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React JS 16

Study Guide

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Introduction to React JS

What is React JS?

- React JS is an open source client side JavaScript Library.
- React JS is developed by Facebook.
- React JS is not comprised of a full-featured framework .It is a JavaScript library which focuses only on one specific thing and ensures to do it properly. It is generally considered to have V in the MVC pattern.
- React JS empowers developers to build application that live on the web, mobile or desktop.
- Built on JSX and uses EC6 Features.

Key features of React JS.

- Client Side Scripting
- Best in Performance
- Device Independent
- OS Independent
- Mobile Rendering
- Rich UI
- Data binding
- Components
- Modular Approach
- HTTP Calls
- SPA/Routing
- Redux
- Hot Skill in 2021

Setup React JS

1) Install Node JS(14.15.4)

- Download from <https://nodejs.org/en>
- Install to E:\NodeJS-14

2) Observe the following after Installation :

- You can see npm folder under C:\Users\SRINIVAS\AppData\Roaming\npm
- NodeJS installed under E:\NodeJS-14

3) Both npm folder and E:\NodeJS-14 folder will be set to path automatically by the Installers.

4) If any problem for your path then you can set path to npm folder and E:\NodeJS-14 folder as follows.

At Command Line:

set path = %path%;E:\NodeJS-14;

System Environment Variables:

Add this to path - E:\NodeJS-14

At Command Line:

set path = %path%;C:\Users\SRINIVAS\AppData\Roaming\npm;

System Environment Variables:

Add this to path - C:\Users\SRINIVAS\AppData\Roaming\npm

5) check the installation:

- npm --version

6) Install Visual Source Code

- Download from <https://code.visualstudio.com/Download>
- Install to E:\VSCode

7) Install React JS CLI

- Go to command prompt and type the following

npm install -g create-react-app

8) Create your First React project.

- Create the folder to keep all of your React projects and go to that folder

D:\ReactJS\MyLabs> create-react-app lab1

9) Start the Server

D:\ReactJS\MyLabs> cd lab1

D:\ReactJS\MyLabs\lab1> npm start

10) Check the browser which is opened with url.

- <http://localhost:3000>

11) Open your React project in VS Code Editor

12) Explore the IMP files from React Project.

A. package.json =>

- All the dependencies required for React project
- NPM download all dependencies based on this file only.

B. index.html=>

- Starting Point of the Application while rendering.

C. index.css =>

- global styles goes here

D. index.js =>

- Backing the index.html

E. App Componet related files=>

- app.js (App Component Template)
- app.css (App Component CSS) ---local styles goes here
- app.test.js (App Component Unit Tests)

F. Do the following Changes in the First React Project.

- a. Update index.html
- b. Update index.css
- c. Update index.jss
- d. Update App.js
- e. Update App.css

Lab1 : Files Required

1. index.html	2. index.js
3. index.css	4. App.js
5. App.css	

1. index.html

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8" />
    <link rel="icon" href="%PUBLIC_URL%/favicon.ico" />
    <meta name="viewport" content="width=device-width, initial-scale=1" />
    <title>Best React Training</title>
  </head>
  <body>
    <noscript>You need to enable JavaScript to run this app.</noscript>
    <div id="myroot">
    </div>
  </body>
</html>
```

2. index.js

```
import React from 'react';
import ReactDOM from 'react-dom';

import App from './App';
import './index.css';

ReactDOM.render(
  <React.StrictMode>
    <App />
  </React.StrictMode>,
  document.getElementById('root')
);
```

3. index.css



4. App.js

```
import React from 'react';
import './App.css';

const App = () => {

  const companyName = "Java Learning Center";
  let courseName="React 16";

  return (
    <div className="myclass">
      <p className="myclass1"> Welcome to {companyName}</p>
      <p className="myclass2"> You are learning {courseName} from Srinivas Dande</p>
    </div>
  );
}

export default App;
```

5. App.css

```
.myclass1{
  font-size: 25px;
  color:red;
  text-align: center;
  font-family: Cambria;
}
.myclass2{
  font-size: 20px;
  color:blue;
  text-align: center;
  font-family: Cambria;
}
.myclass {
  border: 2px solid red;
  border-radius: 5px;
}
```

Basic Flow:

- 1) When send the request to localhost:3000 then initial file to render is index.html
- 2) index.html has <div> whose id is myroot
- 3) Checks the index.js and render() function will be called

ReactDOM.render(<App />, document.getElementById('myroot'));

- 4) Render function includes the <App/> component under <div> whose root is **myroot**.
- 5) Finally index.html will be displayed.

Questions:

Q1) How to install the React?

Ans:

npm install -g create-react-app

Q2) How to create the React Project?

Ans:

create-react-app myapp

Q3)How to Run the React Project?

Ans:

npm start

Q4) How to build the React Project?

Ans:

npm run-script build

Q5) How to Run Unit Tests of React Application?

Ans:

npm run-script test

Q6) What is the Default Starting point of rendering in React application?

Ans:

index.html

Q7) What is the default Component?

Ans:

App Component (App.js)

Q8)What are various files of App Component?

Ans: .

- App.js (Contains JSX)
- App. css (Component CSS)
- App.test.ts (Component UnitTest).

Q9) How to use React Component?

Ans:

React Component can be used in two ways.

1)with HTML(JSX)

<Hello/>

2)with Component Class.

h:Hello=new Hello()

Q10) What is JSX?

Ans:

Extended Java Script. We are writing React Components with JSX only .

Below is the JSX Code , Not the HTML.

<div className="myclass">

<h2> Hello Guys </h2>

</div>

Q11)What is npm?

Ans:

- Npm - Node Package Manager
- npm is part of NodeJS.
- npm is responsible to download and manage the packages required for your project
- npm version : 6.14.6

Q12) How to Uninstall React?

Ans:

npm uninstall -g create-react-app

Q13) How to Uninstall Node JS?

Ans:

Uninstall from Settings section.

Note : Above UnInstallation Process has to clean both npm and npm-cache folders if not happened then remove manually.