

Week 6

Hands-On Lab 1 : Setting Up and Running Your First React App – "myfirstreact"

PROGRAM:

```
npm install -g create-react-app
npx create-react-app myfirstreact
cd myfirstreact
code .
// src/App.js
import React from 'react';

function App() {
  return (
    <div>
      <h1>welcome to the first session of react</h1>
    </div>
  );
}

export default App;

npm start
```

OUTPUT:



Welcome to the first session of React

OBJECTIVES

1. Define SPA and its benefits

1. SPA (Single-Page Application) loads a single HTML page and updates data dynamically without reloading the entire page.
2. It uses JavaScript and AJAX to fetch and display content smoothly.
3. Provides faster performance and a better user experience by avoiding full page reloads.

2. Define React and identify its working

1. React is a JavaScript library for building user interfaces, especially for SPAs.
2. It uses components to create reusable UI elements with their own state and behavior.
3. React works by updating a Virtual DOM and syncing changes with the real DOM efficiently.

3. Identify the differences between SPA and MPA

1. SPA loads a single page and updates content dynamically; MPA loads a new page from the server on each interaction.
2. SPA has better performance; MPA is better for SEO and traditional navigation.
3. SPA uses client-side routing; MPA uses server-side routing.

4. Explain Pros & Cons of Single-Page Application

1. Pros: Fast navigation, reduced server load, and better user experience.
2. Cons: SEO challenges, initial load time may be longer, and requires JavaScript to function.
3. SPA is ideal for dynamic applications but not always suitable for content-heavy or SEO-focused sites.

5. Explain about React

1. React is an open-source JavaScript library developed by Facebook for building UI components.
2. It is used for developing fast, responsive single-page applications using reusable components.
3. React focuses on declarative programming and manages the application view efficiently.

6. Define Virtual DOM

1. Virtual DOM is a lightweight copy of the real DOM maintained by React.
2. When state changes, React updates the Virtual DOM and compares it with the previous version.
3. Only the changed elements are updated in the real DOM, improving performance.

7. Explain Features of React

1. JSX for writing HTML inside JavaScript and easy UI structure.
2. Component-based architecture for reusability and maintainability.
3. Features like Virtual DOM, hooks (useState, useEffect), and one-way data binding improve efficiency and control.