**Objectives**

**1. Explain Various Ways of Conditional Rendering**

Conditional rendering is how React decides **what to show based on state or props**.

**Techniques:**

1. **if-else statement:**

if (isLoggedIn) {

return <UserPage />;

} else {

return <LoginPage />;

}

1. **Ternary operator:**

{isAdmin ? <AdminPanel /> : <UserPanel />}

1. **Logical AND (&&):**

{hasAccess && <SecretComponent />}

1. **Early return:**

if (!showComponent) return null;

**2. Explain How to Render Multiple Components**

To render multiple components inside a return:

**Options:**

* **Fragments (<> </>)**:

<>

<Header />

<Footer />

</>

* **Wrapper <div>**:

<div>

<ComponentA />

<ComponentB />

</div>

**3. Define List Component**

A **List component** displays multiple similar items (like blog posts or books) from an array using .map().

**Example:**

function BookList({ books }) {

return (

<ul>

{books.map(book => <li key={book.id}>{book.title}</li>)}

</ul>

);

}

**4. Explain About Keys in React Applications**

* **Keys** help React identify and track each item in a list during rendering.
* Must be **unique** and stable (use id, not array index unless unavoidable).

**Why important?**

Efficient **diffing and updating** during re-renders.

**Example:**

{items.map(item => <li key={item.id}>{item.name}</li>)}

**5. Explain How to Extract Components with Keys**

When mapping data and passing it to a child component, the key should be added to the **element being returned** from the .map().

**Example:**

function BlogPost({ title }) {

return <p>{title}</p>;

}

{posts.map(post => (

<BlogPost key={post.id} title={post.title} />

))}

key is not a prop — it's used internally by React.

**6. Explain React Map / map() Function**

* .map() is a **JavaScript array function** used in React to generate a list of elements/components.
* Ideal for **dynamic rendering** of repeating items.

**Example:**

const names = ["Angular", "React", "Vue"];

return (

<ul>

{names.map((name, index) => <li key={index}>{name}</li>)}

</ul>

);

