**1) What is Single Page Application ?**

Single page applications work within a single browser session and allow users to jump between parts of the system without requiring the entire page to reload.

**2) Difference between npm & npx ?**

• Node package Manager is a tool: used to install, maintain, uninstall javascript modules (packages)

• NPX: (Node package Execution) If we want directly run a package for once.

• NPM is for management -vs- NPX is one time execution.

**3) What is babel & Web-pack?**

• Bable is a transpiler & also a compiler.

• It will take ES6 input & converts it to ES5 for our browsers to understand.

• It also converts JSX (JavaScript Extended) language to JS.

• Web-pack is basically bundling tool used by react:

• It will bundle all the CSS & html files & will add to Index.html file. (Using <link> tags)

**4) Explain Class based components vs functional components?**

|  |  |
| --- | --- |
| **Functional Components** | **Class Components** |
| Functional components are written  as a JavaScript function. | Class components are written  as a JavaScript class. |
| Functional components do not have a state or lifecycle methods. | Class components have a state  and can implement lifecycle  methods like  componentDidMount  and componentDidUpdate. |
| Faster performance as they do  not have state and lifecycle,  react needs to do less work to  render these components. | Slower performance as they  have state and lifecycle, react  needs to do comparatively  more work to render  these components. |
| Functional components code tend  to be shorter and more concise. | Class components require  the boilerplate code, such as a constructor method and the use  of “this” to access props and state. |

**5) What is Hooks? What are different types of Hooks?**

Hooks are functions that let you “hook into” React state and lifecycle features from function components. Hooks don't work inside classes — they let you use React without classes.

Types of Hooks are:

• ‘useState’: It is the most commonly used React Hook. It allows functional components to have state variables. It takes an initial state value as the argument and returns an array with two elements — the current state value and a function to update that state.

• ‘useEffect’: It enables performing side effects, such as data fetching, subscriptions, or DOM manipulations after the component has been rendered.

• ‘useRef’: Provides a way to create mutable references to values or DOM elements that persist across renders. Often used for accessing or manipulating DOM elements.

**6) What is a state in React?**

State is an Object, and we use the state to store data, that will be used by our component.A component's state can change over time; whenever it changes, the component re-renders.

**7) What does setState() method do?**

setState() method will modify value of the state.

Then it will Schedule a call to our render method.

**8) What is an Event Handler?**

Event Handler are functions which will be called (invoked) by the browsers when an event occurs.

**9) What are Synthetic events?**

Synthetic events are representative of real events a.k.a wrapper around realevents. Because we have to deal with different implementation of eventfunctions in different browsers, a synthetic event acts as a specification for asingle event access all browsers.

**10) What is a target?**

A target inside a synthetic event object is the element on which the event has occurred. As we cannot use DOM functions like document.getElementById() etc inside react, we use event object to fetch the element present inside ‘target variable’.

**11) What is Virtual DOM?**

The virtual DOM (VDOM) is a programming concept where an ideal, or “virtual”,representation of a UI is kept in memory and synced with the “real” DOM by a library such asReact DOM. This process is called reconciliation.