**REACT INTERVIEW QUESTIONS**

**1. What is React?**

React is a JavaScript-based UI development library It is a a development server that uses Web pack to compile React, JSX, and ES6, auto-prefix CSS files for building modern applications. React is used for handling the view layer and can be used for development of both web and mobile applications.

**2. What are the major features of React?**

JSX (JavaScript Syntax Extension) =   JSX is a combination of HTML and JavaScript. You can embed JavaScript objects inside the HTML elements. JSX is not supported by the browsers, as a result Babel Compiler trans compile the code into JavaScript code. JSX makes codes easy and understandable. It is easy to learn if you know HTML and JavaScript.

Virtual DOM = DOM stands for Document Object Model It is the most important part of the web as it divides into modules and executes the code. Usually, JavaScript Frameworks updates the whole DOM at once, which makes the web application slow. But react uses virtual DOM which is an exact copy of real DOM. Whenever there is a modification in the web application, the whole virtual DOM is updated first and finds the difference between real DOM and Virtual DOM. Once it finds the difference, then DOM updates only the part that has changed recently and everything remains the same.

One-way data binding = One - way data binding, the name itself says that it is a one-direction flow. The data in react flows only in one direction i.e. the data is transferred from top to bottom i.e. from parent components to child components. The properties (props) in the child component cannot return the data to its parent component but it can have communication with the parent components to modify the states according to the provided inputs. This is the working process of one-way data binding. This keeps everything modular and fast.

Performance = As we discussed earlier, react uses virtual DOM and updates only the modified parts. So , this makes the DOM to run faster. DOM executes in memory so we can create separate components which makes the DOM run faster.

Extensions = React has many extensions that we can use to create full-fledged UI applications. It supports mobile app development and provides server-side rendering. React is extended with Flux , Redux , React Native, etc. which helps us to create good-looking UI.

Conditional statements = = JSX allows us to write conditional statements. The data in the browser is displayed according to the conditions provided inside the JSX.

Components = React.js divides the web page into multiple components as it is component-based. Each component is a part of the UI design which has its own logic and design as shown in the below image. So the component logic which is written in JavaScript makes it easy and run faster and can be reusable.

Simplicity Performance = React.js is a component-based which makes the code reusable and React.js uses JSX which is a combination of HTML and JavaScript. This makes code easy to understand and easy to debug and has less code.

**3. What is JSX?**

JSX stands for JavaScript XML. It is simply a syntax extension of JavaScript. It allows us to directly write HTML in React (within JavaScript code)

**4. What is the difference between state and props?**

Props are used to pass data from a parent component to a child component, while state is used to manage data within a component. Props are immutable and cannot be changed within a component, while state is mutable and can be updated using the setState function.

**5. What is the difference between Real DOM and Virtual DOM?**

Real DOM is what you see on your browser screen and virtual DOM is copy of it. The main difference is that when you make changes in any part of real DOM, It re-renders the whole DOM at once and that affects efficiency of your server loading cause it has to reload the whole page as browser can only read JS, Html/CSS.

But the main difference is that every time, with each change, the virtual DOM gets updated instead of the actual DOM. For example, the real and virtual DOM is represented as a tree structure. Every element in the tree is a node. A node is added to the tree when a new item is added to the application UI.

The real DOM can directly update HTML. The virtual DOM cannot directly update HTML. The virtual DOM updates the JSX if the element updates

**6. What are the lifecycle hooks of React?**

In React, lifecycle hooks (also known as lifecycle methods) are methods that allow you to perform actions at different stages of a component's lifecycle.In older versions of React, there were lifecycle methods like componentDidMount, componentDidUpdate, and componentWillUnmount. With the introduction of React Hooks, you can achieve similar functionality with hooks like useEffect.

**7. How react is different from angular?**

React is a JavaScript library, whereas Angular is a front-end framework. React uses one-way data binding and virtual DOM, whereas Angular uses two-way data binding and real DOM. Moreover, React is faster than Angular as it has a smaller bundle size.

**8. Explain redux?**

Redux is an open-source JavaScript library used to manage application state. React uses Redux for building the user interface.

**9. What is a fragment in react?**

​React Fragment is a feature in React that allows you to return multiple elements from a React component by allowing you to group a list of children without adding extra nodes to the DOM

**10. What is setState ()?**

To change the state of a function component, you use the useState () hook.

**11. What is useState ()?**

useState is React Hook that allows you to add state to a functional component. It returns an array with two values: the current state and a function to update it. The Hook takes an initial state value as an argument and returns an updated state value whenever the setter function is called.

**12. What is useParams ()?**

The useParams () hook is a React Router hook that allows you to access the parameters of the current URL. This can be useful if you want to dynamically render content based on the URL parameters

**13. What is useDefault ()?**

The useDefault hook is useful for managing state in functional components with default values. The hook then checks if the “state” is undefined or null.

**14. What is the use of render() in React?**

The purpose of the function is to display the specified HTML code inside the specified HTML element. In the render() method, we can read props and state and return our JSX code to the root component of our app.

**15. What’s use effect?**

The useEffect Hook allows you to perform side effec­­­­ts in your components. Some examples of side effects are: fetching data, directly updating the DOM, and timers. useEffect accepts two arguments. The second argument is optional

**16. What is react router?**

React Router is a JavaScript framework that lets us handle client and server-side routing in React applications. It enables the creation of single-page web or mobile apps that allow navigating without refreshing the page.

**17. Difference between functional components and class components?**

A functional component is just a plain JavaScript pure function that accepts props as an argument and returns a React element(JSX). A class component requires you to extend from React. Component and create a render function that returns a React element. There is no render method used in functional components

**18. Difference between statefull and stateless component?**

A stateless component renders output which depends upon props value, but a stateful component render depends upon the value of the state. A functional component is always a stateless component, but the class component can be stateless or stateful

**19. What are error boundaries in React**

Error boundaries in React are a crucial aspect of error handling in React applications. They are React components that catch JavaScript errors anywhere in their child component tree, log those errors, and display a fallback UI instead of the component tree that crashed

**20. How do you style React components?**

There are about eight different ways to styling React Js components,

Inline CSS.

Normal CSS.

CSS in JS.

Styled Components.

CSS module.

Sass & SCSS.

Less.

Stylable

**21. Why do React Hooks make use of refs?**

Refs are a function provided by React to access the DOM element and the React element that you might have created on your own. They are used in cases where we want to change the value of a child component, without making use of props and all

**22. What are the limitations of React?**

- It's a Library, Not a Framework. Like other Javascript libraries, React contains pre-written code.

- It Uses JSX. React uses JSX, a syntax extension to JavaScript.

- Does Not Support SEO. React, by design, was not built with SEO in mind

- Lack of Updated Documentation

- Fast Development Speed.

**23. What are stateless components?**

Stateless components are those components which don't have any state at all, which means you can't use this. setState inside these components. It is like a normal function with no render method. It has no lifecycle, so it is not possible to use lifecycle methods such as componentDidMount and other hooks.

**24. What are stateful components?**

In React, a stateful component is a component that holds some state. Stateless components, by contrast, have no state. Note that both types of components can use props. In the example, there are two React components. The Store component is stateful and the Week component is stateless.

**25. What is the use of react-dom package?**

ReactDOM is used to render components and elements on the web. It is a part of the React library used to create user interfaces and dynamic web applications, as well as reusable and composable components that can be used in different applications.

**26. What is flux?**

Flux is a pattern for managing how data flows through a React application. As we've seen, the preferred method of working with React components is through passing data from one parent component to it's children components. The Flux pattern makes this model the default method for handling data.

**27. What is Redux Thunk?**

Thunk is a logical concept in programming where you deal with a function that is primarily used to delay the calculation or evaluation of any operation. Redux Thunk acts as a middleware that will return you a function instead of an object while calling through the action creators.

**28. What is the difference between try catch block and error boundaries?**

try catch block works with imperative code whereas error boundaries are meant for declarative code to render on the screen. So if an error occurs in a componentDidUpdate method caused by a setState somewhere deep in the tree, it will still correctly propagate to the closest error boundary.

**29. How to add Bootstrap to a react application?**

The best way to import React Bootstrap library to your project is using npm package, which can be installed using the npm command. Execute the below command to install the React Bootstrap to your project: npm install react-bootstrap bootstrap@5.1.3

**30. Can you list down top websites or applications using react as front end framework**

- Facebook

- Uber

- Instagram

- WhatsApp

- Airbnb

- Dropbox

- Netflix

- PayPal