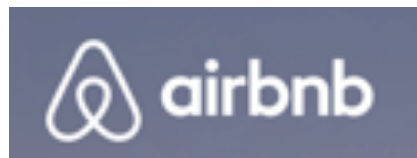


React

A JavaScript Library for Building User Interface



Show Cases



More: <https://github.com/facebook/react/wiki/Sites-Using-React>

Outline

- React overview
- Hands-on practice: Todo List
- Advanced project: App Store (follow-up)

React Overview

- Origin of React
 - Solve Facebook's advertisements problem
- JavaScript **Library**, not a Framework
 - *Easy to learn*
 - *Single responsibility*
 - *View of MVC*
- Developed and released by Facebook at 2013

Hello World

<pre>1 <div id="container"> 2 <!-- This element's contents will be replaced with your component. --> 3 </div> 4</pre>	HTML ⚙️	1
<pre>1 var Hello = React.createClass({ 2 render: function() { 3 return <div>Hello {this.props.name}</div>; 4 } 5 }); 6 7 ReactDOM.render(8 <Hello name="World" />, 9 document.getElementById('container') 10); 11</pre>	BABEL ⚙️	Hello World

[Link: https://jsfiddle.net/ldong/69z2wepo/28629/](https://jsfiddle.net/ldong/69z2wepo/28629/)

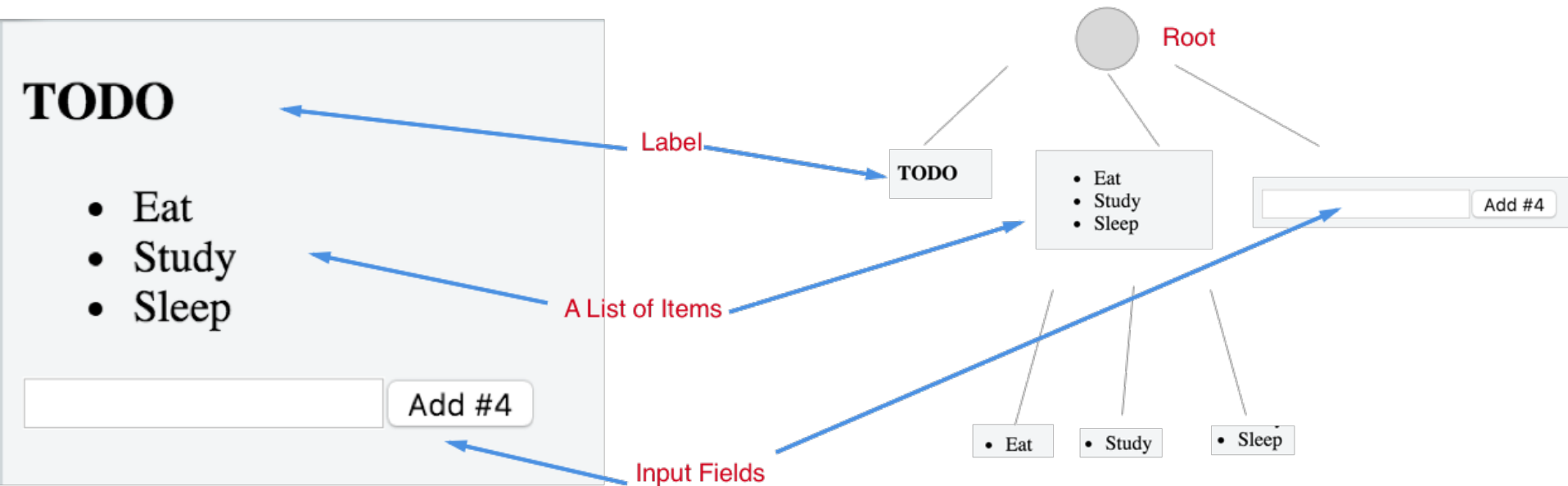
Todo List

TODO

- Eat
- Study
- Sleep

[Full demo](https://jsfiddle.net/ldong/apao5wse/7/): <https://jsfiddle.net/ldong/apao5wse/7/>

From UI to Components



Composability

- React is composable from the core
- From pieces to whole

Big Component



Small Component



Todo List display

jsfiddle Demo

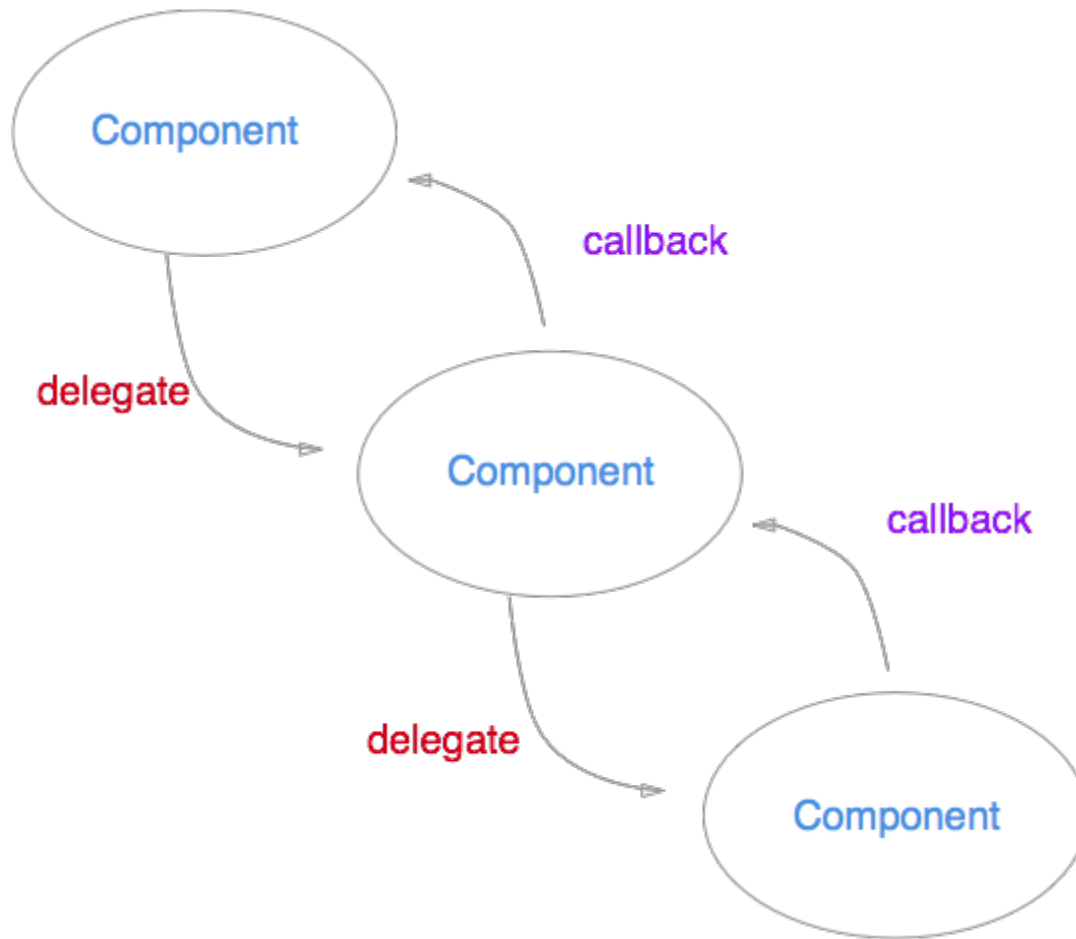
Todo List event handlers

[jsfiddle Demo](#)

Todo List state change

jsfiddle Demo

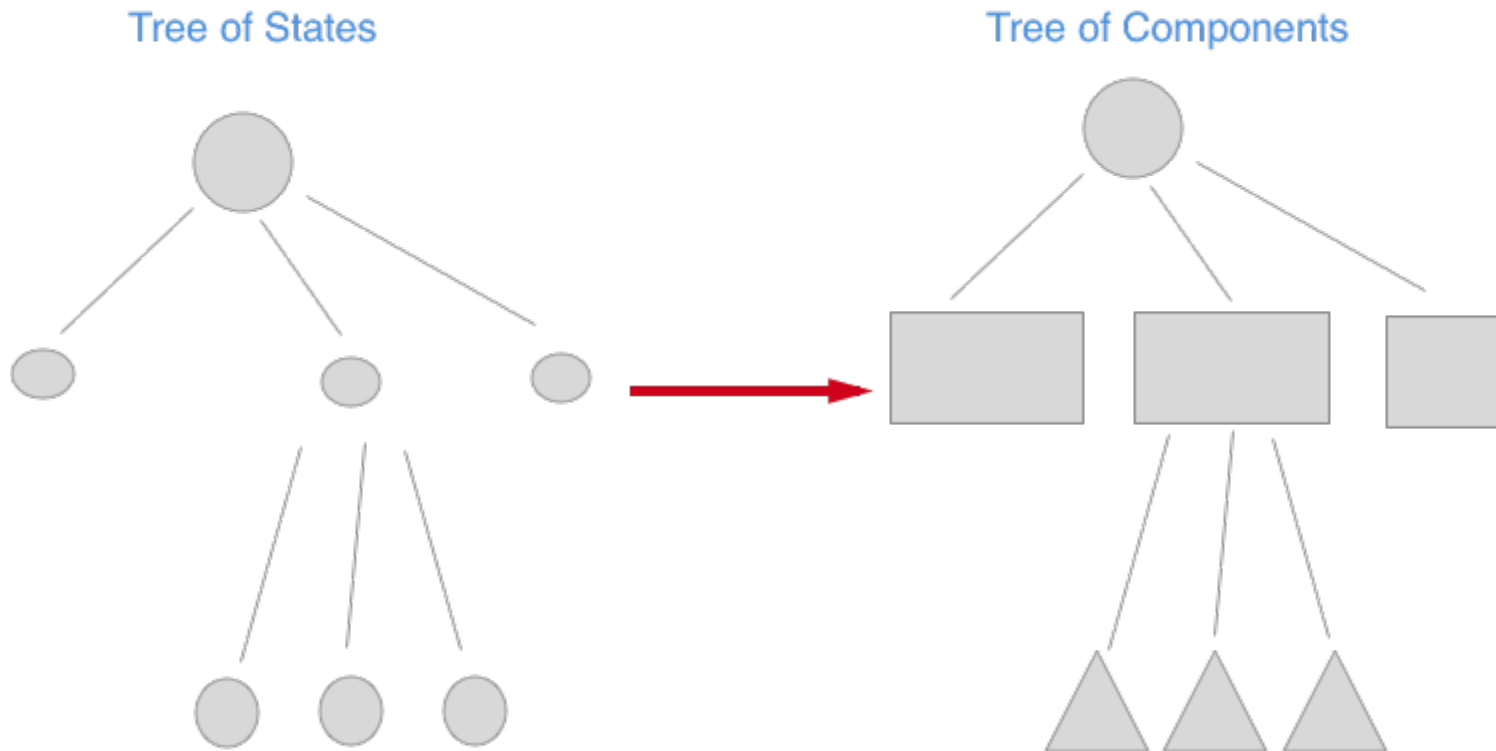
React Concept: Data Flow



[Thinking in React](https://facebook.github.io/react/docs/thinking-in-react.html): <https://facebook.github.io/react/docs/thinking-in-react.html>

React Concept: State

- From a tree of **states** to a tree of **components**



Core Concepts of React

1. Component

- Composable
- Reusable
- (Re)-Render

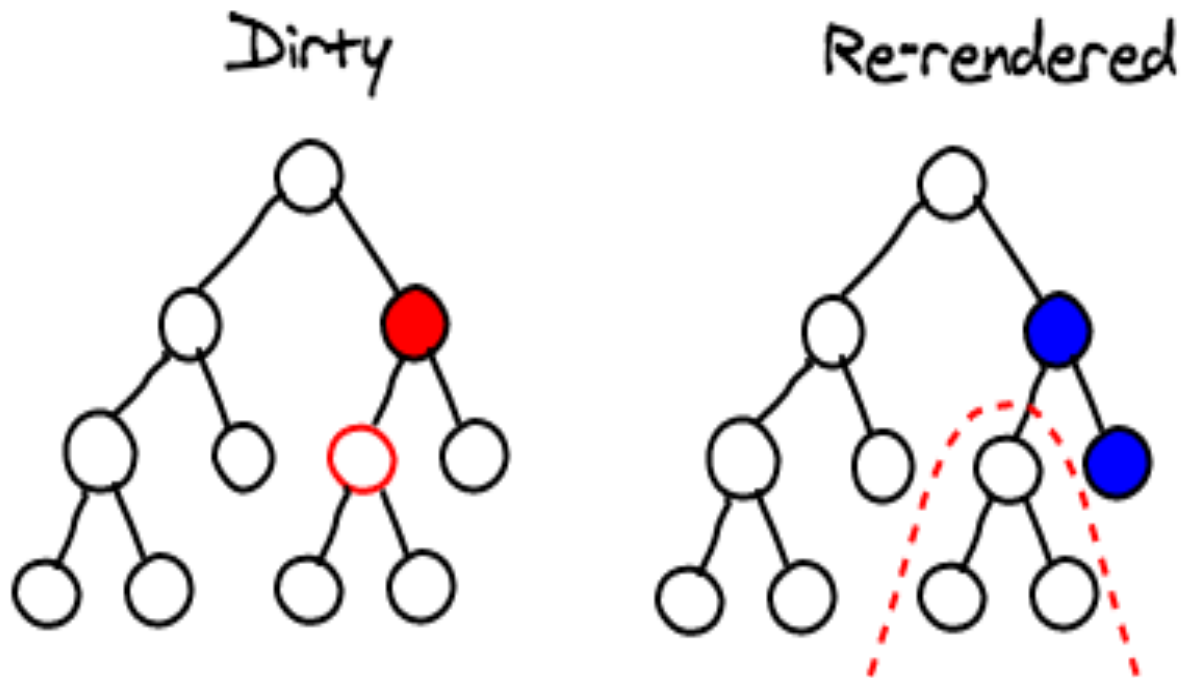
2. Data flows

- Parent to children components (top to bottom)

3. State describes UI

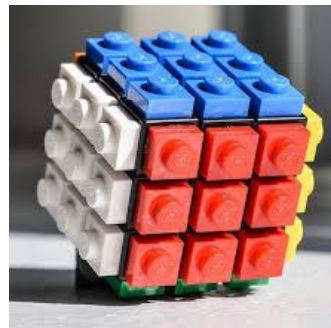
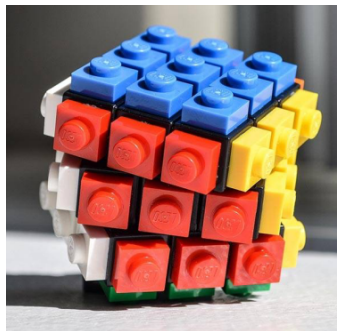
- Reasoning about the states of the UI with dynamically
 - Inspired by game engines: Doom 3

Virtual DOM



Virtual DOM

- Efficient diff algorithm, $O(n)$
- Batch operation
- Render when needed
- Bottom line: increase performance



Diff: <http://calendar.perfplanet.com/2013/diff/>

Takeaways

- React is powerful JavaScript library
- React \Leftrightarrow Lego



Homework

- Add a delete option based on this [jsfiddle](#)
 - *Send your answers on slack or WeChat*



TODO

- Eat ☐
- Study ☐
- Sleep ☐
- Repeat ☐

Add #5

Thank you

A JavaScript Library for Building User Interfaces

