An Introduction to React

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A Quick Aside - Minima

https://minima.global/

Minima is creating a truly decentralised blockchain network that will operate as an open, co-operative ecosystem, within which users are free to transfer information (value) in a secure and trusted environment.
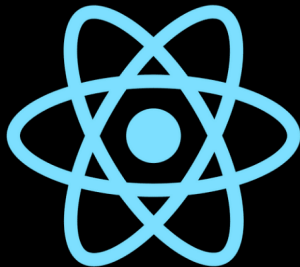
Lecture Overview

- ▶ What is React?
- ▶ Why React?
- ▶ Anatomy of a React project
- ▶ **Warning** - it is a (fast) changing landscape
- ▶ Useful resources

Goals

1. Introduce React
2. Describe a typical build pipeline of a commercial React project
3. The **overarching** aim is to encourage you to build your own projects, using React!

What is React?

Image Source: https://www.freecodecamp.org/news/react-js-for-beginners-props-state-explained/

React

- ▶ React is an open-source, frontend JavaScript framework library for building user interfaces
- ▶ It is designed to create a fantastic user (and developer) experience
- ▶ Facebook, Instagram, Netflix and many other well-known platforms are built using React

React + HTML

- ▶ HTML on its own is a declarative markup language used for describing *how* things look
- ▶ HTML and JavaScript together provide an interactive client-side experience for users
- ▶ Common (expected?) to write React using *JSX* and use Babel to transpile that into native JavaScript that is supported by all browsers

Why React?

Image Source:
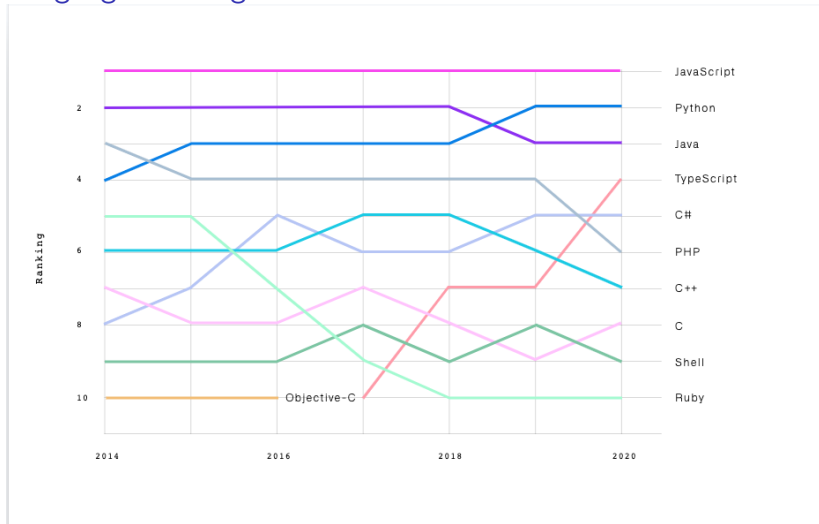*https://freesvg.org/black-question-mark-sign-vector-image*

Language Rankings

Image Source: https://octoverse.github.com/

Download Trends

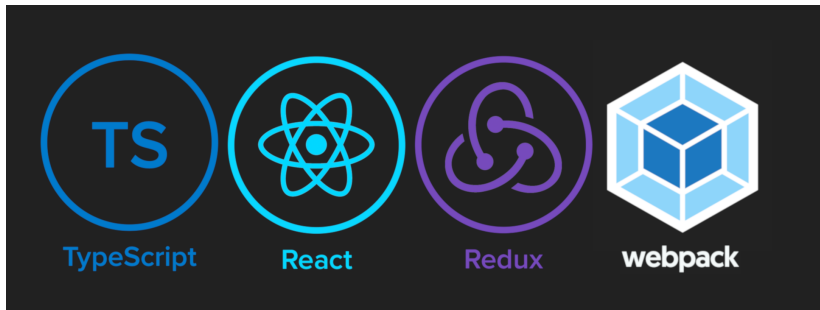**Downloads** in past 6 Months ˅

12,000,000

Anatomy of a React Project

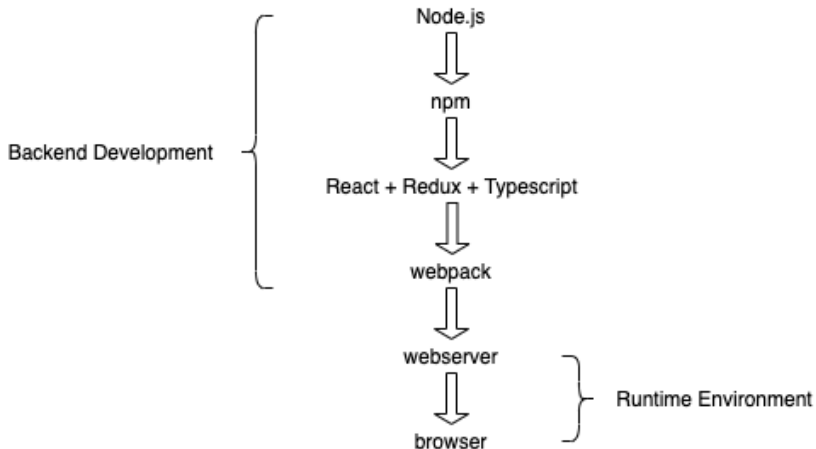*Image Source: https://medium.com/swlh/how-to-structure-your-typescript-react-redux-app-877d1eba1c1e*

Node.js and NPM

Node.js lets developers write server-side Javascript. However, it also provides build environment tools (which is how it is being used above).

► Node.js is a JavaScript runtime environment
► npm is a package manager for JavaScript

A Changing Landscape

Image Source: https://www.theguardian.com/us-news/2019/aug/06/california-collapsing-beach-deaths-highlight-climate-fueled-erosion-crisis

Wabi-sabi

You must accept transience and imperfection, as none of the concepts introduced in this lecture are set in stone - javascript frameworks are a fast changing landscape...

e.g. last year's lecture: `All React components subclass React.Component` - just a year on, that is no longer true! Nowadays, it is more common to see a *functional* approach.

Hello (World)

```
interface HelloProps {
  entity: string
}

export const Hello = (props: HelloProps) => <h1>Hello {prop
```
...and you'd use it like this:
```
const App = () => {

  return (
    <Hello entity="World"/>
  )
}
```

Useful Resources

Image Source:
https://lochside.aberdeen.sch.uk/home-learning-resources/

React Sites

- ▶ https://reactjs.org/
- ▶ https://www.w3schools.com/react/
- ▶ https://www.typescriptlang.org/
- ▶ https://redux.js.org/
- ▶ https://webpack.js.org/
- ▶ https://nodejs.org/en/
- ▶ https://www.npmjs.com/
- ▶ https://material-ui.com/

Thank-you

https://github.com/glowkeeper/reactLecture/
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https://minima.global/
https://minima.global/get-involved