

1.React.js – HOL

1. Define SPA and Its Benefits

SPA (Single-Page Application):

A web app that loads a single HTML page and dynamically updates content without reloading the page.

Benefits:

- Faster navigation and user experience
 - Less server load after initial load
 - Efficient data loading with AJAX
 - Smooth transitions between views
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2. Define React and Identify Its Working

React:

A JavaScript library for building user interfaces, developed by Facebook.

How React Works:

- Uses components to build UIs
 - Maintains a virtual DOM for efficient updates
 - Handles UI rendering declaratively
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3. Differences Between SPA and MPA

Feature	SPA	MPA
Page Reloads	No	Yes
Speed	Faster	Slower
SEO Support	Poor (needs extra config)	Better

Feature	SPA	MPA
Navigation	Client-side routing	Full page reload
Development Focus	Frontend-heavy	Balanced frontend/backend

4. Pros & Cons of Single-Page Applications

Pros:

- Fast user experience
- Reusable components
- Easy to debug using tools like React DevTools
- Mobile-friendly structure

Cons:

- SEO is more complex
 - Initial load time can be long
 - Requires JavaScript to be enabled
 - More complex state management
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5. Explain About React

React is:

- A declarative, component-based JavaScript library
 - Maintains its own virtual DOM
 - Used for building scalable front-end apps
 - Works with tools like Redux, React Router, etc.
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6. Define Virtual DOM

Virtual DOM:

A lightweight copy of the real DOM. React updates the virtual DOM first and then syncs only the changed parts with the real DOM using a process called reconciliation.

7. Features of React

- Component-Based Architecture
- Virtual DOM
- JSX (JavaScript + XML)
- One-way data binding
- React Hooks for functional components
- Reusable components
- Fast rendering performance

Command : npx create-react-app myfirstreact

App.js

```
function App() {  
  return (  
    <div>  
      <h1>Welcome to the first session of React</h1>  
    </div>  
  );  
}  
  
export default App;
```

Command : npm start

OUTPUT :

