**WEEK-6**

**REACT JS HANDSON 1**

* Define SPA and its benefits?

SPA stands foe Single Page Application. In simple words, Application in which components get refreshed instead of total page is called an SPA. Reduced load on server, faster navigation due to lower internet consumption and enhanced user experience are the major benefits of SPA.

* Define React and identify its working

React is basically a frontend javascript library that works on the principle of building pages as group of components. These can be either class based or function based. Whenever an event occurs, that particular component is only refreshed. Main features of react is reusability.

* Identify the differences between SPA and MPA

SPA stands for Single Page Application. MPA stands for Multiple Page Application.

In SPA,

1. We have a single page consisting of multiple components.
2. A part of page gets refreshed.
3. Possible only using react.
4. Faster.

In MPA,

1. We have multiple pages and each page is a single component.
2. Whole page gets refreshed.
3. Can be built using react and HTML, CSS also.
4. Slower, but better for SEO.

* Explain Pros & Cons of Single-Page Application?

Pros:

1. Reduced load on server
2. Faster
3. Enhanced user experience

Cons:

1. Not suitable for SEO
2. Initial load time is high
3. Browser history can be tricky

* Explain about React?

React is a front-end JavaScript library developed by Facebook. It helps developers build interactive web apps using components and a virtual DOM.

* Define Virtual DOM?

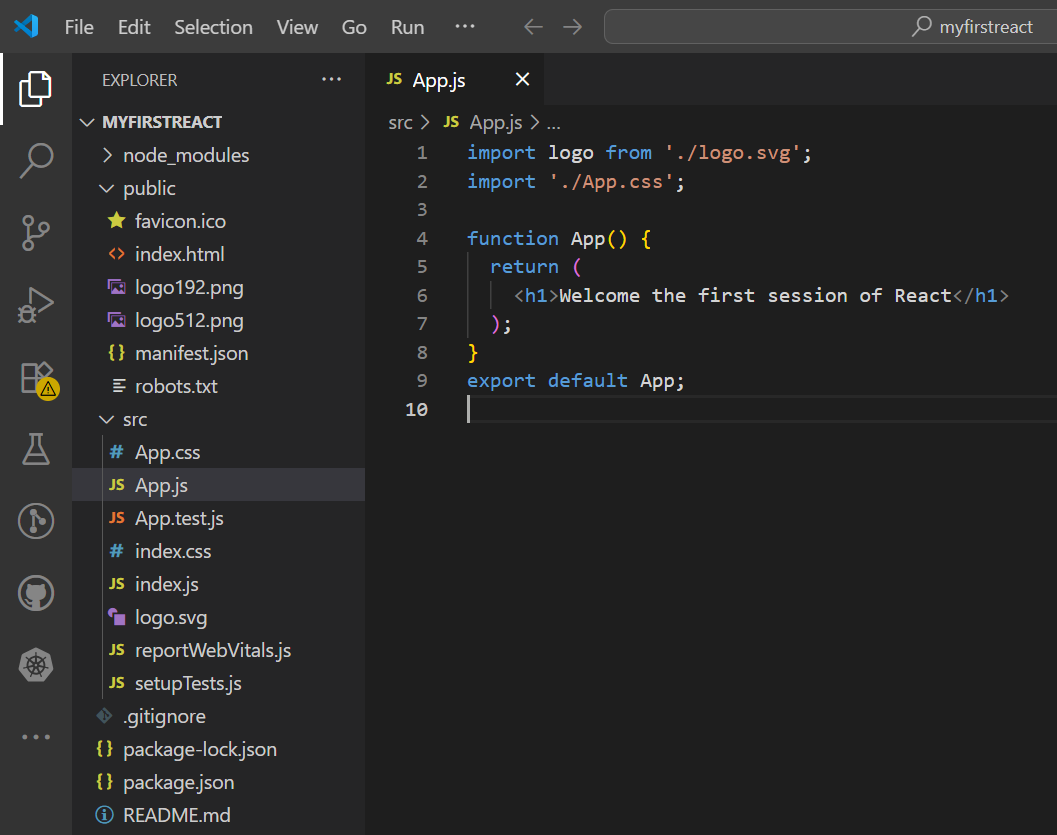
Virtual DOM is a copy of the real DOM that React uses to track changes. It helps React update the webpage faster and more efficiently by only changing the parts that are necessary.

* Explain Features of React

1. **Component-Based Architecture**  
   React breaks the UI into small, reusable pieces called components. Each component controls its own part of the screen, making it easier to manage and reuse code.
2. **Virtual DOM**  
   Instead of changing the whole webpage every time something updates, React uses a virtual DOM (a lightweight copy of the real DOM) to check what has changed and updates only those parts. This makes updates faster.
3. **Reusable Code**  
   Since React uses components, the same component can be reused in different places of the application. This reduces code duplication and saves time.
4. **Fast and Efficient**  
   Because React only updates the changed parts of the webpage (thanks to the virtual DOM), the overall performance is much better compared to older methods.
5. **One-Way Data Flow**  
   In React, data moves in one direction – from parent to child. This makes it easier to debug and understand how data is moving through your app

**myfirstreact app**

* I first downloaded and installed Node.js from the official website. This also installed npm automatically.
* After installation, I set up the React environment using the create-react-app tool.
* I created a new React project named “myfirstreact” using this setup.
* Then, I opened the project folder in Visual Studio Code to make changes.
* I went to the App.js file, removed the default code, and wrote a simple message to display a heading on the page.
* After saving the changes, I started the project and opened it in the browser.
* The final output showed the message: "Welcome to the first session of React" as a heading on the web page.

****

