Competency 120 – ReactJS

Module Plan

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Overview & Purpose

Learn one of the most popular JavaScript frameworks and understand what it does for us.

Install - Node, NPM, React

Installing software can be very tricky. As Full Stack Developers we must become very good at it. Before you start, make sure everything is securely backed up including pictures and documents. Creating backups of software is not generally that important because we can get the software back from other locations.

As we install software, everyone work together. Share all your software installation problems so the whole group can learn from each other. The instructors have no special powers in solving installation issues.

We will be spending a lot of time on the command line. For Windows use PowerShell and for Mac use Terminal and for Kubuntu use konsole.

One item we must understand when using the command line as a Full Stack Developer is the "path". Do some research on the "path" on your operating system and be prepared to discuss in a group the following:

- what is the path?
- how do I see what the path is?
- how do I update the path?
- how do I write a script?

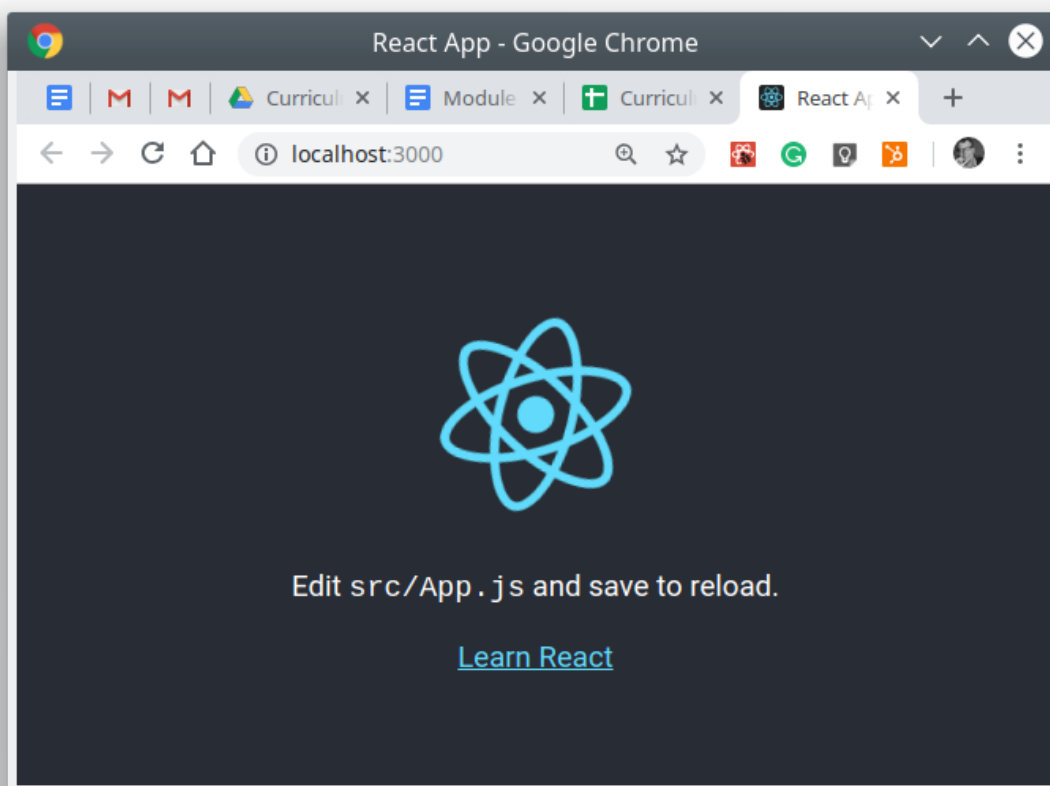Write a script to say "Hello World from script land".

Installing the software:

- **NodeJS**
- in your browser go to the NodeJS website. It will show what version is the latest. We will use the "Recommended For Most Users" version.
- on the command line enter "node -v". If it tells you that it's not installed:
  - follow the installation instructions. Remember to share any issues you are having with your group. Try and understand what issues can occur and how to resolve them.
  - on the command line enter "node -v". If the install worked but the command does not work it could be a path issue. How do we fix that?
- **npmJS**
- on the command line enter "npm -v". npm is installed with Node. Go to the npm website and become familiar with it.

Lecture - React - Create a New React App

In this exercise we will be installing the default React application and get it running on our local machine. What that means is that our computer is representing all the components of the web. It will be "hosting a server" and be the "client". Much more on that later.

- in your browser go to the React home page
- select "Get Started"
- read carefully and scroll to the "Create a New React App"
- select the link "several JavaScript toolchains"
- read carefully and scroll to "Create React App"
- in the console create the React App from your "evolveu" directory. **Do not** check in your code in the git repository yet. We will be doing that in the next exercise
- follow the instructions to create the react app; you should see this when you're done:

Lecture - git with React

We have created our first React application. Let's look at what we've created:

- in your file manager right click on the new react directory "my-app". How big is it? the size will be close to 225 MB.
- which sub-directory is using all the space?
- check your .gitignore file and make sure that directory is not included
  - /node_modules
- in the console go to your evolveu directory and do:
  - git status
- node_modules can be recreated at any time with an "npm install"; therefore it does not need to and should not be stored in a repository

Use standard git practices and check in the code. Make sure those large directories are not included.

Lecture - React Tutorial

In this section we will follow the tutorial in the react site; it's one of the best resources for learning the basics of React.

- Go to the React site
- Select the Tutorial tab ⇒ Intro to React
- Read to - Setup Option 2: Local Development Environment
- Click on the "Optional: Instructions for following along locally using your preferred text editor" ⇒ there is a lot of text hidden under there
- Remember you have already created an app so you can skip that step

By the end if this tutorial you will have learned:
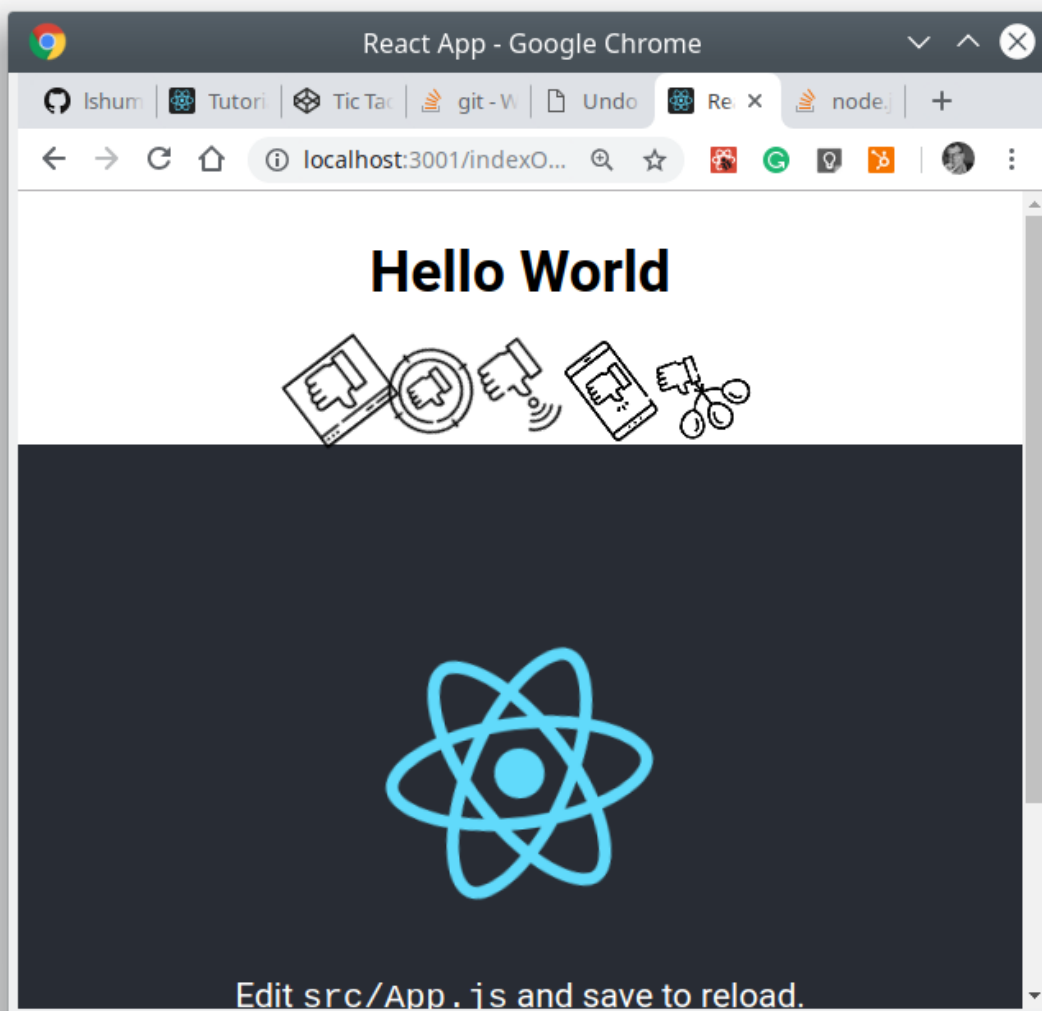
- React Components
- parms
- state

- time travel

What more could you ask for?… Congratulations. That's worth a celebration. If you got to here, treat yourself with something special… Please show Larry your Tic Tac Toe game, you made it to a major milestone and you should be very proud of yourself because I am...

Lecture - Components

Now that we have an understanding of how React works let's start building another app. This app will have a number of components. We want the components to be in the same app but we want the code separated.

- in the directory evolveu create another React app called "objects"
- in the src directory of the new app create a subdirectory called "components"
- one of the components will have the React app look so do not delete anything
- search the web for some cool icons that you like and add them on the main page. Be creative; make them look better than the example. What you can't see is all the icons spinning

- for now indicate on the page (any way you want) which icon has been pressed. We will start creating components that will fit into our new React App.

Great reference material:

- https://facebook.github.io/create-react-app/docs/getting-started