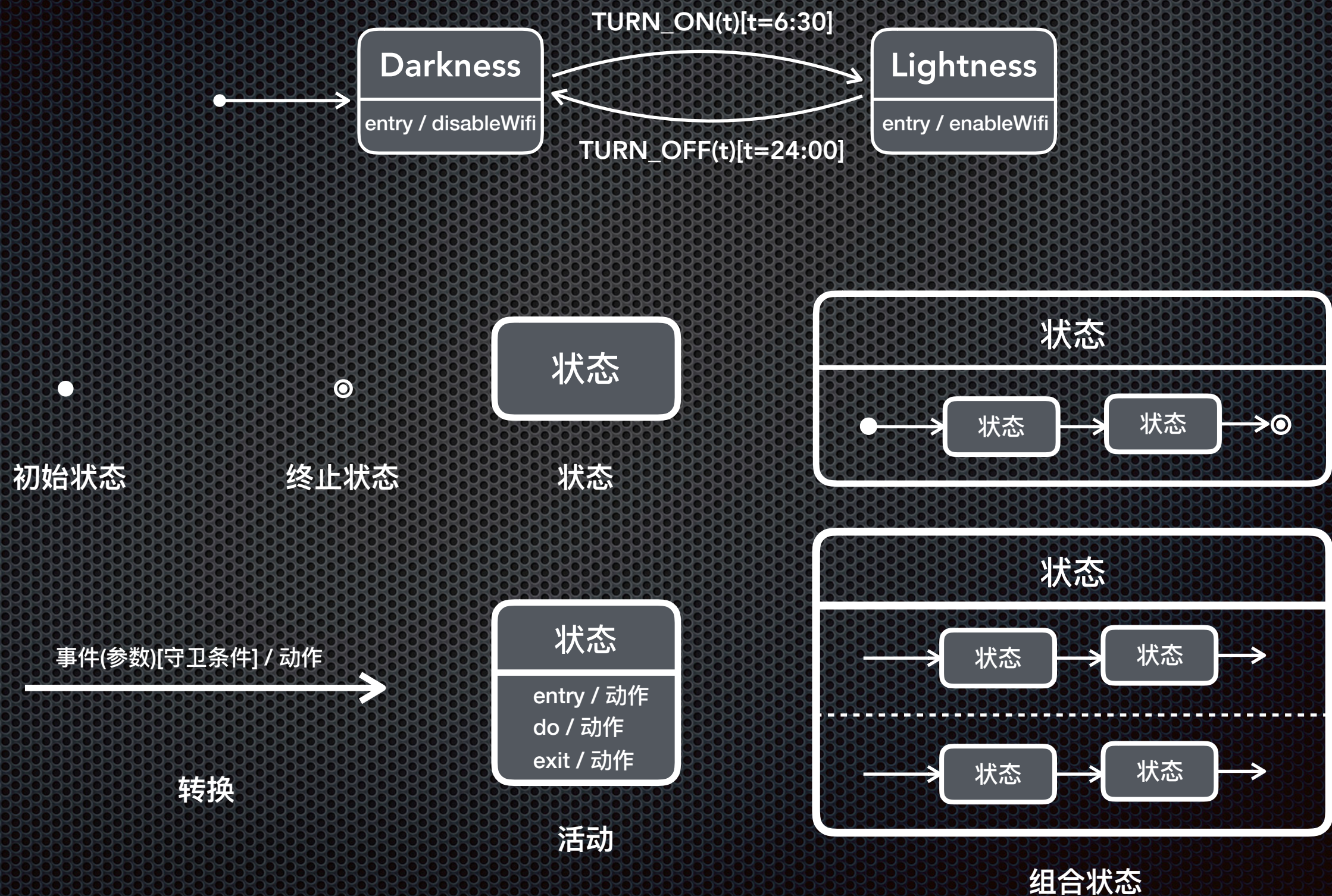
讲不清楚 / 时间成本
版本管理

用状态机讲“故事”



DEMO

有限状态机，是表示有限个状态以及在这些状态之间的转移和动作等行为的数学模型。
有限状态机4要素，即**现态**、**条件**、**动作**、**次态**。



特点

1

可预测性

2

高可靠性

3

隔离性

4

可视化

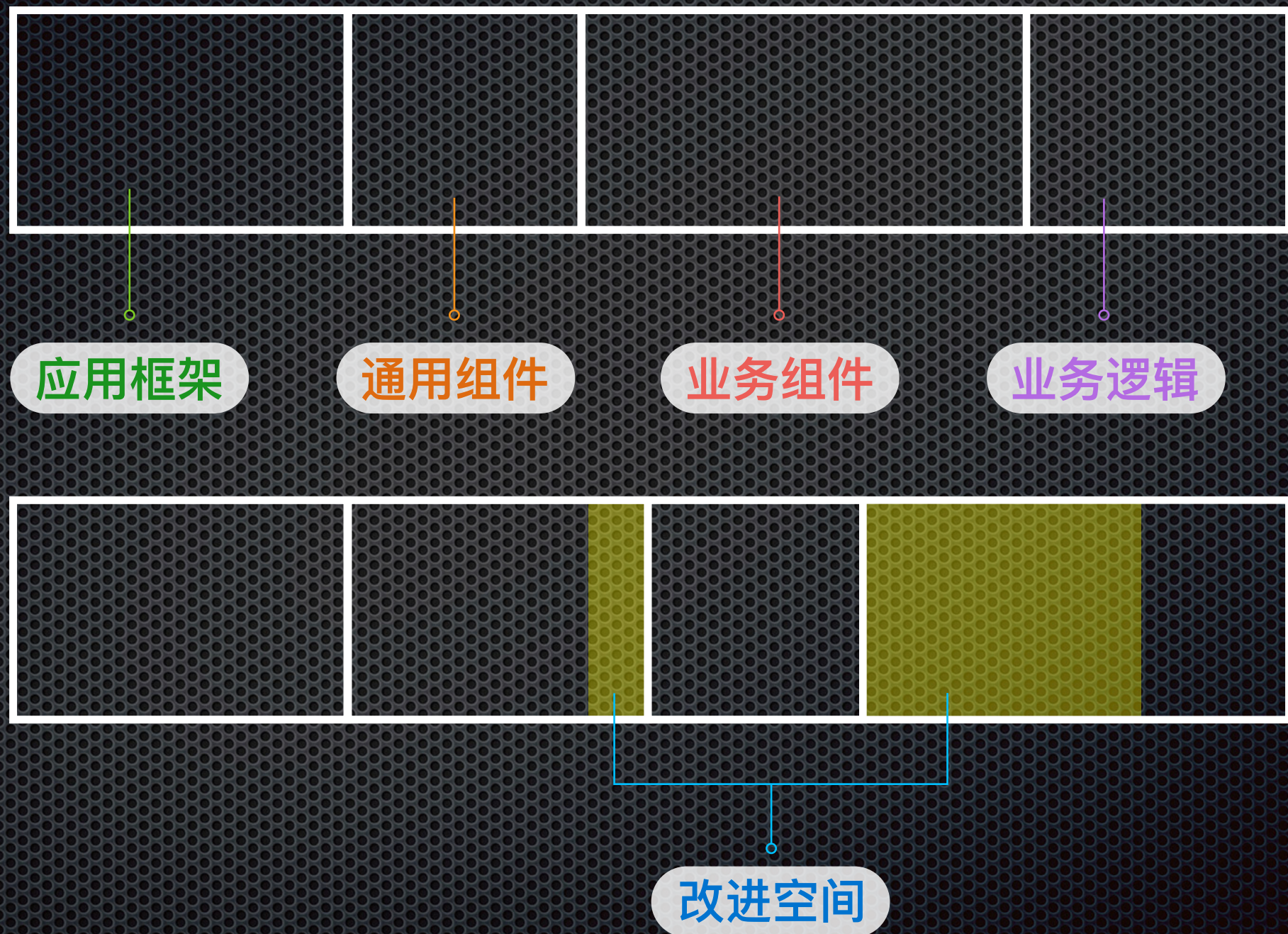
5

设计成本

6

逻辑性强

前端开发的复杂度守恒图





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2016-1-14 17:08 来自 微博 weibo.com

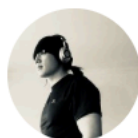
目前看到的方案中可以有效将数据流跟组件分离的，唯有redux了吧。做SAP，react-router / react-redux / redux-simple-router 搭配很爽～

阅读 8689 推广

🔗 6

💬 1

👍 13



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4月16日 13:05 来自 微博 weibo.com

从最初flux提出一种状态管理的模式后，一路派生出很多库，套路越来越深。这个则重新思考状态管理，值得关注 [🔗 网页链接](#)

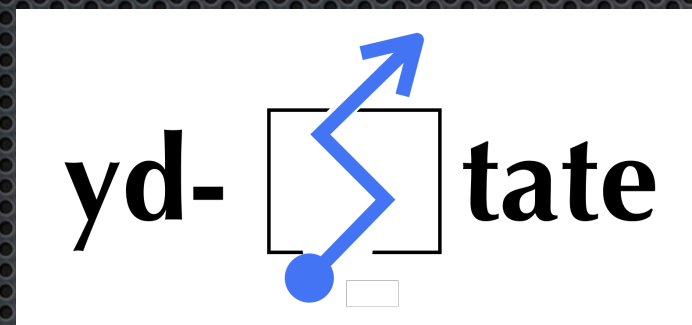
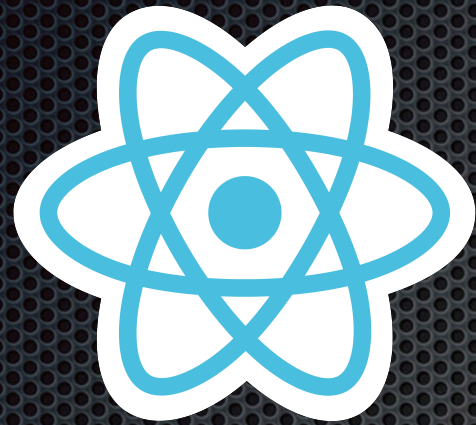
🔼 收起 | 🔍 查看大图 | ↶ 向左旋转 | ↷ 向右旋转

“A statechart is a magic-box:
you tell it what happened,
and it tells you what to do.”

Luca Matteis, 2018

@kejunz

React-Automata
XStateful
Faste
JavaScript-State-Machine
...



XState
github: davidkpiano/xstate

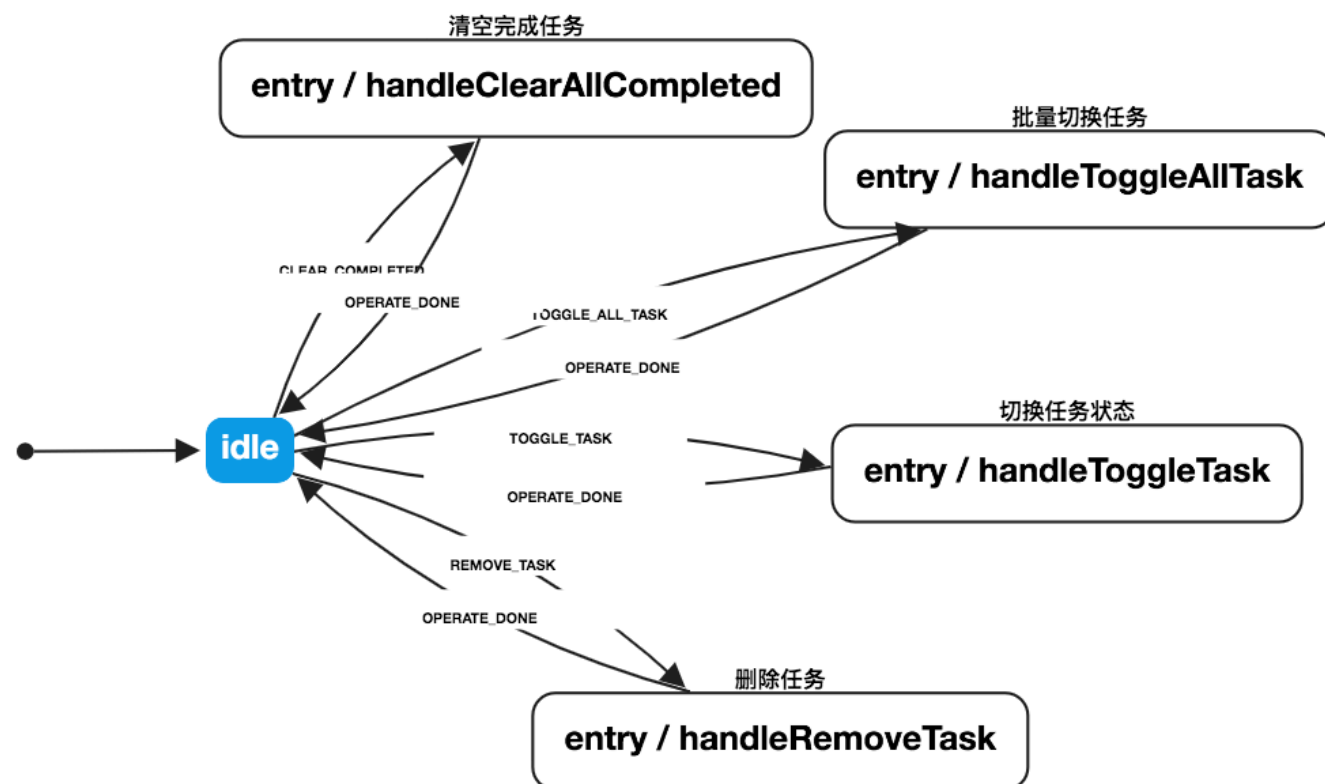


Redux

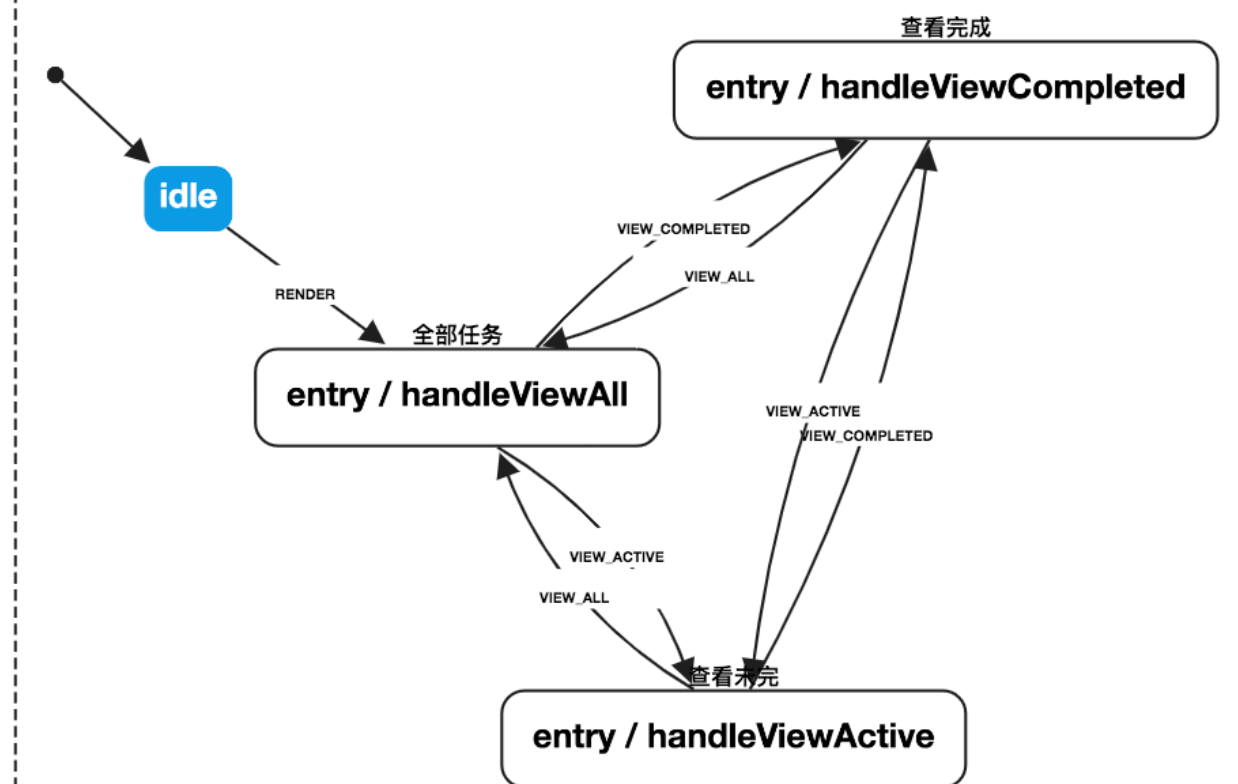
复杂一些的Demo: TodoMVC

(machine)

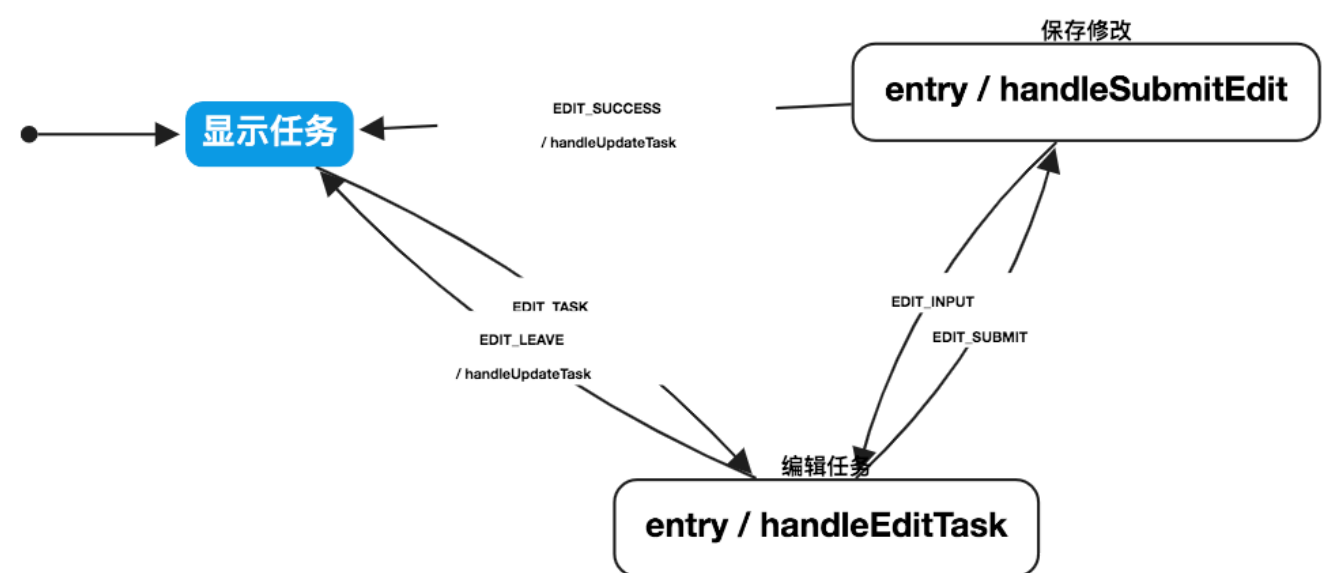
清单操作



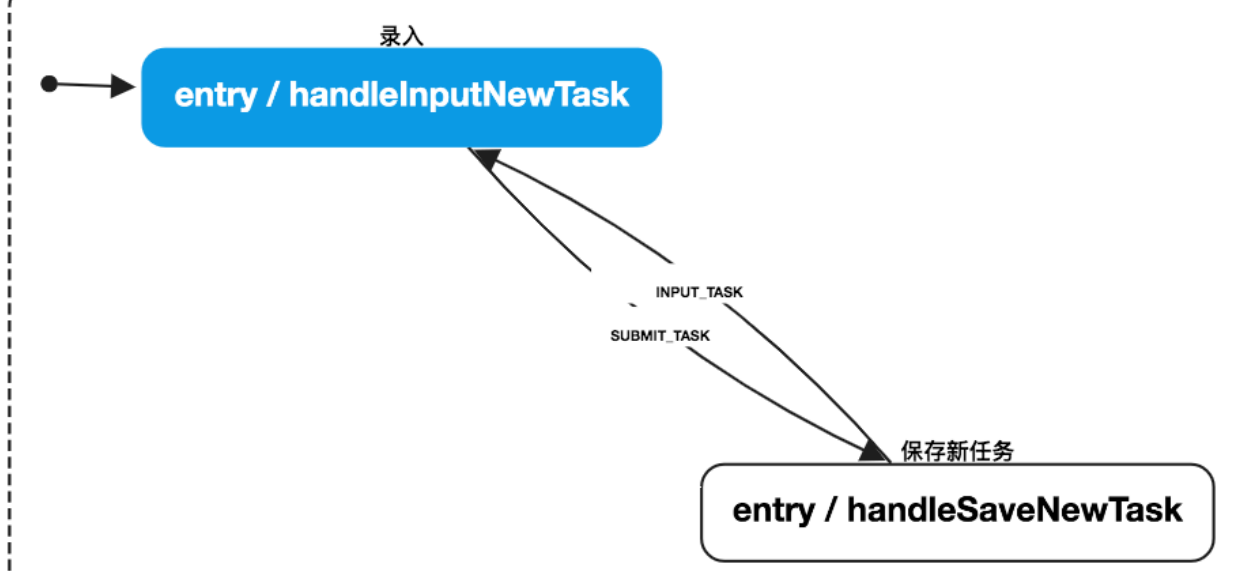
清单过滤



编辑单个任务



创建新任务



Thanks :)

谢谢