

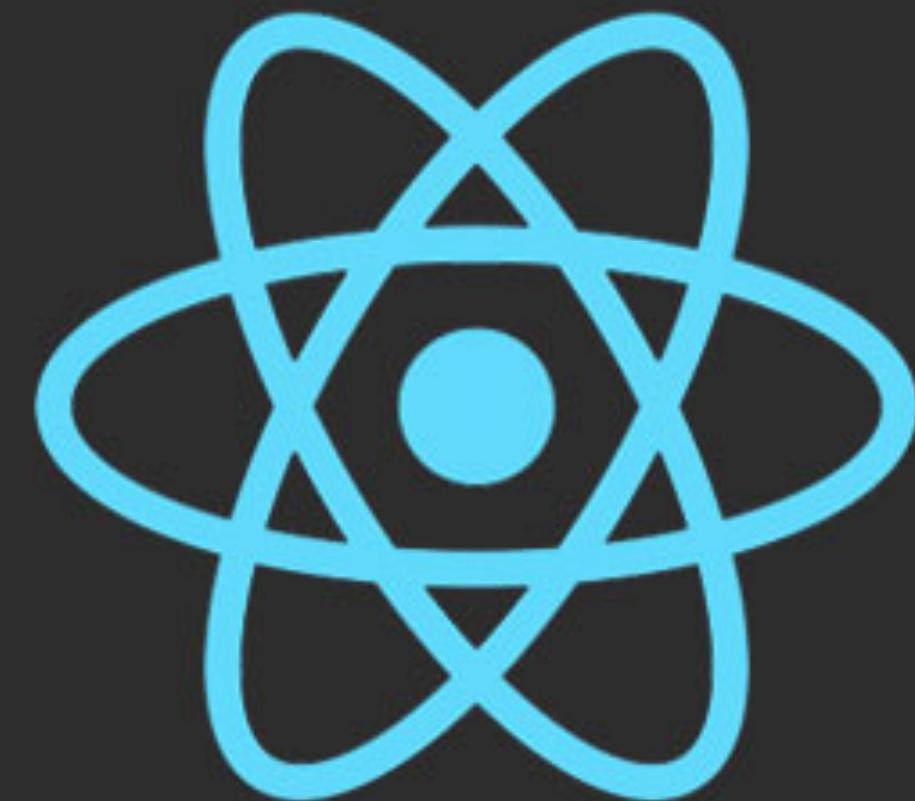
CREATING A REAL-TIME DASHBOARD APP FOR TWITTER USING REACT.JS



// ERIK WENDEL, BEKK CONSULTING
// KIM JOAR BEKKELUND, ELASTIC

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

sheep

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. One soldier in the foreground is carrying a large sack over his shoulder. Another soldier is kneeling in the water nearby. The background shows a vast, flooded landscape with utility poles and trees in the distance.

RENDER

to create output

DIFF

compare output

BATCH

calculate minimal changeset and batch

  <top frame> ▼ Preserve log

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.render(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.render(<Example/>, document.getElementById('main'));
```

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

WHY WON'T THIS WORK?!

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

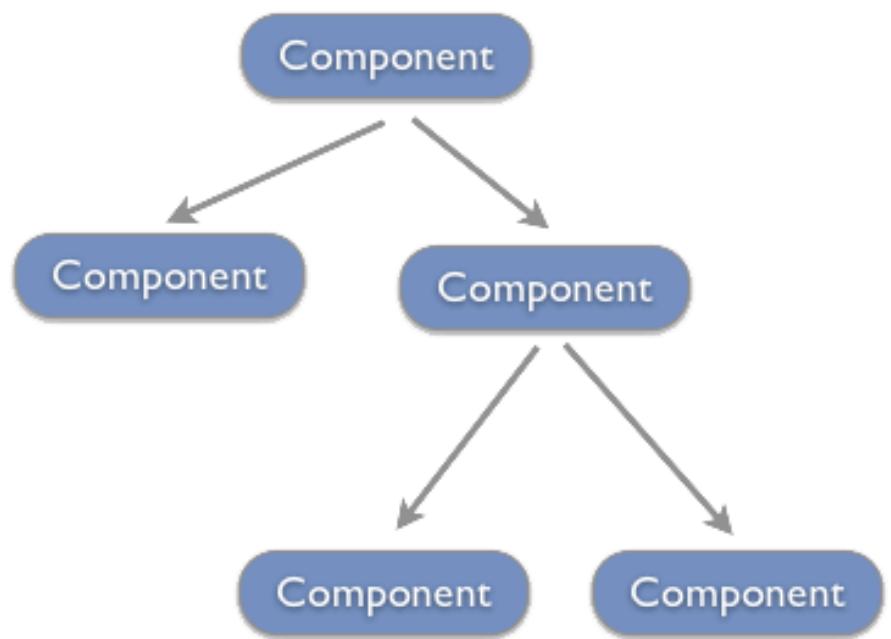
```
var HelloWorld = React.createClass({  
  render : function() {  
    return React.DOM.span({  
      children : "hello"  
    })React.DOM.span({  
      children : " world!"  
    })  
  }  
});
```

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

ONE-WAY DATA FLOW

DATA DOWNWARDS, EVENTS UPWARDS

EVENT DELEGATION



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



Search for people, places and things



Karl Jane | Home | *

Inbox Other (11)

More

Leah, Ellis and Rosie

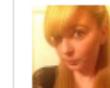
+ New Message * Actions

Search



Jack Press

8:42am



Devon Charlie Stack

Sat



James, Jaryd, Melissa, 1 o... Mar 11

James: Hahaha Please someone c...



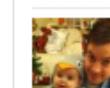
Luke Ross

Mar 8



Emma Warren

Mar 7



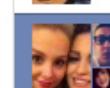
Jay Lee

Mar 5



Jordan, Rob, Robert, 2 othe... Mar 3

Jordan: And when I mean out I me...



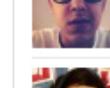
Leah, Ellis, Rosie

Feb 27



Ellis Dasent

Feb 26



Jaryd Trainer

Feb 21



Jan Jamjar Tytgat

Feb 19

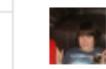


Rob, Jordan, Andy

Feb 18

Rob: Ok so my first email address...

don't want you to think we're changing credits for your work 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

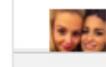
yeah, so we'll go to the library tomorrow and make sure we get it all done 😊 and get lots of technical codes in it too



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

Sponsored

Create an Ad

The Big Yellow Sale Is On

Save A Minimum of £500 Off Every Used Car At Hartwell Northampton.



597 people like Hartwell plc.

ASOS



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

Like · Jessica Gough and Devon Charlie Stack like ASOS.

Robert Lewis art



Love, beauty and life

Like · 920 people like Robert Lewis.

Concorde Auto Centre



£20 MOT, special promotions on tyres, brakes, exhausts, clutches, cambelts

Like · 3,987 people like Concorde Auto Centre.

Hillside Animal Sanctuary



Please sign our HORSE SLAUGHTERHOUSE PETITION calling for prosecutions at Red Lion Abattoir

Like · 49,014 people like Hillside Animal Sanctuary.

Facebook © 2013

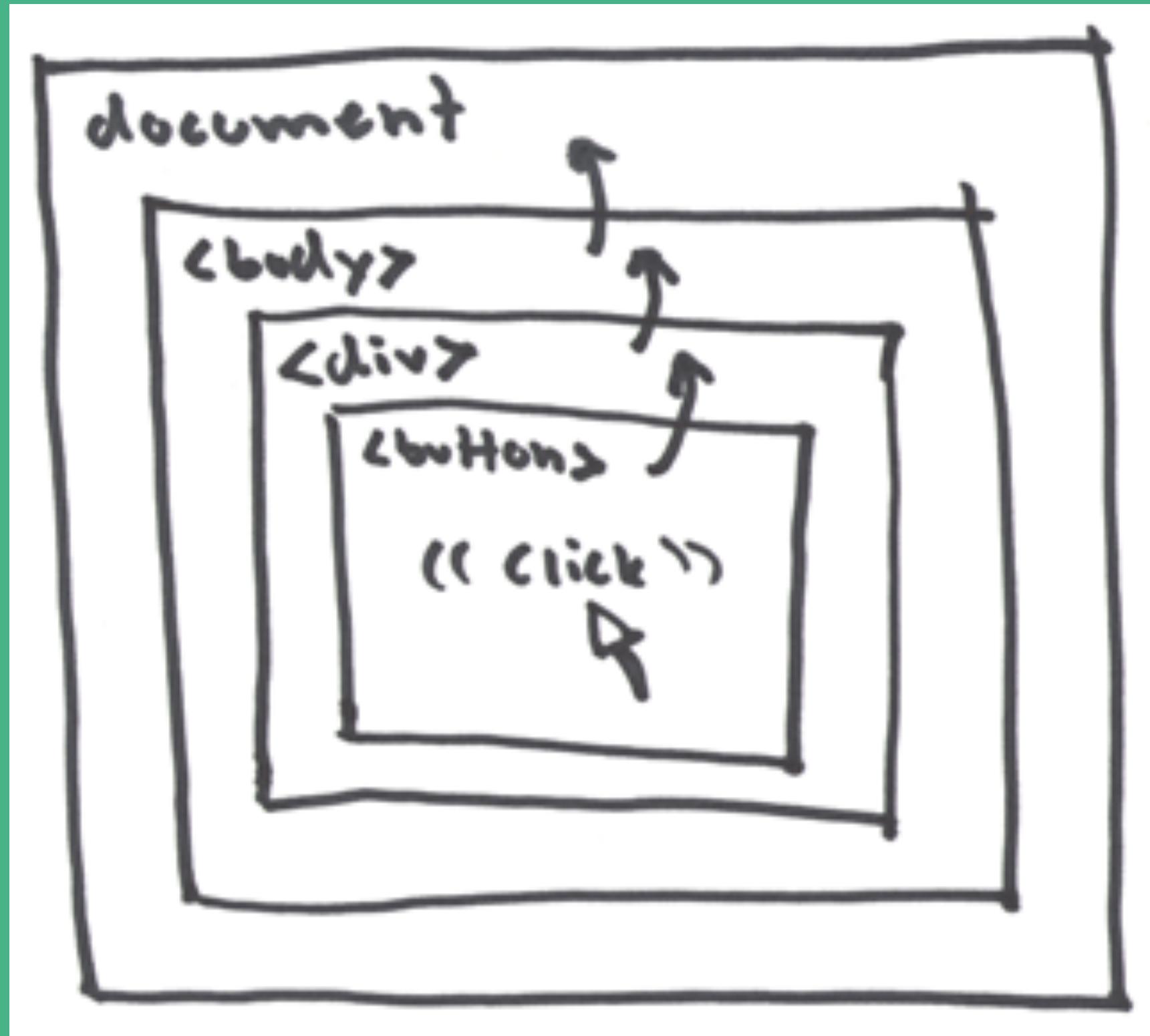
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Marmozets
It's Friday! Why not treat yourself to some Marmozets merch or some tickets to s...
Marmozets - Becca Backsta...Ben Delport
i don't need no hook for this shiiiiiiit
Kaytranada - Hov Don't Ne...Zayed 'Chillin' Amir ►
Emma Jeffery Happy birthday, have a good one :) xxJack 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

```
render(<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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SUMMARY

- » 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

Clone the git repo at

IS.GD/FULLSTACKFEST

Ask us if you're new to Git :)

Follow instructions in the README