**Hands-on in this Document**

**Objectives**

**Define SPA and its benefits**

Single Page Application (SPA)

A Single Page Application is a web application that interacts with the user by dynamically rewriting the current page rather than loading entire new pages from the server. It improves performance and user experience.

Benefits of SPA

• Fast loading  
• Seamless user experience  
• Efficient caching  
• Easy debugging

**Define React and identify its working**

React is a JavaScript library developed by Facebook for building user interfaces. It allows developers to create reusable UI components.

**Identify the differences between SPA and MPA**

SPA vs MPA

SPA loads a single HTML page and dynamically updates it, while MPA loads multiple pages for each interaction. SPAs are faster but MPAs are more SEO-friendly.

**Explain Pros & Cons of Single-Page Application**

Pros of SPA

• Faster navigation  
• Rich user experience  
• Reduced server load

Cons of SPA

• SEO limitations  
• Initial loading time  
• Requires JavaScript

**Explain about React**

React is a JavaScript library developed by Facebook for building user interfaces, especially for single-page applications (SPAs). It allows developers to create reusable UI components and efficiently update and render just the right components when data changes, using a concept called the Virtual DOM. React makes the UI fast, scalable, and simple to manage.

**Define virtual DOM**

Virtual DOM is a lightweight copy of the actual DOM. React uses it to improve performance by updating only the changed parts instead of the whole DOM.

**Explain Features of React**

Features of React

• JSX Syntax  
• Virtual DOM  
• Components-based architecture  
• Unidirectional data flow  
• Performance optimization

**Code :**

**--App.js**

import React from 'react';

function App() {

  return (

    <div>

      <h1>Welcome to the first session of React</h1>

    </div>

  );

}

export default App;

Output :

<http://localhost:3000>

