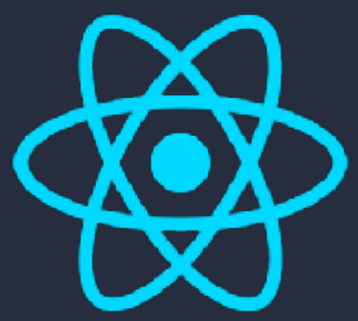
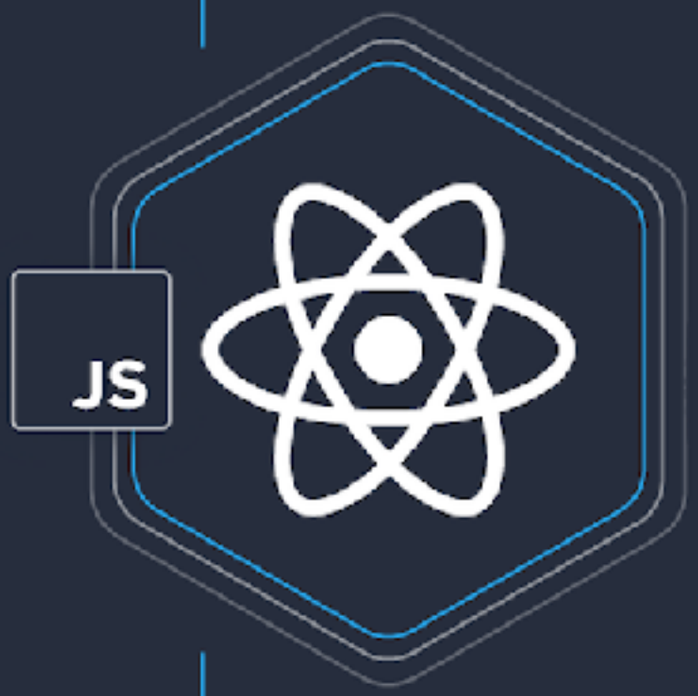
LECTURE 1



REACTJS

AGENDA



What is ReactJS?

What the heck is JSX?

Virtual DOM
and Reconciliation

Q&A

WEB APPLICATION STRUCTURE

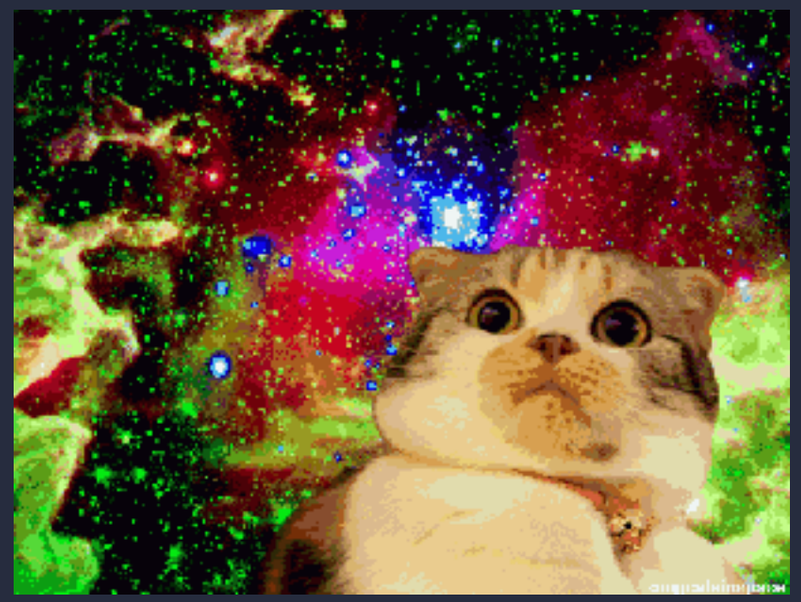
Web Application

View Layer

ReactJS

Business
Logic
Layer

Data Layer



WHAT IS REACTJS ?

Angular

Framework

≠

React JS

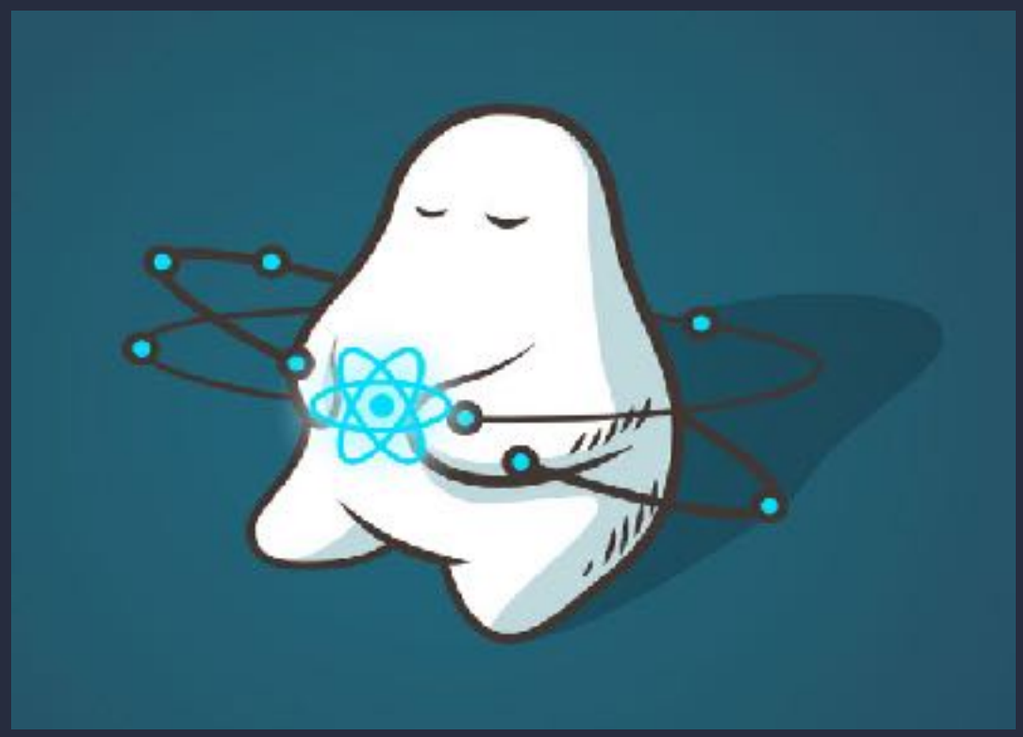
Library

WHAT IS REACTJS ?

Angular

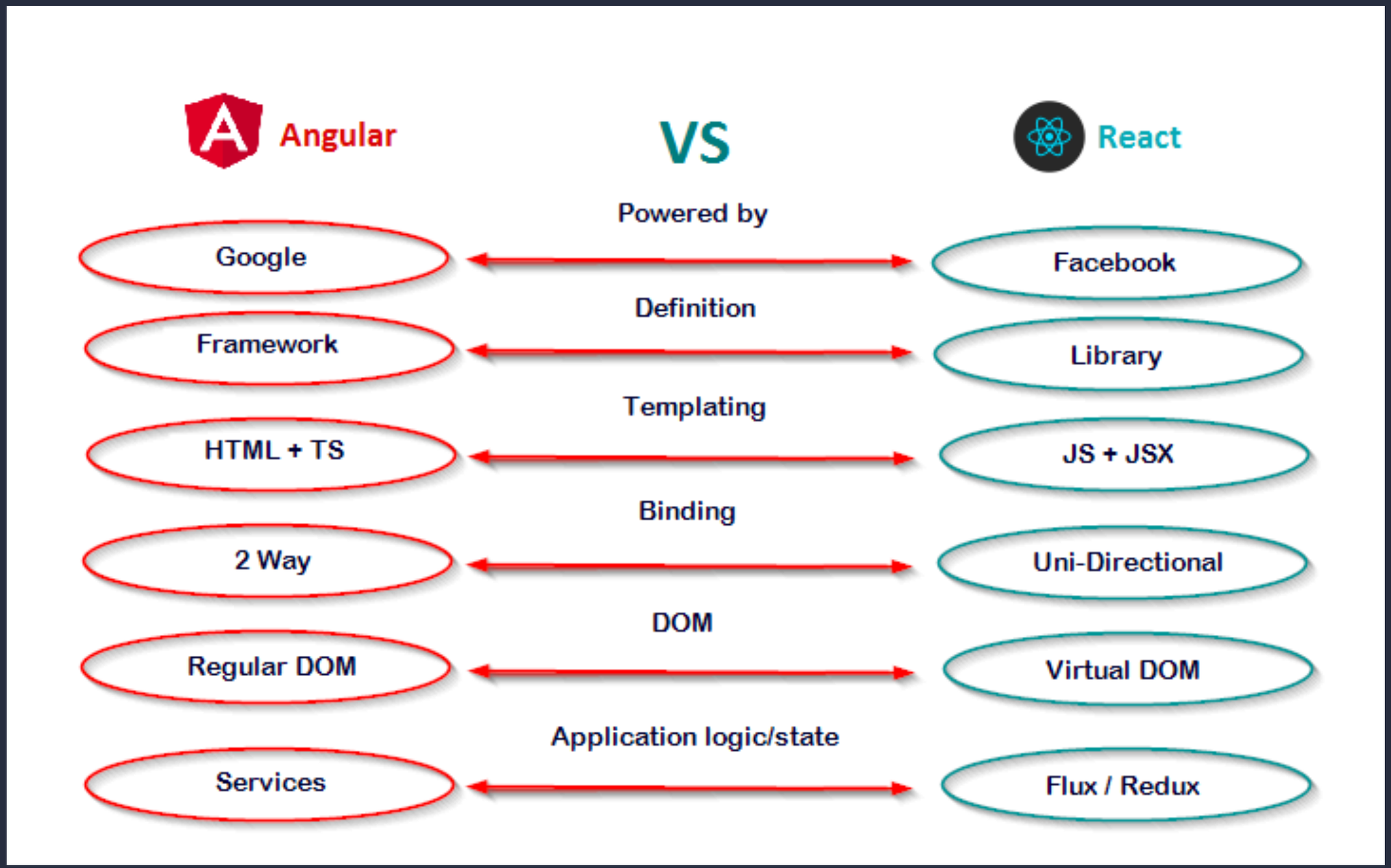
Framework

React JS

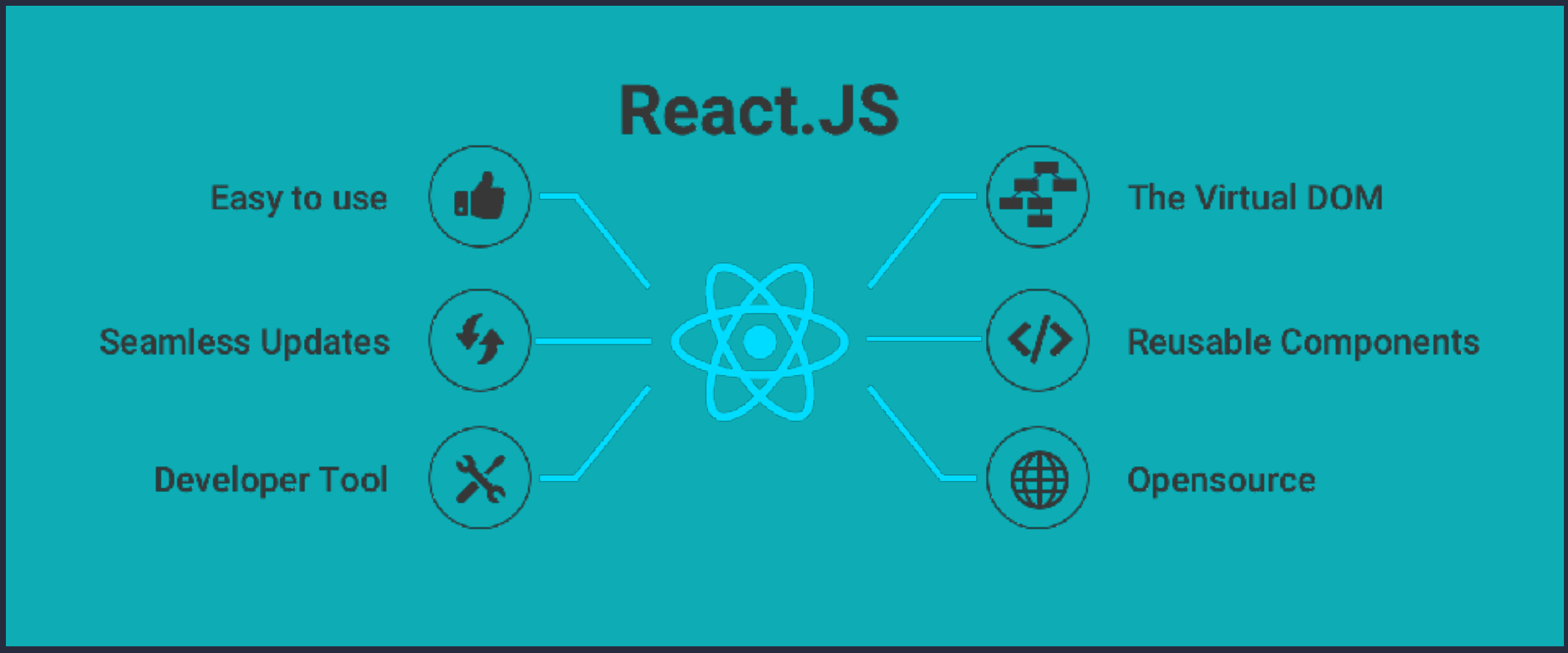


Library

WHAT IS REACTJS ?



WHAT IS REACTJS ?



WHAT IS REACTJS ?

https://github.com/facebook/react

facebook / react

Used by 2.8m | Watch 6.6k | Star 140k | Fork 26.7k

Code | Issues 714 | Pull requests 264 | Actions | Projects 0 | Wiki | Security | Insights

A declarative, efficient, and flexible JavaScript library for building user interfaces. https://reactjs.org

javascript | react | frontend | declarative | ui | library

12,623 commits | 35 branches | 0 packages | 124 releases | 1,341 contributors | MIT

CREATE REACT APP

```
# npx create-react-app new-app

# cd new-app

# npm start
```

https://github.com/facebook/create-react-app

WHAT THE HECK IS JSX?

JS + XML

(syntax extension to JavaScript)

WHAT THE HECK IS JSX?

```
function formatName(user) {
  return user.firstName + ' ' + user.lastName;
}

const user = {
  firstName: 'Harper',
  lastName: 'Perez'
};

const element = (
  <h1>
    Hello, {formatName(user)}!
  </h1>
);

ReactDOM.render(
  element,
  document.getElementById('root')
);
```

WHAT THE HECK IS JSX?

Babel compiles JSX to React.createElement()

```jsx
const element = (
  <h1 className="greeting">
    Hello, world!
  </h1>
);
```

```jsx
const element = React.createElement(
  'h1',
  {className: 'greeting'},
  'Hello, world!'
);
```

JSX TIPS

Render from js variable

```
function App() {
  const greeting = 'Hello, world!';
  const greetingElement = (<div className="class-12">{greeting}</div>);

  return (
    <div className="App">
      <header className="App-header">
        <img src={logo} className="App-logo" alt="logo" />
        { greetingElement }
      </header>
```

JSX TIPS

Render list (array of data) using .map

```
function renderPeopleList() {
  return people.map(person => {
    const { firstName, lastName, avatar } = person;

    return (
      <li className="list-item">
        <div>{firstName}</div>
        <div>{lastName}</div>
        <img src={avatar} className="avatar" alt={`avatar for ${firstName} ${lastName}`}/>
      </li>
    );
  });
}
```

Render using function

```
function App() {
  return (
    <div className="App">
      <ul className="list">{renderPeopleList()}</ul>
    </div>
  );
}
```

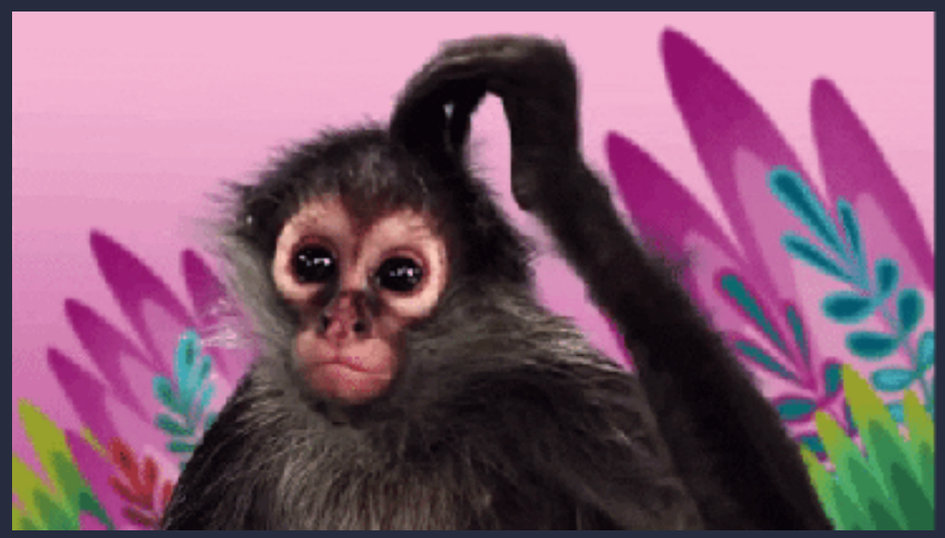
JSX TIPS

Render list of elements

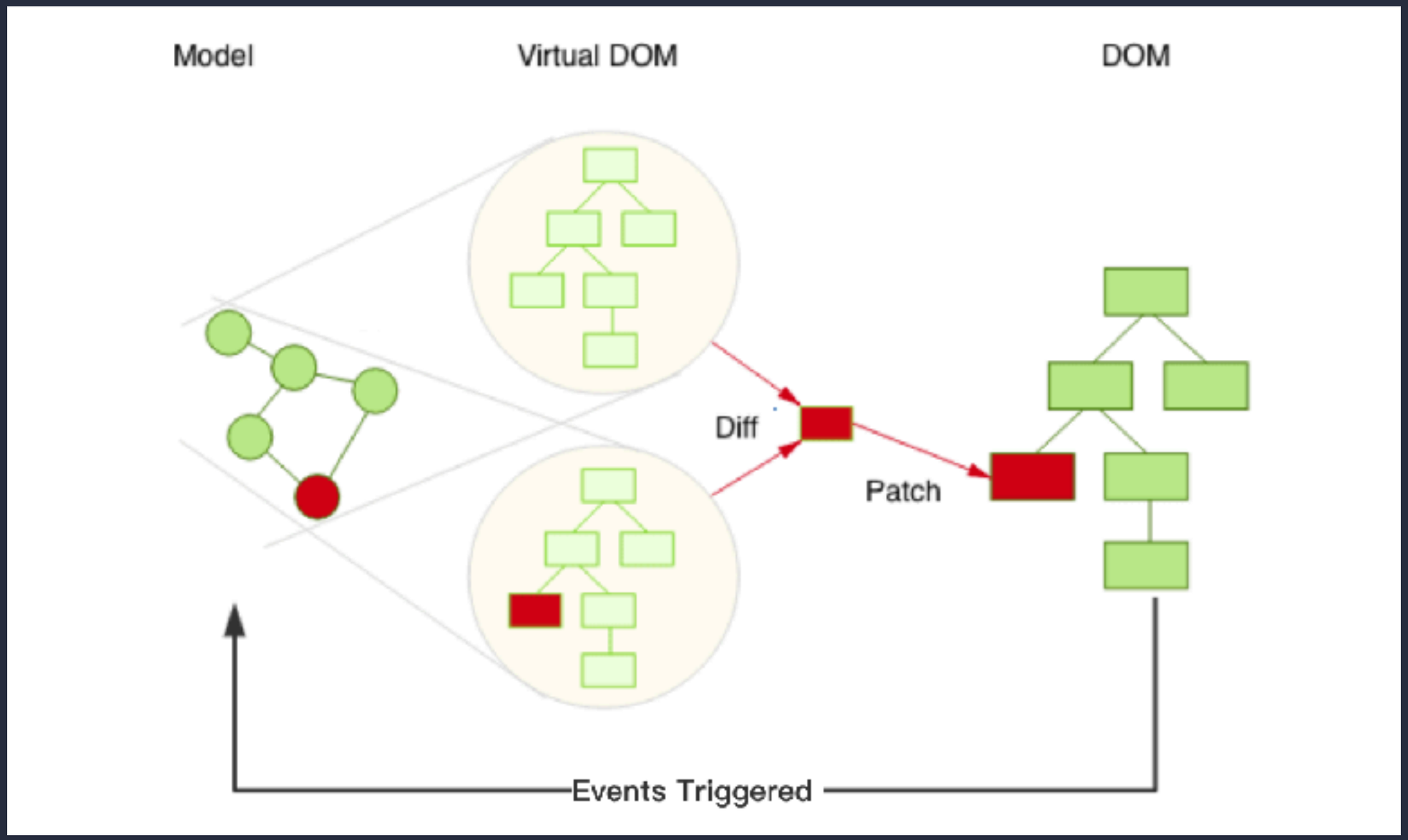
```
const renderMultipleElements = () => {
  return ([
    <div key="btn-element-1" className="btn-element">Btn 1</div>,
    <span key="btn-element-2" className="btn-element">Btn 2</span>,
    <a key="btn-element-3" className="btn-element" href="#">Btn 3</a>
  ]);
};
```

WHAT THE HECK IS JSX?

THE ***REACT-DOM*** PACKAGE PROVIDES DOM-SPECIFIC METHODS THAT CAN BE USED AT THE TOP LEVEL OF YOUR APP



VIRTUAL DOM



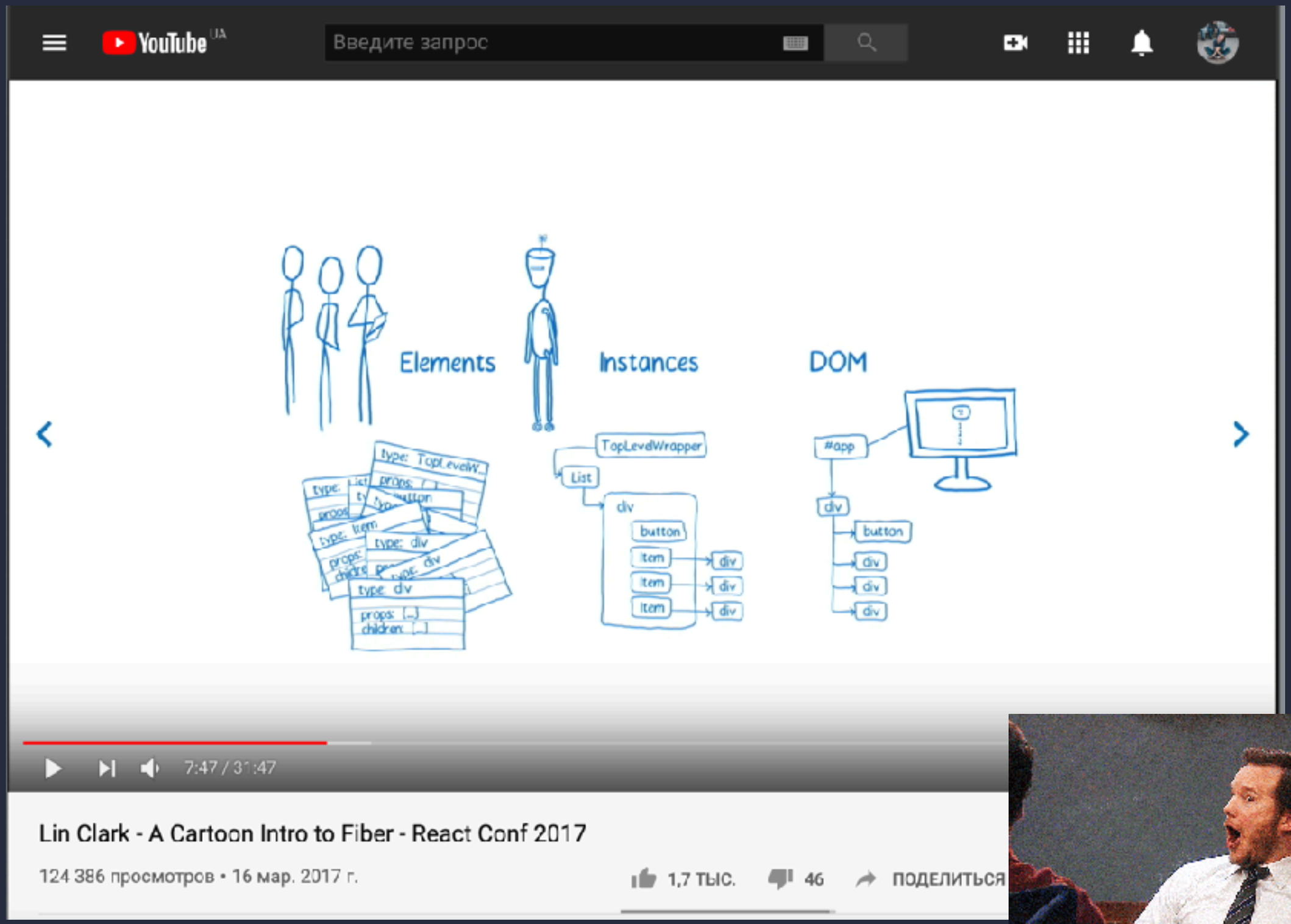
Time
for external example

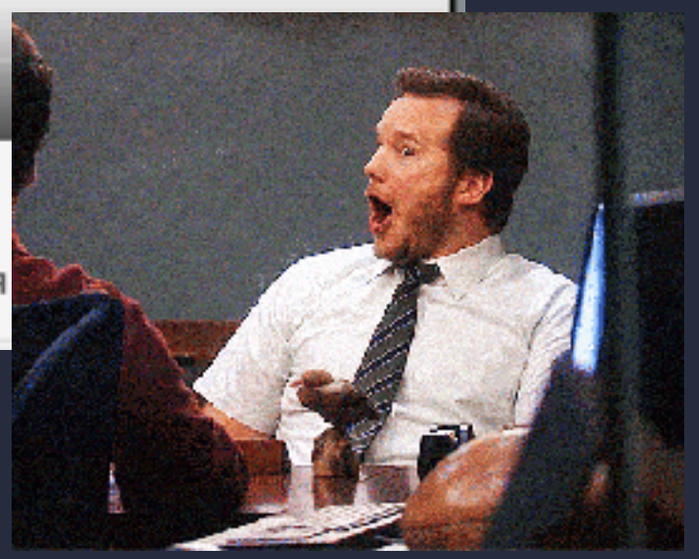
https://illustrated.dev/react-vdom

https://medium.com/@js_tut/react-animated-tutorial-7a46fa3c2b96

Q&A

RECONCILIATION – RECOMMENDED VIDEO





https://www.youtube.com/watch?v=ZCuYPiUIONs