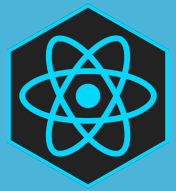


React

What is React?

- A JavaScript library for frontend development that allows for greater flexibility and fluidity when developing widgets and web apps.
- Specifically, for building user interfaces
- Putting the V in MVC

How to install and use React?

Cool. I need to create a page that displays the latest activity from the users, so I just need to get the data from the REST endpoint and display it in some sort of filterable table, and update it if anything changes in the server. I was thinking maybe using jQuery to fetch and display the data?

-Oh my god no, no one uses jQuery anymore. You should try learning React, it's 2016.

Oh, OK. What's React?

-Oh, thank god. Otherwise I would had to explain you Flux, and implementations like Flummox, Alt, Fluxible. Although to be honest you should be using Redux.

I'm going to just fly over those names. Again, I just need to display data.

You know what. I think we are done here. Actually, I think I'm done. I'm done with the web, I'm done with JavaScript altogether.

-That's fine, in a few years we all are going to be coding in Elm or WebAssembly.

Create React App build passing

Create React apps with no build configuration.

- Getting Started – How to create a new app.
- User Guide – How to develop apps bootstrapped with Create React App.

Create React App works on macOS, Windows, and Linux.
If something doesn't work please file an issue.

Quick Overview

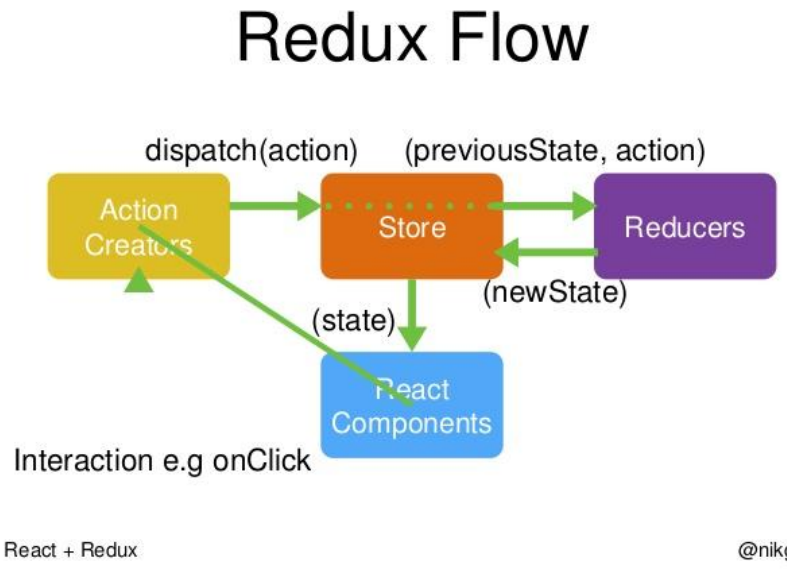
```
npm install -g create-react-app

create-react-app my-app
cd my-app/
npm start
```

So what do we use for backend?

- ***Redux***. Redux apps can be written in Angular, Ember, JQuery, or Vanilla JS. However, Redux works especially well with React because React allows you to describe UI as a *function of state*, and Redux emits state updates in response to actions.
- **Redux** *controls an app's state changes*, while **React** *renders the view of the states*.
- **React** handles the view, and **Redux** handles the model and controller part of the MVC model.
- You can actually use any server as a backend
  - React is simply a JavaScript library

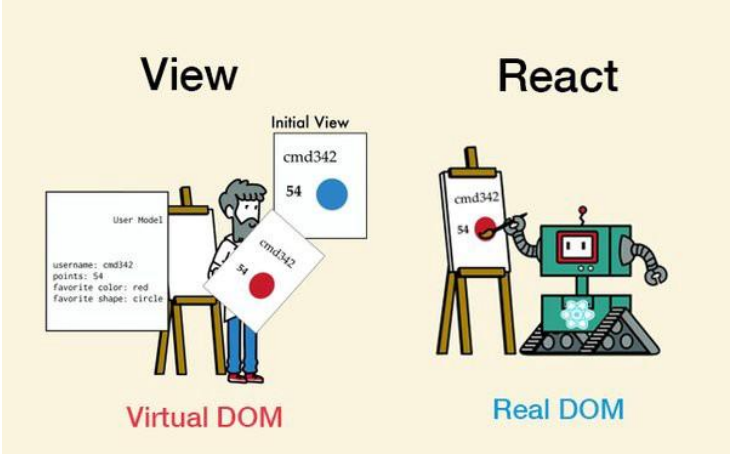
What is Redux?

- Redux is a framework that controls states in a JavaScript app.
- *Action creators* = tells the store what happened in the app
- *Store* = keeps track of state
- *Reducers* = updates state in store
- Redux DevTools Chrome extension is handy for visualizing state



Why use React?

- Scalable
- Virtual DOM
  - React computes a new virtual DOM, compares differences, then renders the updated DOM
- Component Based
- Can be used for a single app
  - Or for your whole site



JSX

- JSX elements
- JavaScript with HTML/XML sprinkled in
- Syntactic sugar for JavaScript
- Compiles to JavaScript

Code

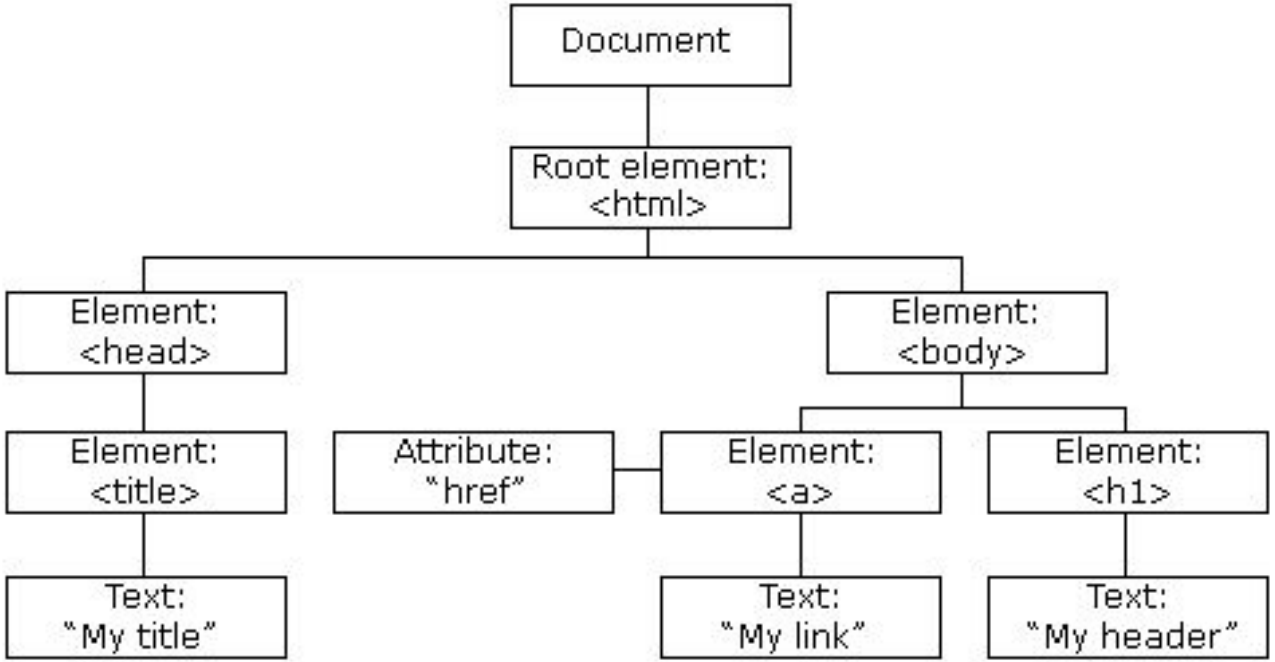
```
class ShoppingList extends React.Component {
  render() {
    return (
      <div className="shopping-list">
        <h1>Shopping List for {this.props.name}</h1>
        <ul>
          <li>Instagram</li>
          <li>WhatsApp</li>
          <li>Oculus</li>
        </ul>
      </div>
    );
  }
}

// Example usage: <ShoppingList name="Mark" />
```

React Pros & Cons

- Hot loading
- Saves state for a multi-part application
- Uses virtual DOM
  - Can update fast
- Separation of data and presentation
- JSX allows you to mix HTML with JavaScript

- Hard for beginners
  - JSX
  - Complicated installation process
- Not static front-end; must use localhost to view.
- Still new and growing
- Build tools needed

The HTML DOM Tree of Objects



Source: https://www.w3schools.com/js/js_htmldom.asp

Code Demonstration

- https://codepen.io/ericnakagawa/pen/ALxakj?editors=1010

Team Communication!

- Slack
  - ToDo App Integration
- Google Slides/Google Docs
- Facebook Messenger

kdenning 1:48 PM
here's the presentation link: https://docs.google.com/presentation/d/1AuBpUFJ4ent6NyTIoz_H7FB5aW4qBoLFjC4MDiOzkvA/edit?usp=sharing

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React
Presentation from Google Drive

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👍

Yesterday

To-do bot APP 9:14 PM
@kdenning created a new task:

ID **TFVW**: codeacademy tutorial · **Assigned:** @jonesr2017 · **Due:** Tomorrow 12:00 pm

✖ ✓ Complete List All Tasks

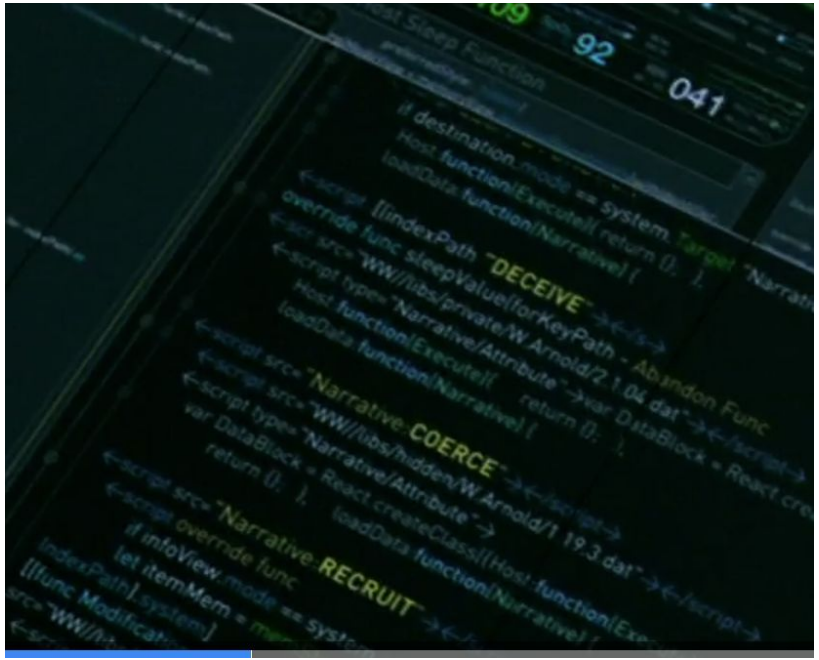
Dismiss

@mina completed the task(s) 👏

✅ **T9Y2:** React + Redux tutorial · **Assigned:** @mina

Show Completed

Why is React the best?



Alternatives to React

- AngularJS
- EmberJS
- Both are frameworks. Sad!

THE SOFTWARE HOUSE
ember
METEOR
A 2.0
Which cat is your JavaScript framework?
Have you ever wondered what kind of a cat
your favorite JavaScript framework would be? We have!

Questions?