

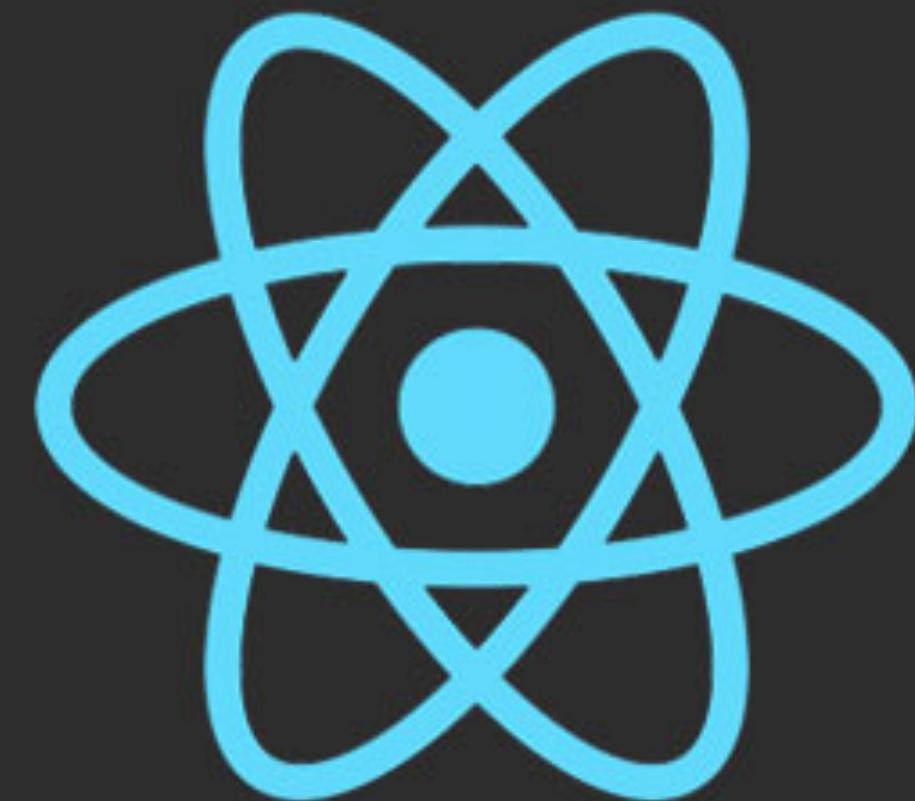
CREATING A REAL-TIME DASHBOARD APP FOR TWITTER USING REACT.JS



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// BEKK CONSULTING

TODAYS AGENDA

- » Presentation
an introduction to React
- » Coding pt 1:
getting to know React through small tasks
- » Coding pt 2:
putting together the Twitter Dashboard



React

she

BACK TO SQUARE ONE

SIMPLY DECLARATIVE INTERACTIVE DATA COMPONENTS

DEclarative
Interactive Data
Components

SIMPLE DECLARATIVE INTERACTIVE DATA COMPONENTS

SIMPLE DECLARATIVE INTERACTIVE DATA COMPONENTS

**SIMPLE
DECLARATIVE
INTERACTIVE DATA**

COMPONENTS



A COMPONENT'S RESPONSIBILITY:

DATA → DOOM

PERFORMANCE?



VIRTUAL DOM

1. When something could have changed, re-render everything to a new DOM-representation
2. Diff new output with previous output
3. Update only what has changed

A black and white photograph showing a group of soldiers in camouflage uniforms working in a flooded field. They are carrying large sandbags on their shoulders and backs. The water reaches up to their knees. In the background, there are utility poles and trees. The scene illustrates the physical effort required to create flood defenses.

RENDER

to create output

DIFF

compare output

BATCH

calculate minimal changeset and batch

✖️ <top frame>

▼ Preserve log

> var li = document.querySelector('li');

li.ATTRIBUTE_NODE
↳ attribute

- isPrototypeOf
- isSameNode
- lang
- lastChild
- lastElementChild
- localName
- lookupNamespaceURI
- lookupPrefix
- matches
- namespaceURI
- nextElementSibling
- nextSibling
- nodeName
- nodeType
- nodeValue
- normalize
- offsetHeight
- offsetLeft
- offsetParent
- offsetTop
- offsetWidth
- onabort
- onblur
- oncopy
- oncut
- ondrag
- ondrop
- onerror
- onfocus
- ongetcharacterset
- onload
- onmessage
- onmousedown
- onmousemove
- onmouseout
- onmouseover
- onmouseup
- onreadystatechange
- onselect
- onselectionchange
- onstart
- onstop
- onunload
- onvolumechange
- onvolumeend
- onvolumestart

HE AIN'T HEAVY, HE'S HTML

```
var ReactDOMElement = {  
  type : string,  
  props : {  
    children : ReactNodeList,  
    className : string,  
    etc.  
  },  
  key : string | boolean | number | null,  
  ref : string | null  
};
```

COMPONENTS

```
var Example = React.createClass({  
  render: function() {  
    return (Virtual DOM-nodes)  
  }  
});  
  
React.renderComponent(Example(), document.body);
```

CREATING VIRTUAL DOM NODES

```
React.createElement('div', { className: 'ninja' }, 'Hello World!');
```

```
<div class="ninja">  
  Hello World!  
</div>
```



FULLY OPTIONAL (BUT YOU'LL WANT IT)

```
render: function() {  
  return React.createElement('div', null, 'Hello World!');  
}
```

is equal to

```
render: function() {  
  return <div>  
    Hello World!  
  </div>;  
}
```



IN THE BUILD PIPELINE

CONVERTING JSX TO JS

```
var Example = React.createClass({  
  render: function() {  
    return <div>  
      Hello World!  
    </div>  
  }  
});  
  
React.renderComponent(<Example/>, document.getElementById('main'));
```

```
var Example = React.createClass( {  
  render: function() {  
    return React.DOM.div(null, 'Hello World!');  
  } } );  
  
React.renderComponent(Example(), document.getElementById('main'));
```

WHY WON'T THIS WORK?!

```
var HelloWorld = React.createClass({  
  render : function() {  
    return <span>hello</span><span> world!</span>;  
  }  
});
```

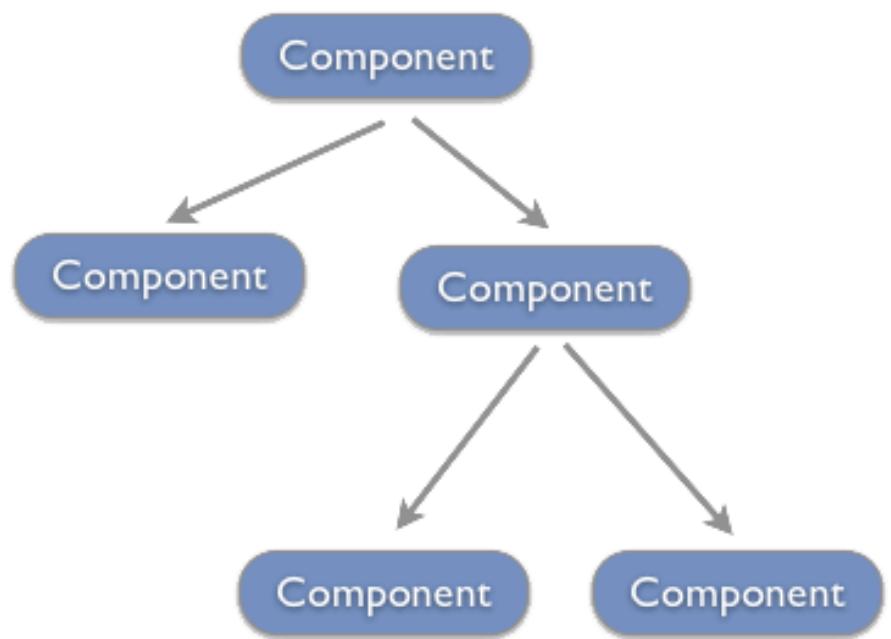
```
var HelloWorld = React.createClass({  
  render : function() {  
    return React.DOM.span({  
      children : "hello"  
    })React.DOM.span({  
      children : " world!"  
    })  
  }  
});
```

```
var HelloWorld = React.createClass({  
  render : function() {  
    return React.DOM.div({  
      children : [  
        React.DOM.span({  
          children : "hello"  
        }),  
        React.DOM.span({  
          children : " world!"  
        })  
      ]  
    } );  
  }  
});
```

CUSTOM COMPONENTS

```
var RootComponent = React.createClass({  
  render: function() {  
    return <section>  
      <FancyHeader />  
      <AwesomeContent />  
    </section>;  
  }  
});
```

Components may consist of native HTML or custom components



filtered

LET'S TALK ABOUT DATA

PROPS & STATE

PROPS

immutable
passed down to comp from parent

STATE

changes over time
lives in a component

PROPS

```
var Comment = React.createClass({  
  render: function() {  
    return <div>  
      {this.props.name} says: {this.props.text}  
    </div>;  
  }  
});  
  
React.render(<Comment  
  name="Weeb1"  
  text="Hello Bob"/>, document.body);
```

```
var Counter = React.createClass({
  getInitialState: function() {
    return { count: 0 };
  },
  increment: function(event) {
    this.setState({ count: this.state.count + 1 });
  },
  render: function() {
    return (
      <p onClick={this.increment}>
        You clicked this {count} times.
      </p>
    );
  }
});
```



```
React.renderComponent(<Counter />, document.body);
```

ONE-WAY DATA FLOW

DATA DOWNWARDS, EVENTS UPWARDS

EVENT DELEGATION



All Things A2 Media | "the proo... Add New Post < Karl Jane — Wor... NCA2Media2012 | A blog for st... f Leah Galea-Bateman and 2 othe... + https://www.facebook.com/messages/conversation-id.135408216614351 Google

Disable Cookies CSS Forms Images Information Miscellaneous Outline Resize Tools View Source Options

facebook Search for people, places and things

Karl Jane | Home | *

Inbox Other (11) More ▾

Leah, Ellis and Rosie + New Message Actions ▾

Search though karl?

Karl Jane 11:32pm The flashback bits will have more speech and stuff in them I just but FLASHBACK to save on time - like the bit where Amy is shot will have her playing and then getting shot and the dad breaking down

Yeah that's why I repeated it because she's trying to remember also yeah copy to your blogs 😊

Leah Galea-Bateman 11:34pm its really good 😊 okay then

Karl Jane 11:35pm I made Amy's ghost have a massive wound to the head because of the gunshot so we didn't have to use a child voice actor because her voice is distorted- Does that bit seemed clear enough like when Katherine screams "Her face"?

Leah Galea-Bateman 11:36pm yeah, i understood that bit

Karl Jane 11:36pm Good 😊 I wasn't sure how clear it was

Leah Galea-Bateman 11:38pm yeah, so we'll go to the library tomorrow and make sure we get it all done 😊 and get lots of technical codes in it too

Rosie Alloway 11:39pm yes good plan, although ellis isn't in tomorrow so it might have to be tuesday? unless we just do it without hi and he can add his say on tuesday?

Leah Galea-Bateman 11:40pm

Write a reply... Add Files Add Photos Press Enter to send

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ASOS Hit 'Like' & check out the ASOS Facebook page for details of our up to 50% off sale

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Marmozets It's Friday! Why not treat yourself to some Marmozets merch or some tickets to s... Marmozets - Becca Backsta...

Ben Delport I don't need no hook for this shiiiiiiit Kaytranada - Hov Don't Ne...

Zayed 'Chillin' Amir ► Emma Jeffery Happy birthday, have a good one :) xx

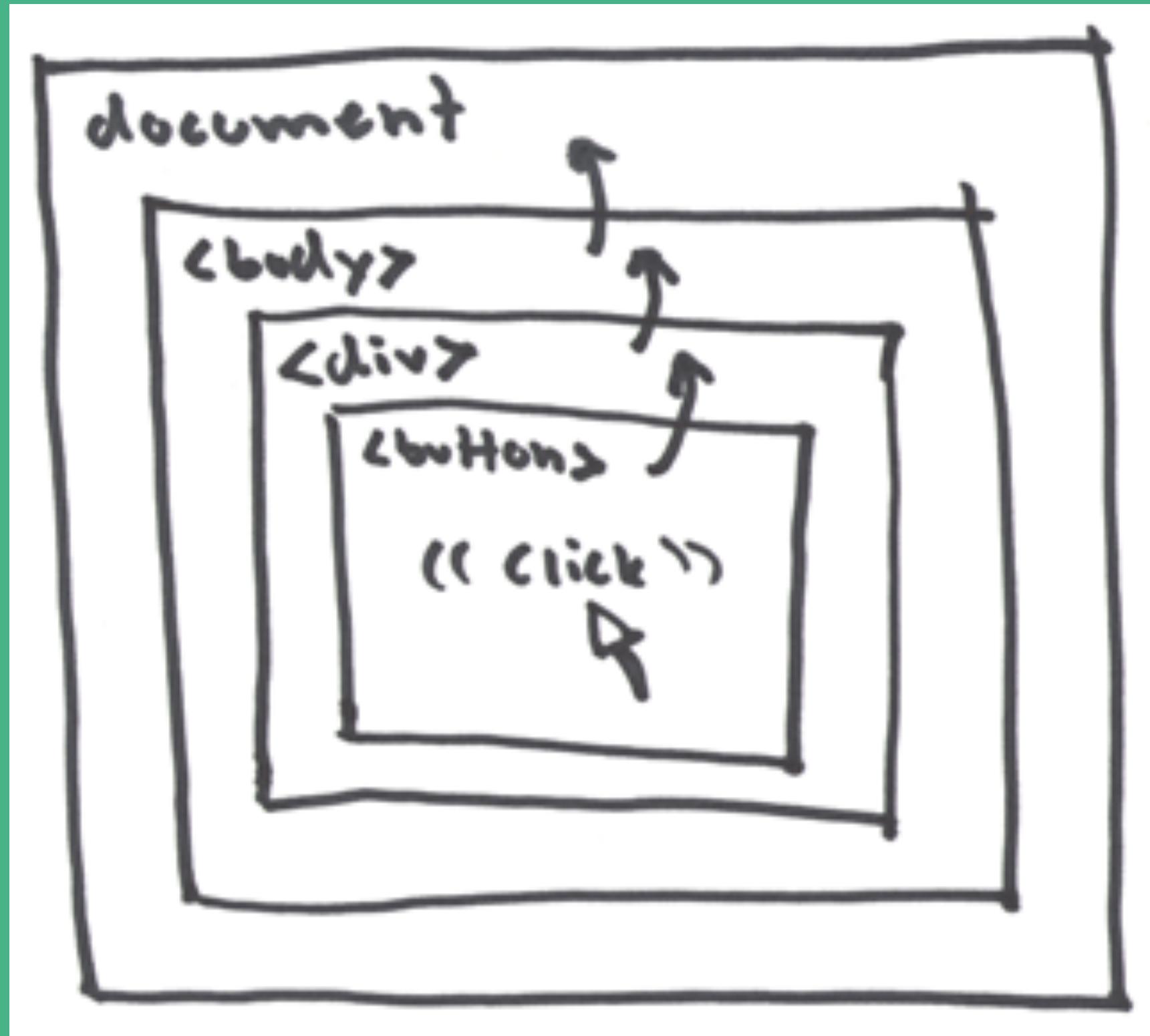
Jack Press is listening to Downfall (Original Mix) by CAZZETTE on Spotify.

Matthew M-Cutz Bird shared International Jazz Day's photo.

Andy Machaeson Devon Charlie Stack Ellen Hutchinson Ellis Dasent Emma Warren Gemma Quach Jack Press Jaryd Trainer Jordan Rubix Hounslow Leah Galea-Bateman Luke Ross Rob Etheridge Rosie Alloway Turn on chat to see who's available.

Search





REUSABILITY

```
var CommentBox = React.createClass({  
  render: function() {  
    return <div className="commentBox">  
      <h1>Comments</h1>  
      <CommentList />  
      <CommentForm />  
    </div>;  
  }  
});
```

LIFECYCLE EVENTS:

```
function componentDidMount() {...}  
function componentWillMount() {...}  
function componentWillUnmount() {...}  
function componentWillUpdate() {...}  
function componentDidUpdate() {...}  
...
```

LIFECYCLE EVENTS

```
var Program = React.createClass({  
  componentDidMount: function() {  
    this.setFocusOnInputField();  
  },  
  componentWillUnmount: function() {  
    this.removeEventListeners();  
    this.doCleanup();  
  }  
});
```

PERFORM!

```
shouldComponentUpdate: function(nextProps, nextState) {  
  return (whether component should render() or not)  
}
```

PERFORM!

```
shouldComponentUpdate: function(nextProps, nextState) {  
  return nextProps.id !== this.props.id;  
}
```

FLEXIBILITY

Easy to use React on parts of an app

```
renderComponent(<Example/>, document.body);
```

SERVER-SIDE RENDERING

```
var app = express();

app.get('/', function (req, res) {
  React.renderToString(Timer(), function(markup) {
    res.send(markup);
  });
});
```



SUMMARY

» challenges best practices

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- » has awesome performance

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- » challenges best practices
- » has awesome performance
- » but main goal = simplify development
- » small scope - just DOM-manipulation
- » Flux handles the rest

A dense, dark forest scene with sunlight filtering through the canopy.

LTS GET CRACKING