REACT.JS

A JavaScript library for building user interfaces

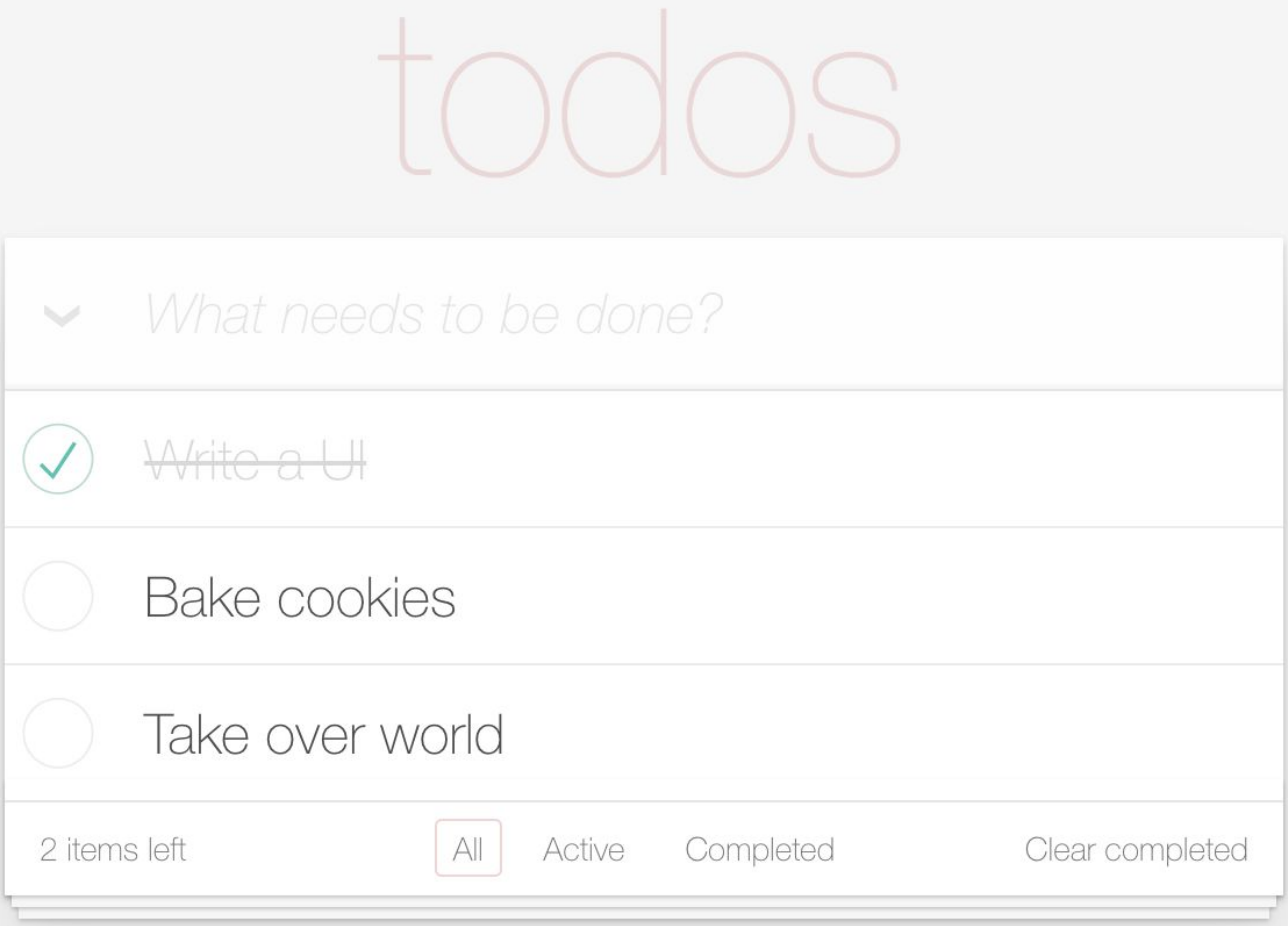
PROBLEM: MAKING A USER INTERFACE IS HARD

WHY: SO MUCH STUFF TO REMEMBER!

STATE + VIEW

- Every user interface has data (which we often call “state”), and presents something based on that data

- Any change to the underlying data should be reflected in the view



todos

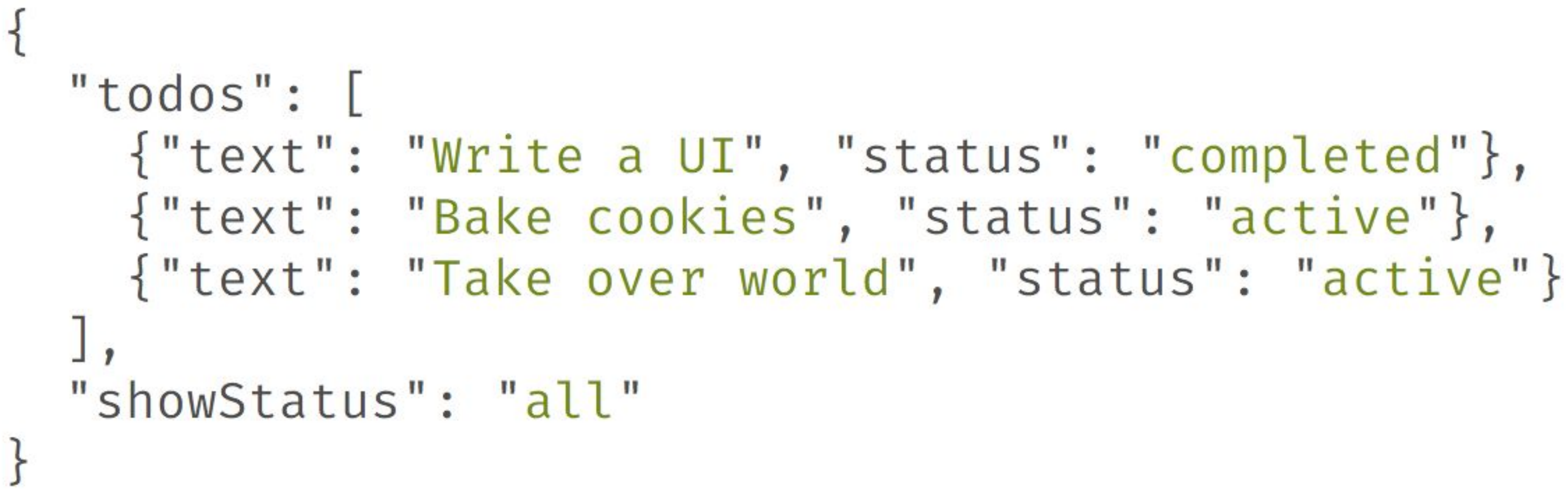
What needs to be done?

☑ ~~Write a UI~~

○ Bake cookies

○ Take over world

2 items left



```json
{
  "todos": [
    {"text": "Write a UI", "status": "completed"},
    {"text": "Bake cookies", "status": "active"},
    {"text": "Take over world", "status": "active"}
  ],
  "showStatus": "all"
}
```

“Let’s just wrangle the DOM to look like we want”

Cowboy Coder,
2010

ADD A TODO

- **Push to our “todos” array**
- **Append a new element to the DOM**

WAIT

- Push to our “todos” array

- Does the “status” of the todo match what we’re currently showing?
  - Yes: Append a new element to the DOM
  - No: Okay, don’t append a new element to the DOM

WAIT

- Push to our “todos” array

- Does the “status” of the todo match what we’re currently showing?
  - Yes: Append a new element to the DOM
  - **No: Okay, don’t append a new element to the DOM**

OKAY, NOW WE SWITCH BACK TO ALL

- **Change the “showStatus” to “all”**
- **Check our list of “todos” and add any that aren’t showing back in**
  - But make sure they’re in the right order!
    - Don’t just wipe the slate clean though - that’s bad for performance!
  - Also make sure to change the highlighting so that “All” looks selected

OKAY, SO REMEMBERING TO CHANGE THE VIEW AFTER WE CHANGE THE DATA IS HARD…

…WHAT IF WE GOT RID OF THE DATA?

“Let’s put the todo data on the DOM node”

Cowboy Coder, 2010

SO WHAT IF WE COULD JUST CHANGE THE DATA, AND THE VIEW WOULD…

…REACT?

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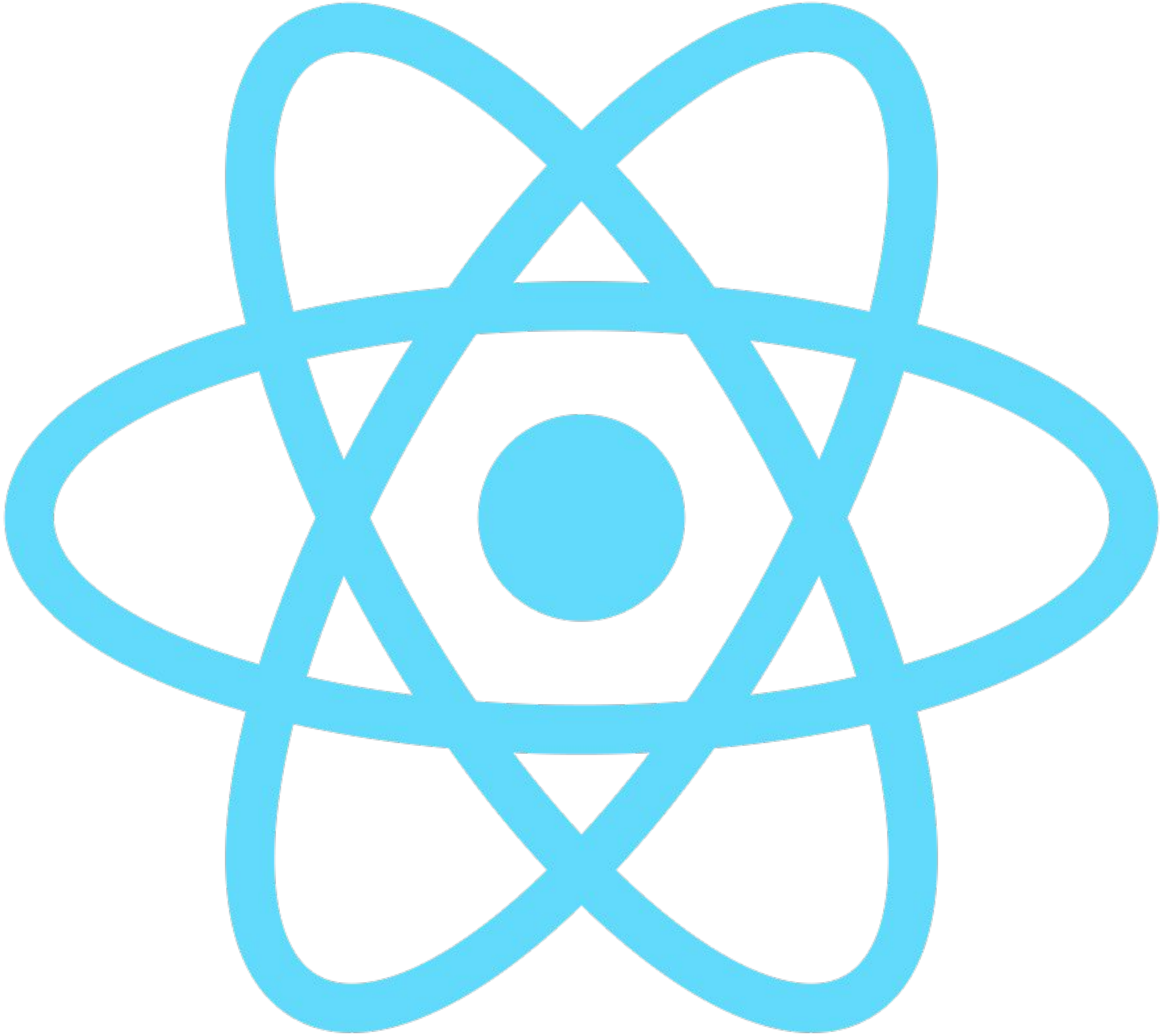

REACT

- **Data is called “state”**
  - More precisely: “state” is data that *changes*
- **When you update “state”, React re-renders the view for you**
- **React re-renders the view in a performant way**

“Let’s mutate the state object directly”

Cowboy Coder, current day

SET STATE

- **We do not directly mutate “state”**
  - **Ex: we DO NOT say** `state.showStatus = “all”`
- **We use a method called** `setState`
  - **Ex. we DO say** `this.setState({showStatus: “all”})`
- **Why? So that React can handle things intelligently if multiple updates happen all at once!**

React

change

setState

updated view

WHEN YOU SET STATE, REACT WILL UPDATE THE VIEW

LET’S WRITE YOUR FIRST COMPONENT!