The Reactive Web

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What is it good for?

React is a lightweight and fast Javascript framework for creating interactive web pages

- Interactive web pages
- Dynamic client side rendering
- Dynamic server side rendering (if using Node.js)
- Single Page Applications
- Native iOS and Android Applications

JSX

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

ReactDOM.render(
  <HelloMessage name="World" />,
  document.getElementById("root")
);
```

JSX is a Javascript extension language that allows use of inline html-like syntax for rendering react elements

JSX is not required for React, but makes the code look much nicer

Components

Components are the building blocks of React

A component is a self contained block of code that can be reused in the document

Can be created using classes (for stateful components) or functions (for stateless components)

Props vs State

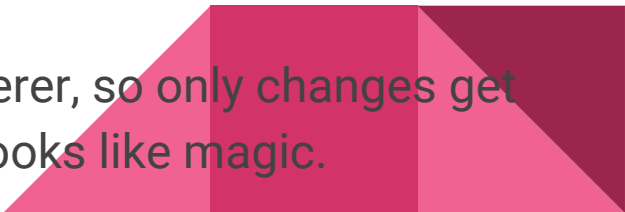Props and State help define a component

Props:

- Passed in when the component is created
- Changing the prop outside of the component modifies the element

State:

- Stored within the component itself
- Allows the component to change its own status
- DO NOT CHANGE STATE DIRECTLY, use the .setState() method available to components

Changes to either of these are handled by React's rerenderer, so only changes get rerendered. This makes React very fast and sometimes looks like magic.

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8" />
    <title>Hello World</title>
    <script src="https://unpkg.com/react@16/umd/react.development.js"></script>
    <script src="https://unpkg.com/react-dom@16/umd/react-dom.development.js"></script>
    <script src="https://unpkg.com/babel-standalone@6.15.0/babel.min.js"></script>
  </head>
  <body>
    <div id="root"></div>
    <script type="text/babel">
ReactDOM.render(
  <h1>Hello, world!</h1>,
  document.getElementById('root')
);
    </script>
  </body>
</html>
```

Application Template

Demo

dice-bot.com