

INTRODUCTION TO

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REACT

# ABOUT AMBROSE

- ▶ Glad dad of 6 munchkins.
- ▶ Making pro software for ~18 years  
Computer geek since 1987
- ▶ Shipped over 45 projects, led over 20. 2 Patents. Sometime dev, arch, UX guy, manager, PM, etc.
- ▶ 8x Microsoft MVP; Books, Blogs...
- ▶ Voted Most Likely to Wear a Kilt to Work



# THE PLAN

- ▶ Why React?

The Strange History of Computing that Led Up to this Little Thing We Call React (j/k)

- ▶ Key Concepts

Or what I think is important, anyways.

- ▶ With the Showing of Some Examples

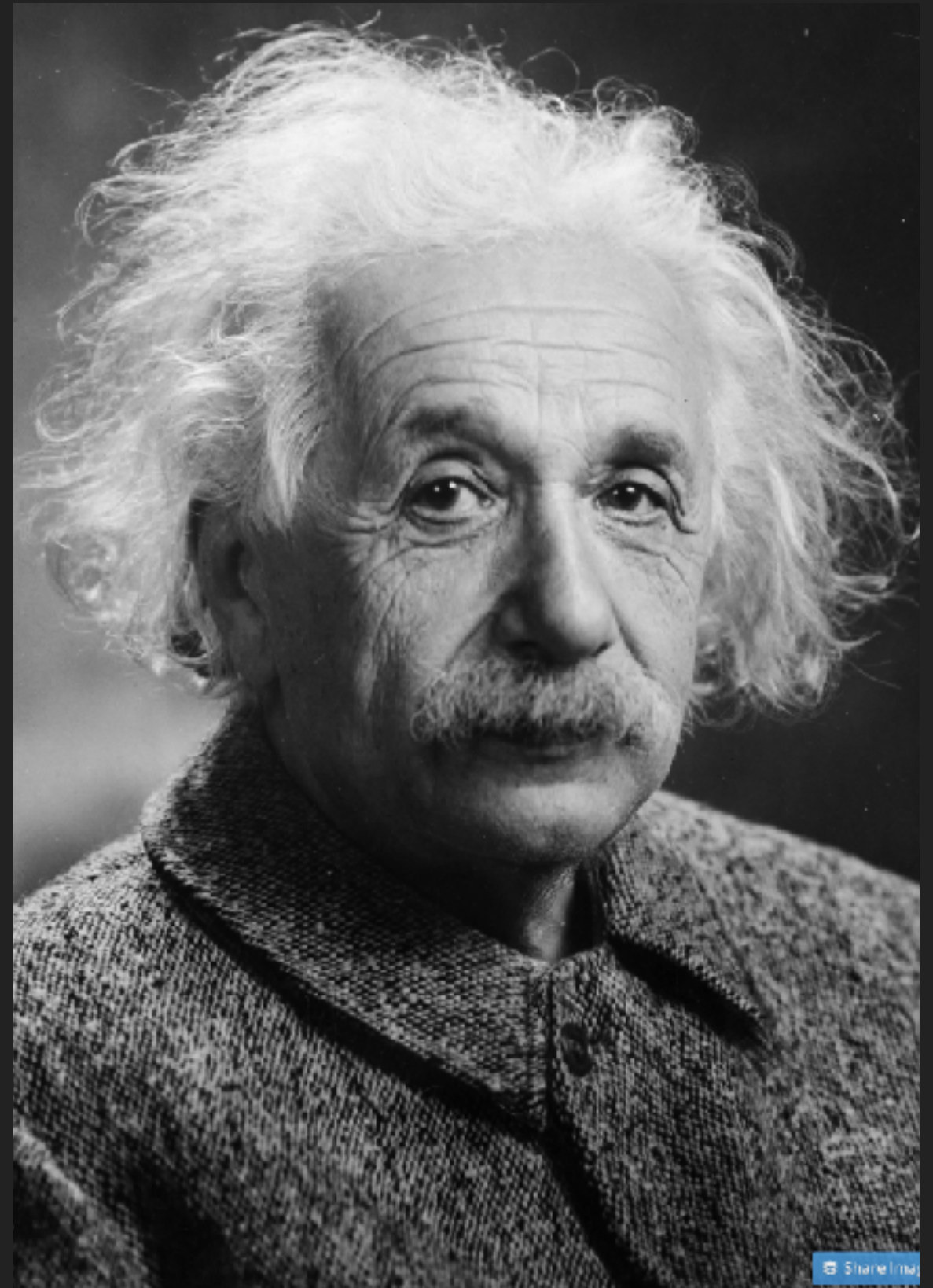
May or may not be in chronological order.

- ▶ Now for a Limited Time: Things I Wish I'd Known!



# ABOUT YOU?

- ▶ You have some programming experience, probably a Web developer of some sort.
- ▶ You are conversant with JavaScript, ideally ES2015+.
- ▶ You don't barf at the site of JSX.
- ▶ You are not a React expert.



# WHY REACT?

- ▶ Declarative (State-Driven/Functional)
- ▶ Component-based (Composable)
- ▶ Flexible Rendering
  - ▶ Client Web
  - ▶ Server (Web)
  - ▶ Native Client (React Native)
- ▶ High Performing
- ▶ Minimally Invasive



# PREFACE: GETTING REACT

- ▶ <https://reactjs.org/> - The Homepage
- ▶ For my examples, using:  
<https://github.com/facebookincubator/create-react-app>
- ▶ `create-react-app <name>` and done
- ▶ Sir Not Appearing in this Film:  
<https://reacttraining.com/react-router/>

KEY CONCEPT #1

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**THINGS ALWAYS SEEM SIMPLE AT  
FIRST**

## KEY CONCEPT #2

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**JSX**

**THAT HORRIFIC BLEND OF JS AND X**



# IT'S JUST MARKUP

```
<div className="App">
  <header className="App-header">
    <img src={logo} className="App-logo" alt="logo" />
    <h1 className="App-title">Welcome to React</h1>
  </header>
  <p className="App-intro">
    To get started, edit <code>src/App.js</code> and save to reload.
  </p>
  <MyComponent useYourImagination="You know, the usual FooBar stuff." />
</div>
```

## IT'S NOT JUST MARKUP

```
<div className="App">  
  <header className="App-head">  
    <img src={logo} className="App-logo" alt="logo" />  
    <h1 className="App-title">  
      </h1>  
  </header>  
</div>
```

# SOME COMMON DYNAMIC UI SCENARIOS

- ▶ Conditional Rendering
  - ▶ The && Approach
  - ▶ The ? : Approach
  - ▶ The Strategy Pattern Approach
- ▶ Repeating

## JUST SAY NO TO SPAGHETTI CODE

- ▶ Minimize in-JSX JS. Move that to functions and use Strategy Pattern.
- ▶ Be zealous about composition. But not artificially. Look for the natural boundaries, similar to OOD.

KEY CONCEPT #3

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**REACT IS FUNCTIONAL (SORTA)**

# YOU GOTTA CHANGE YOUR THINKING A BIT

- ▶ You don't write code that directly manipulates the DOM (usually—see 'ref').
- ▶ You can't write code that directly manipulates React elements.
  - ▶ You modify state that signals what you want to React.
  - ▶ You compose elements to achieve outcomes.
- ▶ Somewhat similar to MVVM (particularly the VVM)



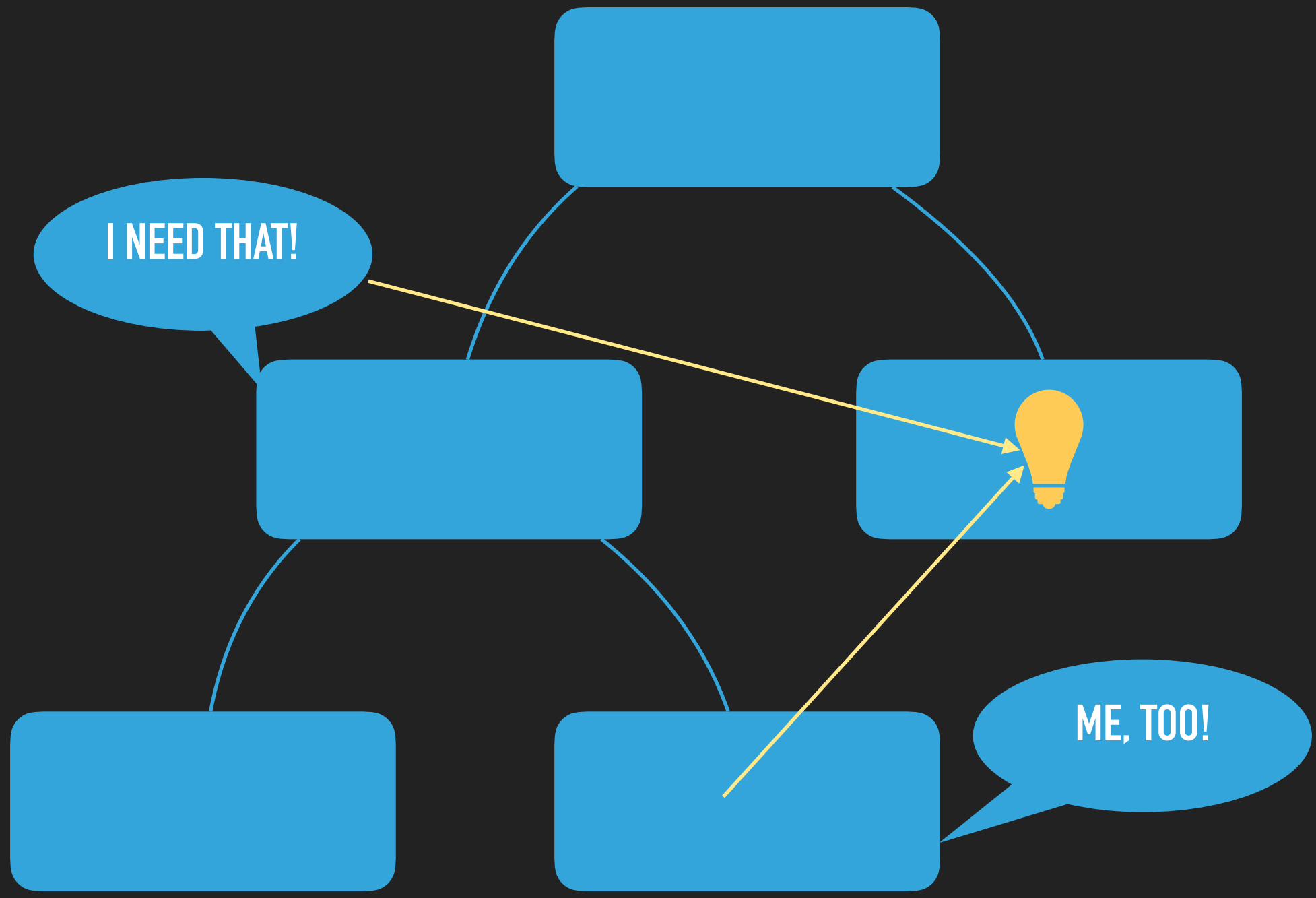
# GET FRIENDLY WITH ARRAY.MAP AND ARRAY.FILTER

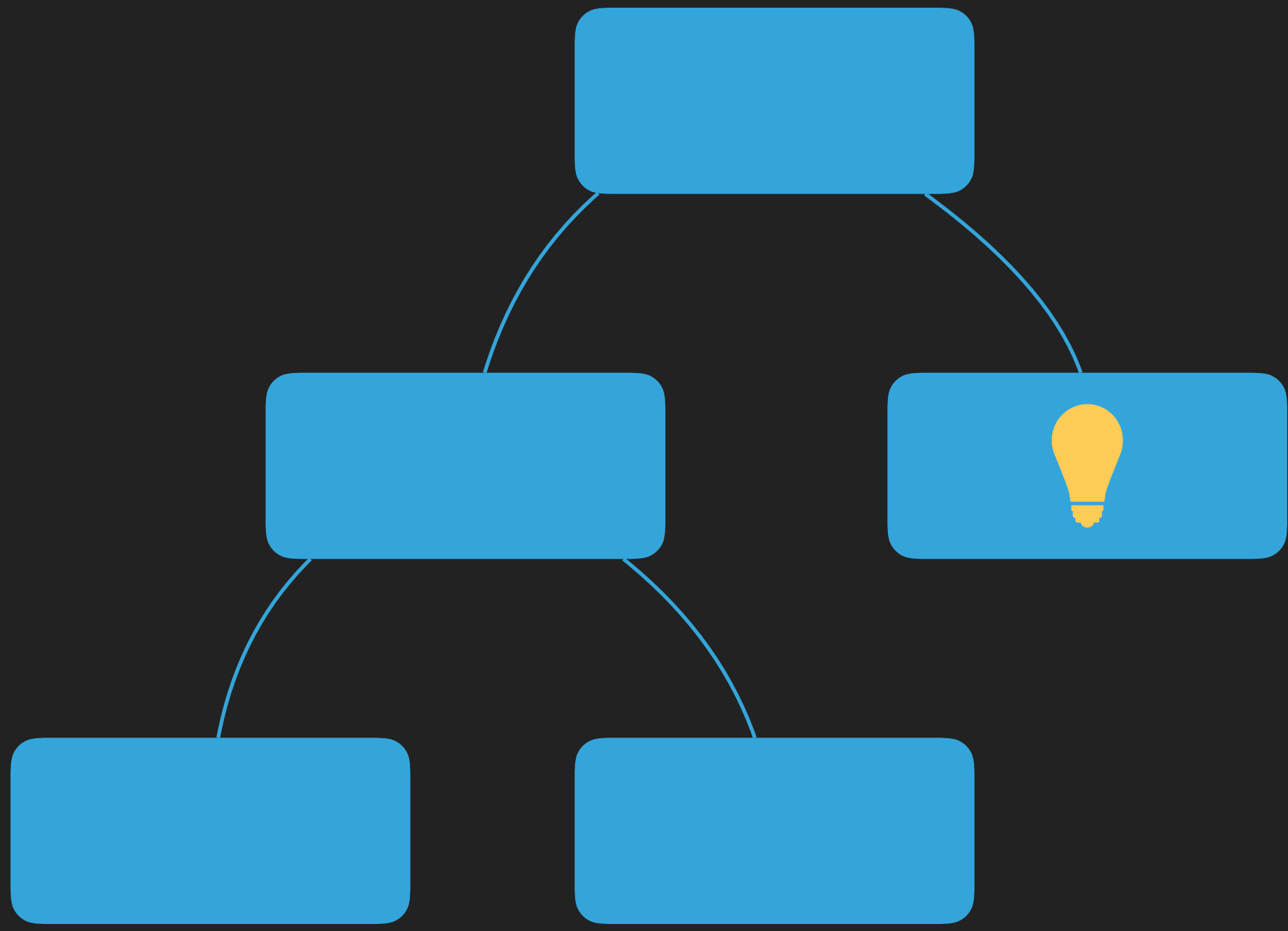
## COMPONENT COMMUNICATION

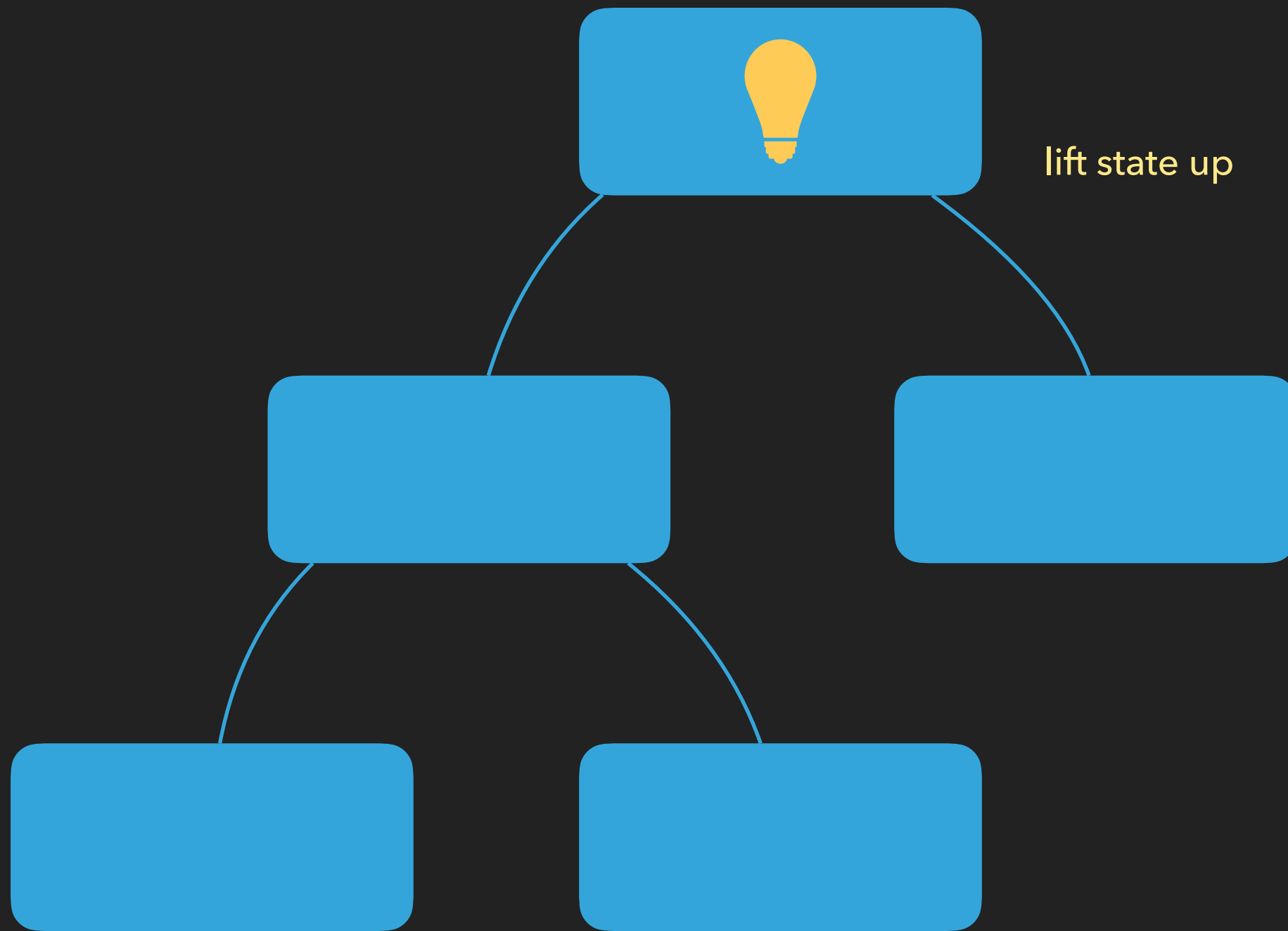
 **PROPS DOWN**  
**EVENTS UP** 



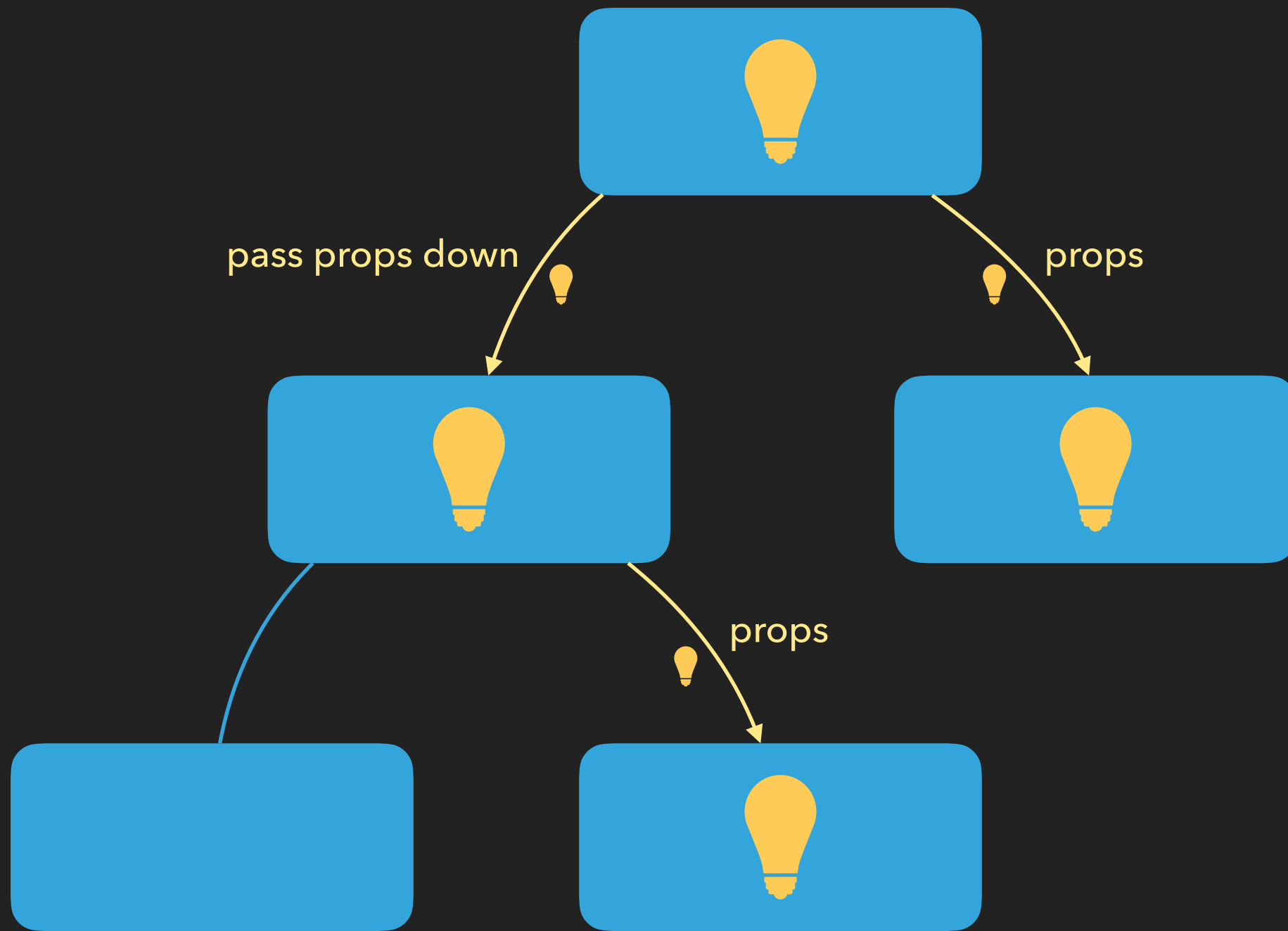
**LIFTING  
STATE...**











**SPEAKING OF STATE..  
WHAT ABOUT LETTING USERS  
EDIT IT?**

Some Experienced Developer

KEY CONCEPT #4

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**CONTROLLED COMPONENTS**

# UNCONTROLLED...

```
class NameForm extends React.Component {
  constructor(props) {
    super(props);
    this.handleSubmit = this.handleSubmit.bind(this);
  }

  handleSubmit(event) {
    alert('A name was submitted: ' + this.input.value);
    event.preventDefault();
  }

  render() {
    return (
      <form onSubmit={this.handleSubmit}>
        <label>
          Name:
          <input type="text" ref={(input) => this.input = input} />
        </label>
        <input type="submit" value="Submit" />
      </form>
    );
  }
}
```



KEY CONCEPT #5

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**TESTING REACT**

# THAT'S IT! YOU'VE SEEN...

- ▶ Key Concepts & How to Do Some Things
- ▶ Get React into a Page
- ▶ Make & Compose Components to Layout Your View
- ▶ Classic vs. Functional Components
- ▶ How to Do Looping (Repeaters)
- ▶ Conditional Rendering
- ▶ How to Handle Interactions
- ▶ How to Handle User Input
- ▶ What Else is There?! :D



**REPETITIO MATER STUDIORUM  
EST.**

**Ancient Dude**

**REPETITION IS THE MOTHER OF  
ALL LEARNING.**

**Dude What Speaks Modern English**



**GO FORTH AND  
ENJOY!**