**What is React ?**

React is a front-end and open-source **JavaScript library which is useful in developing user interfaces** specifically for applications with a single page .

**Different between Library & Framework ?**

**Library**: A library is like a toolset. You pick and choose what tools (functions or methods) you need and control how to use them. **You are in charge** of your program's flow, and the library just helps you with specific tasks.

**Framework**: A framework is like a pre-built structure or template. It provides a foundation and controls the flow of your program. **You follow its rules and fill in the gaps** to make your application.

**Control**: With a library, you are in control. With a framework, the framework is in control.

**What is Virtual DOM?**

The Virtual DOM is like a lightweight copy of the real DOM. It helps React update the webpage faster by figuring out what has changed without touching the actual DOM directly.

**What is Reconciliation?**

Reconciliation is the process of comparing the Virtual DOM with the real DOM to find differences. Only the changes are applied to the real DOM, making updates more efficient.

**What is the Diffing Algorithm?**

The Diffing Algorithm is a way React quickly figures out the least number of changes needed to update the real DOM when something changes in the app.

**What is Hooks ?**

A React Hook is a **JavaScript function** that allows developers to use React features without writing a class component .

**What Is Ref ?**

Refs is an attribute or property that provides a way to directly access or **interact with DOM element or react component.**

* In CBC we should use the method React.createRef() & It will return ref object with key current & value as null.
* If FBC to create a ref object we can use HOOK useRef() & it will return obj with key current and value undefined.

**What are Keys in React?**

Keys in React are special attributes used to identify the items in a list.

**What is Side Effect ?**

In React, a side effect is an operation that occurs outside of a React component and interacts with the outside world . Side effects can include Data Fetching , Direct DOM Manipulations, Timers , Etc.

**What is Memo ?**

UseMemo is a React hook . It is used to optimize the performance by Memoization the result of the slow function or any costly operations it will take two arguments first is ( Call Back Function ) and Second ( Dependency List ) .

UseMemo() It will be Return Memoized value.

**What is Redux ?**

Redux is a state Management Library for JS Application.

It is Commonly used in Large Dynamic Application such as E-commerce website.

Redux Can be Used With other JS Libraries such as React and can Also be used with other JS Frameworks or Even Vanilla JS .

**OR**

Redux is a popular state Management librabrary for js application.

It is used to manage the global state.

Redux has Store which holds the state or data ,which can be updated by dispatching actions ,that are handled by Reducer.

We have one Package tha is React-Redux package used to esablished the connection between React and Redux

**useSelector**

It gets data from the store so your component can use it.

**Routes**

It holds all the possible pages (or routes) of your app.

**Route**

It defines one specific page or path in your app.

**store**

It is a place where all the app's data (state) is kept.

**slice**

It is a small part of the store that handles one kind of data, like users or products.

**Context API**

It shares data across components without passing props everywhere.

**React Router DOM**

It allows navigation between pages in a React app.

**Why use Redux Toolkit with React-Redux?**

Redux Toolkit makes using Redux simpler, faster, and less code-heavy.

**createRoot method**

It starts your React app in the browser.

**props.children**

It is a way to pass other components inside a component.

**Dynamic Routing**

It changes the page based on data (like user IDs) in the URL.

**UseDispathch**

Dispatch() It will take one argument action and we should call the action by passing the

payload as an argument.

[**https://youtube.com/shorts/yv6UI2ywKdw?si=-nu9VAIK4uWvuMZl**](https://youtube.com/shorts/yv6UI2ywKdw?si=-nu9VAIK4uWvuMZl)