

# MODULE: 1 (React - Components, State, Props)

## 1. What is JavaScript Output method?

**Ans:**

- JavaScript Output defines the ways to display the output of a given code. The output can be displayed by using four different ways which are listed below:
  1. **innerHTML**: It is used to access an element. It defines the HTML content
  2. **document.write()**: It is used for testing purpose.
  3. **window.alert()**: It displays the content using an alert box.
  4. **console.log()**: It is used for debugging purposes.

## 2. How to used JavaScript Output method?

**Ans:**

1. **innerHTML**: It is used to access an element. It defines the HTML content.

**Syntax** : `document.getElementById("id").innerHTML;`

**Example** :

```
<p id="GFG"></p>
```

```
<!-- Script to use innerHTML -->
```

```
<script>
```

```
document.getElementById("GFG").innerHTML
```

```
    = 10 * 2;  
</script>
```

2. **document.write():** It is used for testing purpose.

**Syntax:** document.write()

**Example:**

```
<p id="GFG"></p>  
<!-- Script to uses document.write() -->  
<script>  
    document.write(10 * 2);  
</script>
```

3. **window.alert():** It displays the content using an alert box.

**Syntax:** window.alert()

**Example:**

```
<p id="GFG"></p>  
<!-- Script to use window.alert() -->  
<script>  
    window.alert(10 * 2);  
</script>
```

4. **console.log():** It is used for debugging purposes.

**Syntax:** console.log()

**Example:** <p id="GFG"></p>

```
<!-- Script to use console.log() -->  
<script>  
    console.log(10*2);  
</script>
```

### **3. What is React Js?**

**Ans:**

- The React.js framework is an open-source JavaScript framework and library developed by Facebook. It's used for building interactive user interfaces and web applications quickly and efficiently with significantly less code than you would with vanilla JavaScript.
- In React, you develop your applications by creating reusable components that you can think of as independent Lego blocks. These components are individual pieces of a final interface, which, when assembled, form the application's entire user interface.

### **4. What is NPM in React Js?**

**Ans:**

- npm is an abbreviation used for the node package manager. It is a package manager for JavaScript. It is the default package manager that comes with NodeJS when you install it. It consists of a command-line interface and an online database of public packages and private packages that are paid which is called the npm Registry.

### **5. What is Role of Node Js in react Js?**

**Ans:** There are specific reasons to use the deadly combination of Node.js and React for web app development. Here are a few:

1. Scalability = The combination of Node and React allows developers to build dynamic, large, data-driven web apps that are responsive across multiple devices. It would help if you had scalability while working on large projects and maintaining your website's performance.

2. MERN Stack = MERN Stack means MongoDB, Express, React, and Node.js. And no better combo than these frameworks can provide a unique dimension to a website. You can use Node.js with MERN Stack alongside React.js. Hence, you can use the Node and React combination for web app development.
3. JSON APIs = Creating JSON (JavaScript Object Notation) APIs for web development is competent due to the high code reusability and access to immediate code sharing in React.js. And Node.js can effectively allow this.
4. Real-Time Data = If your business app handles real-time data management or aims to build a data streaming app, you should use Node.js as your app requires an ongoing server connection.
5. Fast Development = When using the combination of React and Node for web app development, you can receive a high ROI and save your money and time. After all, these technologies work excellently to offer an effective platform for building rapid functioning and easy-to-maintain websites.
6. SPAs (Single Page Applications) = Does your business require a single-page app with asynchronous data loading? Then, you must select React with Node back-end as it allows building a lightweight back-end model through callback functions.
7. Single Language for Front-end and Back-end = With the combination of Node and React, developers don't require learning complex back-end languages like Python or Ruby. They can use Node for server-side development and React for front-end code building without switching between

frameworks and programming languages. And it saves resources, money, and time.

8. High Server Load = The combination of Node.js and React can balance the high server requests and load when developers work on web app development.
9. Organized Process = The deadly combination of React and Node create an organized web development process. After all, these technologies are scalable, effective, and fast. When working together, they can help you build high-functioning websites.
10. Increased Use of JavaScript = Node with React enables the use of the total strength of JavaScript for building front-end and back-end codes. It gives more freedom and convenience when building websites or web apps, as you can use one language for every aspect.

## **6. What is CLI command In React Js?**

**Ans:**

- create-react-app used to generate the boilerplate version of a React application thru command line.
- create-react-app has taken care of setting up the main structure of the application as well as a couple of developer settings. Most of what you see will not be visible to the visitor of your web app. React uses a tool called webpack which transforms the directories and files here into static assets.

## **7. What is Components in React Js?**

**Ans:**

- A Component is one of the core building blocks of React. In other words, we can say that every application you will develop in React will be made up of pieces called components. Components make the task of building UIs much easier. You can see a UI broken down into multiple individual pieces called components and work on them independently and merge them all in a parent component which will be your final UI.

## **8. What is Header and Content Components in React Js?**

**Ans:**

- React projects are built with Components. To build web applications with React you need to think in Components.
- React would best be described as a library for creating user interfaces. Think of Components as the elements of user interfaces. For example, your site might be made up of the following Components  
App, Header, Logo, NavBar, NavLink, Content, Card, Footer
- Each of these elements would be separate Components, and you would define a file for each. Component files are always named after the component they contain: App.jsx, Header.jsx, Logo.jsx, NavBar.jsx, NavLink.jsx, Content.jsx, Card.jsx, and Footer.jsx.
- So in header component we put all the code related to header .

## 9. How to install React Js on Windows, Linux Operating System? How to install NPM and How to check version of NPM?

Ans:

- **Step 1:** Install Node.js installer for windows.
- **Step 2:** Open command prompt to check whether it is completely installed or not type the command : `node -v`
- If the installation went well it will give you the version you have installed
- **Step 3:** Now in the terminal run the below command: `install -g create-react-app`
- It will globally install react app for you. To check everything went well run the command : `create-react-app --version`
- **Step 4:** Now Create a new folder where you want to make your react app using the below command: `mkdir newfolder`
- Move inside the same folder using the below command: `cd newfolder` (your folder name)
- **Step 5:** Now inside this folder run the command : `create-react-app reactfirst YOUR_APP_NAME`
- **Step 6:** Now open the IDE of your choice for eg. Visual studio code and open the folder where you have installed the react app newolder (in the above example) inside the folder you will see your app's name reactapp (In our example). Use the terminal and move inside your app name folder. Use command `cd reactapp` (your app name)
- **Step 7:** To start your app run the below command : `npm start`

## 10. How to check version of React Js?

Ans:

- Open the terminal and type this command after installing react app : `create-react-app --version`

## 11. How to change in components of React Js?

**Ans:**

- To change the state of the React component is useful when you are working on a single page application, it simply replaces the content of the existing component for the user without reloading the webpage.
- We have to set initial state value inside constructor function and set click event handler of the element upon which click, results in changing state. Then pass the function to the click handler and change the state of the component inside the function using `setState`. The `setState` function used to change the state of the component directly or with the callback approach as mentioned below.
- Syntax : `this.setState({ stateName : new-state-value})`