This bibliography was compiled to research more on the background, functions, and abilities of React as well as how to get React set up for Windows and MacOS.

Jain, Sandeep. 2024. “React Introduction.” GeeksforGeeks. https://www.geeksforgeeks.org/reactjs-introduction/.

What exactly is React?
ReactJS or more commonly known as React is a popular JavaScript library uses for building user interfaces. It was developed by Facebook and is widely used to create dynamic and user interactive web applications. React’s strengths lie in it’s ability to create reusable user interface components. React is also fast and works well with many other tools and libraries.

Features of React:

1) Component-Based Architecture
    a) React provides the feature to break down the UI into smaller, self-contained components. Each component can have its own state and props.

2) JavaScript Syntax Extension (or JSX for short)
    a) JSX is a syntax extension for JavaScript that allows developers to write HTML-like code within their JavaScript files. It makes React components more readable and expressive.
        i) Example:

```
const name="GeekforGeeks";
const ele = <h1>Welcome to {name}</h1>;
```

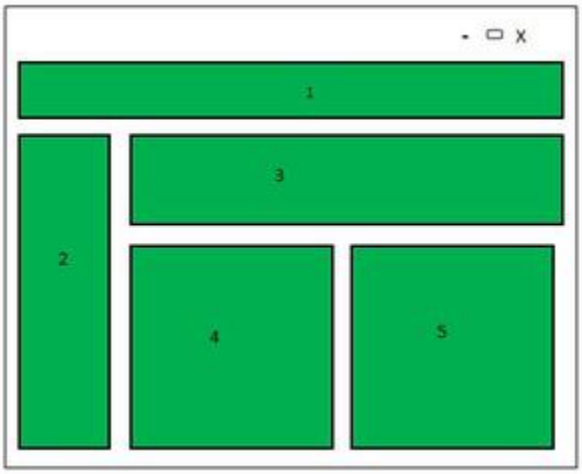
3) Virtual DOM
    a) React maintains a lightweight representation of the actual DOM (Document Object Model) in memory. When changes occur, React efficiently updates only the necessary parts of the DOM.

4) One-way Data Binding
    a) Data in React only flows in one direction, from top to bottom. From parent components to child components. The child component cannot return data to the parent component but can communicate with the parent to change states according to different inputs.

5) Performance:
    a) Because React uses virtual DOM and updates only the moidied parts, it makes the DOM run much faster.

6) Components:

a) React divides the web page into multiple components as it is component-based. Each component is a part of the UI design which has its own logic and design as shown in the below image.



7) Single-Page Applications (SPAs)
   a) React is recommended in creating SPAs, allowing smooth content updates without page reloads. Its focus on reusable components makes it ideal for real-time applications.

These features are what makes React so good at building user interfaces, and it is desccribes as beginner friendly as it only uses JavaScript and HTML/CSS to work with.

"Quick Start – React." n.d. React. Accessed September 8, 2024. https://react.dev/learn#.

Going more in depth to the concepts of React and how components work, I learned that React Components are written in JavaScript. These JavaScript functions return markup:
Like the example provided on the react.dev page shown here.

```
function MyButton() {
 return (
   <button>I'm a button</button>
 );
}
```

Now that the function MyButton() is declared, you can nest this component into other components, as shown here.

```
export default function MyApp() {
 return (
   <div>
     <h1>Welcome to my app</h1>
     <MyButton />
```

```
    </div>
  );
}
```

Since <MyButton /> begins with a capital letter, that is how you know it is a React component. React components ALWAYS start with a capital letter, while HTML tags MUST be lowercase.

Here is the forked website that I used to play around with App.js to get a feel for how React blends in with Javascript and become more familiar with React.
https://codesandbox.io/p/sandbox/nh2zj3?file=%2Fsrc%2FApp.js

Writing markup with JSX is much stricter that HTML. You have to close tags like
. Your component also can't return multiple JSX tags. You have to wrap them into a shared parent, like a ... or an empty <>...</> wrapper:

There is also a super convenient tool where you can convert HTML to JSX with a online converter. This is found at: https://transform.tools/html-to-jsx

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"W3Schools React Quiz." n.d. W3Schools. Accessed September 8, 2024.

https://www.w3schools.com/quiztest/quiztest.asp?qtest=REACT.

To further learn about React I took the React Quiz provided by W3schools. W3Schools Also has great information on specific parts. Such as more information on React JSX, Components, Classes, Props, Events, Conditionals, Lists, Forms and much more. Because this information is too extensive to fit within this bibliography I recommend chacking out the web page here for more information and examples of React here on W3Schools.

"How To Install React on Windows, macOS, and Linux." 2023. Kinsta.

https://kinsta.com/knowledgebase/install-react/.

Not only does this website provide information on downloading React it also provides information on *who* uses react. Because React has gained popularity for a wide range of revelopers for it's ease of use and power tools, many Web Developers use React to create engaging and responsive interfaces. Front-end Developers uses React to connect the user-facing components that interact with backend servers and APIs. Full-stack Developers use React in conjunction with many backend technologies such as Node.js or MongoDB to build full applications.

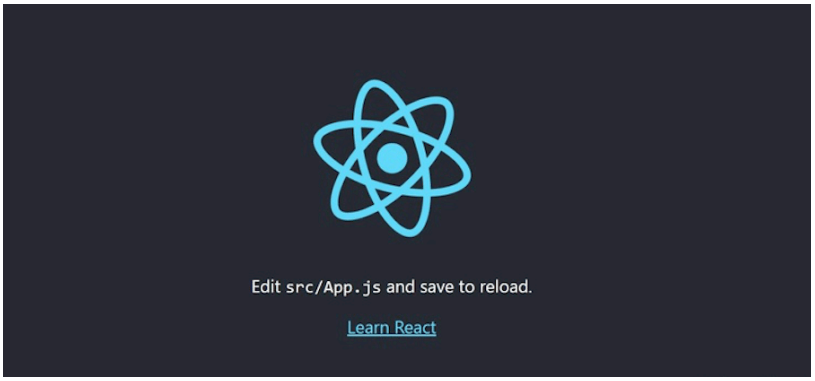
Some of the most prominent companies such as Facebook (React's Creator), Airbnb, Netflix, Uber, Pinterest, Reddit, Dropbox, and likely many more all uses React in building their UI.

Also from the Website: Kinsta.com In order to download React, follow these following steps. For more detailed steps please refer to the website link above.

How to Install React:

For Windows:

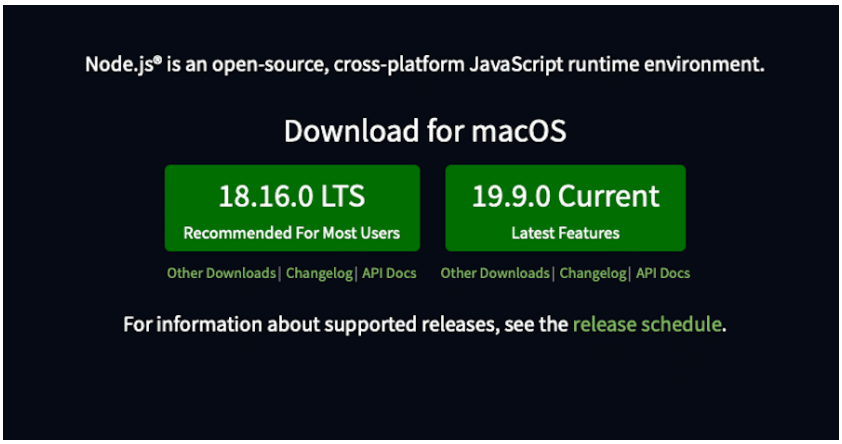
1) Install Node.js and npm.
    a) Download Node.js and npm here at https://nodejs.org/en/download/package-manager.(LTS is recommended)
    b) Follow the command steps to verify the correct installation of Node.js.
2) Install Create React app with the following command: npm install -g create-react-app
3) Create a new React project with the following command: create-react-app my-app, "Replace "my-app" with the desired name for your project. Create React App will create a new directory with the specified name and generate a new React project with a recommended project structure and configuration."
4) Go To the Project Directory and Start the Development Server.
    a) Cd into the project directory
    b) Now start the development server with npm start. This command launches the development server, which watches for changes to your project files and automatically reloads the browser when changes are detected. A new browser window should open with your React application running at http://localhost:3000/ that looks like this:



    c) Now that React is installed you can start building user interfaces!

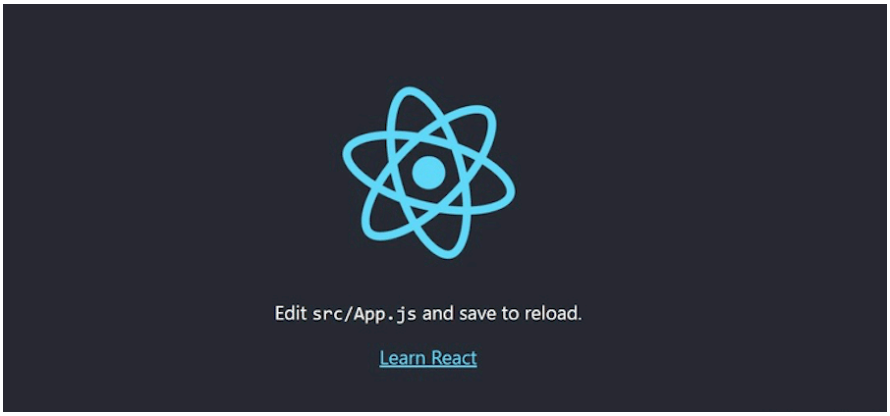
For MacOS:

1) Install Node.js and npm.
    a) Visit the Node.js Installer page and download the LTS version:



    b) Once downloaded, click the .pkg file in your Downloads folder to run the installer. And follow the instructions of the installer.
    c) After the installation is complete, you can verify that Node.js and npm are installed by opening a terminal and running the following commands:
        i) node -v
        ii) npm -v
    d) There is an alternative method provided,
        i) Open the terminal and input this command: brew install node
        ii) Verify that Node.js and npm are installed from steps c.i and c.ii

2) Install Create React App:
    a) First, open the terminal and create a folder named react-app by typing the following command: mkdir react-app
    b) Cd into the directory of react-app
    c) Verify that you are in the correct directory and enter this command: pwd
3) Create a new React project:
    a) Type the following command into the command line: npx create-react-app my-app “npx is a module included with npm. The installation steps will take some time, so be patient.” and “Replace “my-app” with the desired name for your project. Create React App will create a new directory with the specified name and generate a new React project with a recommended project structure and configuration.”
4) Go To the Project Directory and Start the Development Server.
    a) Cd into the my-app directory and type in the command: npm start
    b) A new browser window should open with your React application running at http://localhost:3000/ that looks like this:



c) React is now installed and ready to configure user interfaces on MacOS!

References

"How To Install React on Windows, macOS, and Linux." 2023. Kinsta. https://kinsta.com/knowledgebase/install-react/.

Jain, Sandeep. 2024. "React Introduction." GeeksforGeeks. https://www.geeksforgeeks.org/reactjs-introduction/.

"Quick Start – React." n.d. React. Accessed September 8, 2024. https://react.dev/learn#.

"W3Schools React Quiz." n.d. W3Schools. Accessed September 8, 2024. https://www.w3schools.com/quiztest/quiztest.asp?qtest=REACT.