

ESLint Babel ImmutableJS Flux Relay Hot Loader  
React JSX ECMAScript 6 Webpack GraphQL

# A Modern Web with React and Flux

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Aula D02 Ingegneria - Cittadella Universitaria



Università di Catania



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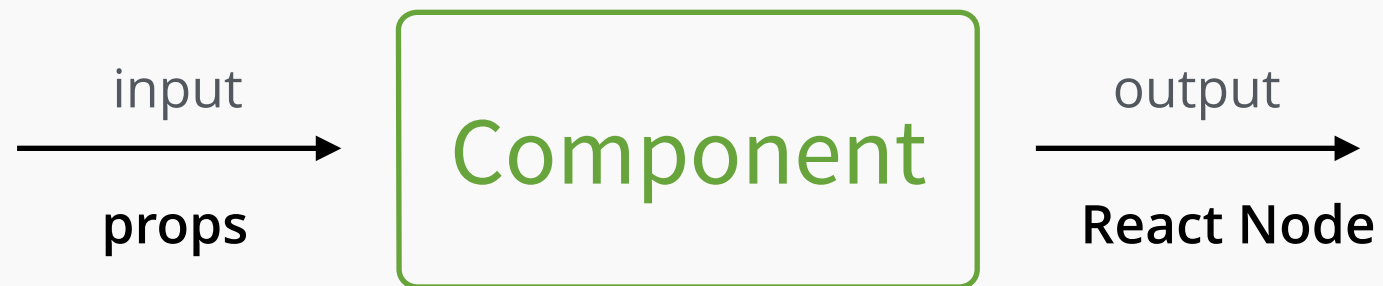
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# What is React?

## A Javascript Library for Building User Interfaces

- 1) Just the UI
- 2) Virtual DOM
- 3) One Way Data Flow

# What is React?



## Why React?

Made for App with data that changes over time.

- Simple
- Declarative
- Build Composable Components

## My First React Component

```
var HelloMessage = React.createClass({  
  render: function() {  
    return <div>Hello {this.props.name}</div>;  
  }  
});
```

## My First React Component

```
return <div>Hello {this.props.name}</div>
```

JSX

## Introducing JSX

**<div>Hello Jack!</div>**

**=> React.createElement('div', 'Hello Jack!');**

**<span className='grid'></span>**

**=> React.createElement('span', {  
 className: 'grid'  
});**



## JSX Transformer

```
return <div>Hello {this.props.name}</div>
```

=

```
return React.createElement('div', 'Hello '+this.props.name)
```

## My First React Component

```
var HelloMessage = React.createClass({  
  render: function() {  
    return <div>Hello {this.props.name}</div>;  
  }  
});
```

## My First React ES6 Component

```
class HelloMessage extends React.Component {  
  render() {  
    return <div>Hello {this.props.name}</div>;  
  }  
}
```

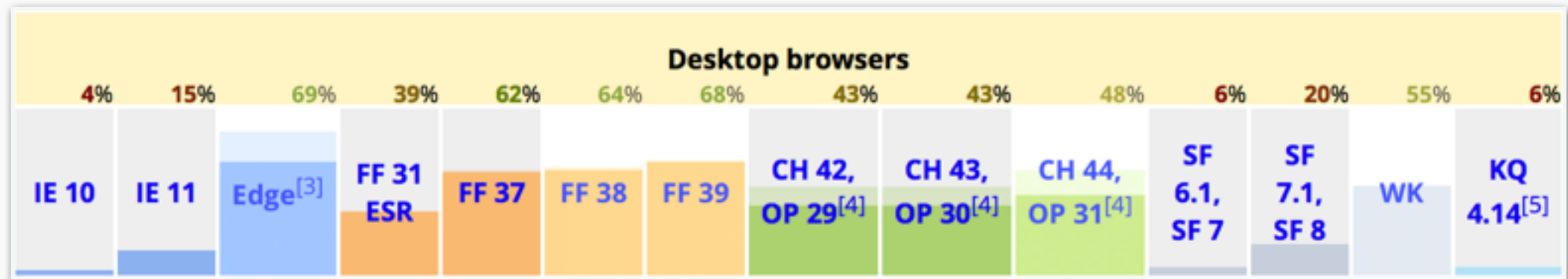
## ECMAScript 6

# The Next Generation ECMAScript/Javascript

- Improved Standard Library ( Promises )
- Classes
- Scope Local Variable ( let/const )
- Default Parameters, Arrow Functions ( => )
- Tons of new features ( template strings, destructuring )

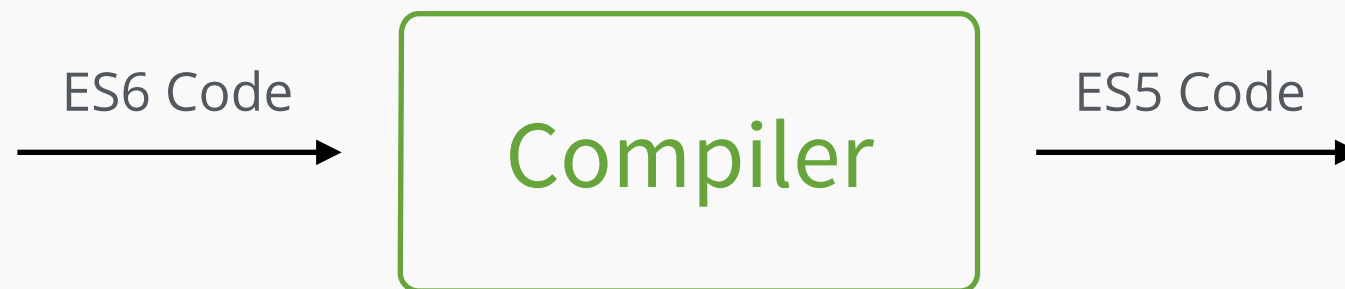
# ECMAScript 6

Not supported by any modern Web Browser



Babel

Use next generation JavaScript, today.

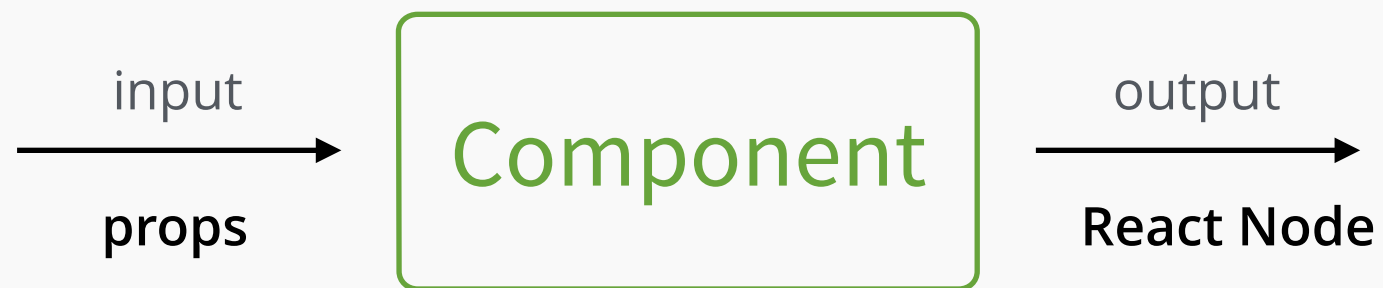


<http://babeljs.io>

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# Demo

# What is React?





## Event Handling

- Simply pass your event handler as a **camelCased prop** similar to how you'd do it in normal HTML:

```
<div onClick={this.handleClick}></div>
```

- Supports **Event Delegation** out of the box

## Dynamic UIs

# Components are Just State Machines

- React thinks of UIs as simple state machines.
- Use `this.state` and `setState` to manage the state

`this.state.on = true`



`this.state.on = false`



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# Demo

## Data Flow

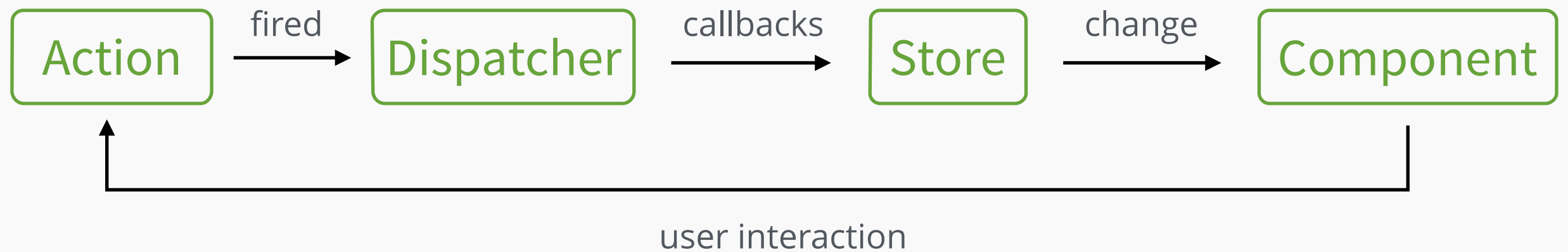


Flux

## App Architecture for Building User Interfaces

- Complements React
- Unidirectional Data Flow
- More of a pattern, rather than a formal framework
- No need to learn a new library ( sort of )

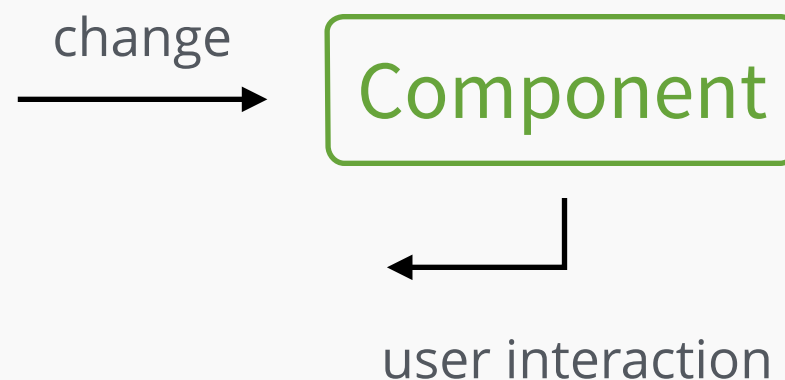
Flux



<http://facebook.github.io/flux/>

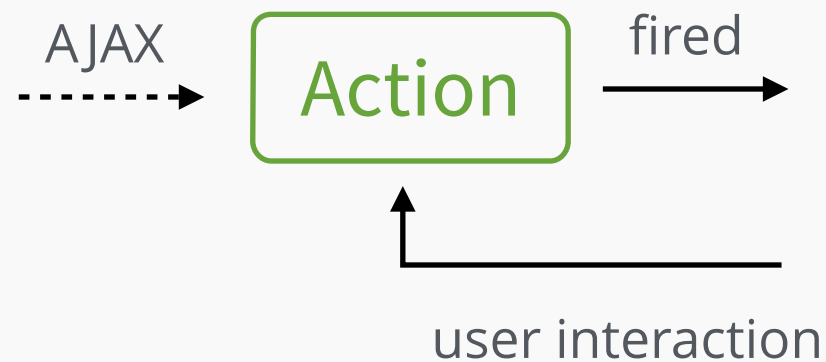
## Component

- Listens for **Stores** change event
- On change, updates the state and updates the UI
- Fires **Actions** on User Interaction



## Actions

- On fire, an **Action** is sent to the **Dispatcher**
- Contains and optional payload
- May also come from Server ( AJAX request )





## Dispatcher

- Single, central hub that manages all data flow
- Receives **Actions**
- Manages **Store** dependencies ( waitFor )
- Distributes **Actions** to **Stores** via Callback



## Dispatcher

- Handles **Actions** via Callbacks
- Where the Truth lies
- Emits a change event



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# Demo