

## **What is React?**

React is an open-source JavaScript library for building user interfaces or UI components, developed by Facebook.

## **Explain JSX**

JSX (JavaScript XML) is a syntax extension for JavaScript recommended by React for describing what the UI should look like.

## **What is the virtual DOM?**

The virtual DOM is a lightweight copy of the actual DOM in memory. React uses it to improve performance by updating only the changed parts of the actual DOM.

## **What is the significance of keys in React?**

Keys are used to identify and differentiate between components in React. They help React identify which items have changed, added, or removed.

## **What are state and props in React?**

State is an internal data store that belongs to a specific component, and it can be changed overtime. Props are properties passed to a component from its parent, and they are immutable.

## **What is the difference between state and props?**

State is internal to a component and can be changed over time, while props are external and passed to a component.

## **Explain the concept of lifting state up.**

Lifting state up is a pattern where the state of a child component is moved to its parent component, allowing multiple child components to share the same state.

## **What is the purpose of setState in React?**

setState is used to update the state of a component and trigger a re-render.

## **What is React Router?**

React Router is a library that enables navigation among views in a React application, allowing for the development of single-page applications.

## **Explain the useEffect hook.**

The `useEffect` hook in React is used for side effects in functional components, such as data fetching, subscriptions, or manually changing the DOM.

### **What are controlled components in React?**

Controlled components are components where the form data is controlled by React state. The input elements receive their current value from the state and have their value updated through a callback function.

### **What is Redux, and why is it used?**

Redux is a state management library for JavaScript applications, commonly used with React. It helps manage the state of an application in a predictable way.

### **Explain the concept of higher-order components (HOC).**

Higher-order components are functions that take a component and return a new component with additional features or props.

### **What is the purpose of the `useReducer` hook?**

The `useReducer` hook is used for managing complex state logic in React applications. It is an alternative to `useState` when state transitions are more complex.

### **What is the significance of the `key` attribute in React lists?**

The `key` attribute is used to uniquely identify elements in a list. It helps React efficiently update the DOM when the list changes.

### **What is the difference between class components and functional components?**

Class components use ES6 classes and have additional features like state and lifecycle methods, while functional components are simpler and are often used with hooks.

### **Explain the concept of refs in React.**

Refs are used to access the DOM directly or to reference a React element. They provide a way to interact with the underlying DOM nodes in React.

### **What are React hooks?**

React hooks are functions that allow functional components to use state, lifecycle methods, and other React features.

### **Explain the purpose of the `useContext` hook.**

The useContext hook is used to access the value of a React context within a functional component.

**What is the significance of the dangerouslySetInnerHTML property in React?**

dangerouslySetInnerHTML is used to inject HTML directly into a component, but it should be used with caution to avoid cross-site scripting (XSS) vulnerabilities.

**What is the purpose of the componentDidMount lifecycle method?**

componentDidMount is invoked immediately after a component is mounted, making it suitable for initial AJAX requests or setting up subscriptions.

**What is the React developer tool?**

React Developer Tools is a browser extension that allows developers to inspect and debug React component hierarchies in the Chrome and Firefox browsers.

**Explain the concept of context in React.**

Context provides a way to pass data through the component tree without having to pass props manually at every level. It is often used to share values like themes or authentication status.

**What are the advantages of using React?**

React offers a virtual DOM for improved performance, a component-based architecture for modular development, and a strong community support, among other advantages.

**How does React handle prop drilling, and how can it be avoided?**

Prop drilling occurs when props are passed down through multiple levels of components. It can be avoided by using context or state management libraries like Redux.

**What is the purpose of the shouldComponentUpdate method?**

shouldComponentUpdate is a lifecycle method that determines if a component should re-render. Developers can use it to optimize performance by preventing unnecessary renders.

**Explain the significance of React Fragments.**

React Fragments allow developers to group multiple elements without adding an extra node to the DOM, helping to keep the structure clean.

**What is the significance of the key prop in React Router?**

The key prop in React Router is used to force the remounting of a component when the key changes, ensuring that the component is fully reinitialized.

### **What is the purpose of the forwardRef function in React?**

forwardRef is used to forward refs through components, allowing parent components to interact with the child's DOM node.

### **Explain the concept of error boundaries in React.**

Error boundaries are components that catch JavaScript errors anywhere in their child component tree and log those errors, display a fallback UI, or take other actions.

### **What is the significance of the memo function in React?**

memo is a higher-order component that memorize the rendering of a functional component, preventing unnecessary re-renders if the props have not changed.

### **How does React handle forms?**

React handles forms by using controlled components, where form data is controlled by the React state.

### **Explain the purpose of the useMemo hook.**

The useMemo hook is used to memorize the result of a function, preventing unnecessary calculations and improving performance.

### **What is the significance of the useCallbackhook?**

useCallback is used to memorize callback functions, preventing them from being recreated on every render.

### **What are React portals?**

React portals provide a way to render children into a DOM node that exists outside the parent component's hierarchy.

### **Explain the concept of suspense in React.**

Suspense is a feature in React that allows components to "wait" for something before rendering, such as data fetching or code splitting.