MODULE: 3 (JavaScript Essentialsos

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**1)What is React Js?**

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[Jordan Walke](https://educationecosystem.com/guides/programming/react-js/history), one of Facebook’s software engineers, created React to do just that. React simplified the development process by providing a more organized and structured way of building dynamic and interactive user interfaces with reusable components.

**2). What is NPM in React Js?**

**Ans.**

 NPM is a package manager for Node.js packages, or modules if you like.

[www.npmjs.com](https://www.npmjs.com/) hosts thousands of free packages to download and use.

The NPM program is installed on your computer when you install Node.js

**npm** is the world's largest **Software Registry**.

The registry contains over 800,000 **code packages**.

**Open-source** developers use **npm** to **share** software.

Many organizations also use npm to manage private development.

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**3). What is Role of Node Js in react Js?**

Ans.

[ReactJS](https://www.simplilearn.com/tutorials/reactjs-tutorial) and [NodeJS](https://www.simplilearn.com/tutorials/nodejs-tutorial/what-is-nodejs) are both [JavaScript](https://www.simplilearn.com/tutorials/javascript-tutorial/introduction-to-javascript) technologies. But the uses of NodeJS and ReactJS are entirely different. NodeJS is a framework of JavaScript which is mainly used for working with the [backend](https://www.simplilearn.com/tutorials/programming-tutorial/what-is-backend-development) of our application or building the backend using JavaScript, whereas ReactJS is a JavaScript front-end library. It is mainly used for building the user interface or the [frontend](https://www.simplilearn.com/tutorials/programming-tutorial/best-front-end-programming-languages) of our application. Though both are used for different purposes, both these technologies make our application faster and easy to handle

**4.) What is CLI command In React Js?**

**Ans.**

In React.js, CLI (Command Line Interface) commands are used to perform various tasks related to building, testing, and deploying React applications.

Some common CLI commands used in React.js development include:

* **npx create-react-app my-app**: This command creates a new React application called "my-app" using the Create React App tool.
* **npm start**: This command starts the development server and opens the application in the default browser. It also automatically reloads the application when changes are made.
* **npm run build**: This command creates a production-ready build of the React application by compiling and optimizing the code.
* **npm test**: This command runs the test suite for the React application.
* **npm run eject**: This command "ejects" the React application from the Create React App environment and exposes all configuration files and build scripts.

**5). What is Components in React Js?**

**Ans.**

A Component is considered as the core building blocks of a React application. It makes the task of building UIs much easier. Each component exists in the same space, but they work independently from one another and merge all in a parent component, which will be the final UI of your application.

In ReactJS, we have mainly two types of components.

1.Function component

2. Class component

**6). What is Header and Content Components in React Js?**

Ans.

 Headers are compositions that extend standard navbar functionalities. They contain additional components like a jumbotron, sub-navbar, or image covers which serve as a containers for extra navigation elements - usually links, forms, or call-to-action buttons.

**7) How to install React Js on Windows, Linux Operating System? How to install NPM and How to check version of NPM**

**Ans.**

### Step 1:

You can download the Node.js installer free from the [official website](https://nodejs.org/en/). The long-term support (LTS) version is recommended even though the current version has the latest features.

### Step 2:

Follow the installation instructions on how to install React on windows until you get asked if you want to automatically install the necessary tools. Leave the checkbox unchecked to automatically install the necessary tools (Chocolatey install) and proceed with the installation.

### Step 3:

After the installation, you can open the command prompt by typing **cmd** in the Windows search bar. At the prompt, run the node -vcommand.

It should give you the current version of Node.js installed.

After that, run the following command at the prompt to install the Create-React-App module, making creating and deploying React into projects with a single command effortless.

npm install -g create-react-app

Use the following command to verify the installation.

create-react-app --version

### Step 4:

When using the create-react-app command, ensure you are in the desired directory or folder location since it creates the project folder in the current path. Create a new folder in which your first React app will be. You can do so from the command prompt by running the following command. For this tutorial, the new folder is myfirstreactapp.

mkdir myfirstreactapp

After that, move inside that folder by running the cd command followed by the folder name.

cd myfirstreactapp

**8).  How to check version of React Js**

**Ans.** To check the version of ReactJS installed in your project, you can open a terminal or command prompt, navigate to your project directory, and run the following command:

npm view react version

This will display the version number of ReactJS installed in your project.

If you want to check the global version of ReactJS installed on your system, you can run the following command:

npm list -g react

This will display the version number of ReactJS installed globally on your system.

**9). How to change in components of React Js?**

**Ans.**

1. Locate the component you want to make changes to. Components are usually located in the **src/components** directory in a typical ReactJS project.
2. Open the file containing the component code in your preferred code editor.
3. Make the necessary changes to the component code. This can include changing the component's JSX code, modifying the component's state or props, or adding new methods to the component.
4. Save the changes to the file.
5. If the changes you made affect the appearance of the component, refresh the browser window where the application is running to see the changes.

**10). Create Increment decrement state change by button click**

**Ans.**

import React, { useState } from "react";

function Counter() {

  const [number, setNumber] = useState(0);

  const handleIncrement = () => {

    setNumber(number + 1);

  };

  const handleDecrement = () => {  // Define function to handle increment button click

    setNumber(number - 1);

  };

  return (

    <div>

      <button onClick={handleIncrement}>+</button>

      <h1>{number}</h1>

      <button onClick={handleDecrement}>-</button>

    </div>

  );

}

export default Counter;