Module-3 & 4

Getting Started React Js with JSX & Components

Task-3

B1 What is JSX?

Ans:- JSX is a React extension to the JavaScript language syntax which provides a way to structure component rendering using syntax familiar to many developers. It is similar in appearance to HTML

B2 What is React.createClass?

React. createClass **allows you to generate component "classes."** Under the hood, your component class is using a bespoke class system implemented by React. With ES6, React allows you to implement component classes that use ES6 JavaScript classes.

B3 How React works? How does Virtual-DOM work in React?

**When we render an application user interface, React creates a virtual DOM tree representing that UI and keeps it in memory**. On the next update — in other words, when the data that renders the app changes — React will automatically create a new virtual DOM tree for the update.

B4 What is ReactDOM and what is the difference betweenReactDOM and react?

ReactDOM is **a package that provides DOM-specific methods that can be used at the top level of a web app to enable an efficient way of managing DOM elements of the web page**. ReactDOM provides the developers with an API containing the following methods and a few more. render() findDOMNode()

The react package contains React.createElement(), React.Component, React.Children, and other helpers related to elements and component classes. You can think of these as the isomorphic or universal helpers that you need to build components. The react-dom package contains ReactDOM.render(), and in react-dom/server we have *server-side rendering* support with ReactDOMServer.renderToString() and ReactDOMServer.renderToStaticMarkup().

B5 What are the differences between a class component and a functional component?

[**Functional Components:**](https://www.geeksforgeeks.org/reactjs-functional-components/) Functional components are some of the more common components that will come across while working in React. These are simply JavaScript functions. We can create a functional component to React by writing a JavaScript function.

[**Class Component:**](https://www.geeksforgeeks.org/reactjs-class-based-components/) This is the bread and butter of most modern web apps built in ReactJS. These components are simple classes (made up of multiple functions that add functionality to the application).

B6 What is the difference between state and props?

## State

The state is an updatable structure that is used to contain data or information about the component and can change over time. The change in state can happen as a response to user action or system event. It is the heart of the react component which determines the behavior of the component and how it will render. A state must be kept as simple as possible. It represents the component's local state or information. It can only be accessed or modified inside the component or by the component directly.

## Props

Props are read-only components. It is an object which stores the value of attributes of a tag and works similarly to the HTML attributes. It allows passing data from one component to another components. It is similar to function arguments and can be passed to the component the same way as arguments passed in a function. Props are immutable so we cannot modify the props from inside the component.

B7 What are controlled components?

In React, Controlled Components are **those in which the form's data is handled by the component's state**. It takes its current value through props and makes changes through callbacks like onClick,onChange, etc. A parent component manages its own state and passes the new values as props to the controlled component.

B8 What is a higher-order component?

A higher-order component (HOC) is an advanced technique in React for reusing component logic. HOCs are not part of the React API, per se. They are a pattern that emerges from React's compositional nature. Concretely, **a higher-order component is a function that takes a component and returns a new component**.

B9 What is create-react-app?

Create React App is **a comfortable environment for learning React, and is the best way to start building a new single-page application in React**. It sets up your development environment so that you can use the latest JavaScript features, provides a nice developer experience, and optimizes your app for production.

I1 Compare and contrast creating React Components in ES5 and ES2015 (also known as ES6). What are the advantages and disadvantages of using one or the other? Include notes about default: props, initial state, PropTypes, and DisplayName.

I2 Compare and contrast the various React Component lifecycle methods. How might understanding these help build certain interfaces/features?

I3 Compare and contrast incorporating mixins and enforcing modularity in React Components. ( extend, createClass and mixins, HOCs) Why would you use these techniques, and what are the drawbacks of each?

I4 What is the significance of keys in React?

A “key” is a special string attribute you need to include when creating lists of elements in React. Keys are used in React **to identify which items in the list are changed, updated, or deleted**. In other words, we can say that keys are used to give an identity to the elements in the lists.

I5 What is the significance of refs in React?

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**.

I6 Compare and contrast the significance of each, and when would you use one or the other? In addition, how might you use any data layer with React (like Backbone, Ember, or Redux)? What are the systemic requirements for doing so?

I7 What are pure functional Components?

What is a pure component in React? Based on the concept of purity in functional programming paradigms, a function is said to be pure if it meets the following two conditions: **Its return value is only determined by its input values**. Its return value is always the same for the same input values.

I8 How might React handle or restrict Props to certain types, or require specific Props to exist?

**React allows us to pass data from parent components to child components with the help of props**. If we want to check the type of props we can do so with the help of PropTypes. Proptypes help us to perform runtime type checks on the props and if the check fails we get a warning on the browser's console.

I9 Create menu using array?

I10 Using Events is React js?

An event is an action that could be triggered as a result of the user action or system-generated event. For example, a mouse click, loading of a web page, pressing a key, window resizes, and other interactions are called events.

React has its own event-handling system which is very similar to handling events on DOM elements. The react event handling system is known as Synthetic Events. The synthetic event is a cross-browser wrapper of the browser's native event.

A1 The TextInput component renders an input element in the DOM and accepts a ref that is forwarded to that input element. Finish the FocusableInput component: The component should accept a focused prop. When the focused prop is changed from false to true, and the input is not focused, it should receive the focus. If mounting the focused prop is true, the input should receive the focus.

A2 Write a TodoList component that expects an items prop, and a list of objects, each with text and done properties.

A3 TodoList also accepts an onItemClick function prop, which should be called when a user clicks an item in the list if the item is not marked as done. Otherwise, the on-item click should not be called and the click event itself should not be propagated further. The function should be called the item object from the items list as the first parameter and the event as the second parameter.

A4 Create a Web page and set Routing on Each web page in React Js.

A4 A5 Create a signup Form in react Js and Set Form Validation. Create a Contact Form in React Js and Set Form validation A6 A7 Create a Navigation and Apply the Routing On the web page in ReactJs. Create a Register Page in React Js and Provide Form validation in all Fields.

A8

A9 Create a Login Form in React Js and Provide Form Validation? Creta a Table In React Js and Insert data in Table?