**WEEK 6**

**4.ReactJS-HOL**

**OBJECTIVES:**

**1. Explain the Need and Benefits of Component Lifecycle**

The **component lifecycle** in React defines the different stages a component goes through — from creation (mounting), updates, to removal (unmounting).

**Need for Lifecycle:**

* To perform specific actions at each stage (like fetching data, cleanup, etc.)
* To control how the component behaves over time

**Benefits:**

* Better performance through optimized rendering
* Clean resource management (e.g., clear timers, unsubscribing)
* Predictable and maintainable UI behavior
* Fine control over component behavior at each stage

**2. Identify Various Lifecycle Hook Methods**

React provides **lifecycle methods** mainly in **class components**, categorized into 4 phases:

**🔹 1. Mounting Phase (Component is created and inserted into DOM):**

* constructor()
* static getDerivedStateFromProps()
* render()
* componentDidMount()

**🔹 2. Updating Phase (Component is re-rendered due to state/props change):**

* static getDerivedStateFromProps()
* shouldComponentUpdate()
* render()
* getSnapshotBeforeUpdate()
* componentDidUpdate()

**🔹 3. Unmounting Phase (Component is removed from DOM):**

* componentWillUnmount()

**🔹 4. Error Handling Phase:**

* static getDerivedStateFromError()
* componentDidCatch()

**3. List the Sequence of Steps in Rendering a Component**

**🔸 Mounting Sequence (Initial render):**

1. constructor()
2. static getDerivedStateFromProps()
3. render()
4. componentDidMount()

**🔸 Updating Sequence (on state/props change):**

1. static getDerivedStateFromProps()
2. shouldComponentUpdate()
3. render()
4. getSnapshotBeforeUpdate()
5. componentDidUpdate()

**🔸 Unmounting Sequence:**

1. componentWillUnmount()