

React Course

1. Introduction to React

- **What is React?**
 - Introduction to React: A component-based library for building user interfaces.
 - Understanding the component-based architecture and the importance of reusable components.
- **Installing React using Create React App**
 - Setup of a development environment with create-react-app.
 - Folder structure and basic setup.

2. JSX Syntax and Databinding

- **What is JSX?**
 - Writing HTML inside JavaScript (React's syntax extension).
- **Embedding expressions, attributes, and class names in JSX**
 - Expressions in JSX: {} syntax for embedding JavaScript.
 - Using className for class attributes in JSX.

3. Components

- **Functional Components vs. Class Components**
 - Key differences and when to use each type.
- **Props and State in React**
 - What are props? Passing data to components.
 - State in React: How to use state within components (useState hook).
- **Component Life Cycle**
 - Understanding lifecycle methods in class components (e.g., componentDidMount).
 - Using useEffect hook in functional components for side effects.
- **Component API and Props Validation**
 - Defining custom props and validation with PropTypes.

4. Event Handling in React

- **Handling user interactions:**

- Handling events like onClick, onChange, and onSubmit.
- Using functions to handle event-driven logic.

5. State Management

- **State and Lifecycle Methods**
 - Deep dive into state management and how to update state in functional components using useState.
- **Context API**
 - Managing global state without prop drilling using React Context API.
 - Passing data to components without manually passing props.

6. React Router

- **Setting up React Router for navigation**
 - Installing and configuring react-router-dom for routing.
- **Creating Routes and Navigation Links**
 - Defining routes and linking components via the <Route> and <Link> components.

7. React Forms and User Input

- **Controlled Components and Uncontrolled Components**
 - Managing form state using React's state management.
- **Form Submission, Validation, and Reset**
 - Handling form submission, validation, and resetting form fields.

8. React Hooks

- **Using Built-in Hooks**
 - useState, useEffect, useContext, useMemo, useReducer, useRef.
- **Custom Hooks**
 - Creating reusable logic using custom hooks.
- **Understanding useReducer and useContext**
 - Handling more complex state management with useReducer and global state using useContext.

9. Advanced React Concepts

- **Error Boundaries**
 - Handling errors in React applications
- **Higher-Order Components (HOCs)**
 - Understanding HOCs for reusing component logic.
- **Virtual DOM**
 - Explanation of how React's virtual DOM works and improves performance.

10. State Management Libraries

- **Redux**
 - Introduction to Redux (Actions, Reducers, and Store).
 - Integrating Redux with React to manage global state efficiently.
- **State Management with Context API**
 - Understanding when to use Context API vs. Redux for state management.

11. Integrating GraphQL with React

- **What is GraphQL?**
 - Introduction to GraphQL and how it compares to REST APIs.

12. Working with HTTP Requests in React

- **Making HTTP Requests**
 - Sending GET and POST requests to external APIs.
 - Adjusting request headers, handling responses, and using Axios or Fetch API.

13. Bootstrap for Styling

- **Basic Setup of Bootstrap**
 - Integrating Bootstrap with React for responsive UI design.

14. Authentication in React Apps

- **Introduction to JWT**
 - How JWT (JSON Web Tokens) works for user authentication.