# 📘 React: Conditional & List Rendering

### 🔹 Various Ways of Conditional Rendering

React supports several patterns for conditional UI logic:

#### 1. if ****Statements****

if (isOnline) {

return <OnlineIndicator />;

} else {

return <OfflineNotice />;

}

#### 2. ****Ternary Operator****

{isLoggedIn ? <LogoutButton /> : <LoginButton />}

#### 3. ****Logical**** && ****Operator****

{hasAccess && <SecretPanel />}

#### 4. ****Switch Case (inside logic block)****

switch (role) {

case 'admin': return <AdminPanel />;

case 'user': return <UserDashboard />;

default: return <GuestView />;

}

### 🔹 Rendering Multiple Components

You can render multiple elements:

#### ✅ Using a Fragment

return (

<>

<Header />

<MainContent />

<Footer />

</>

);

#### ✅ Using Array of Elements

return [

<Nav key="nav" />,

<Sidebar key="side" />,

<Main key="main" />

];

### 🔹 Define List Component

A **list component** iterates over an array and returns JSX for each item:

function TodoList({ tasks }) {

return (

<ul>

{tasks.map((task, index) => (

<li key={index}>{task}</li>

))}

</ul>

);

}

### 🔹 About Keys in React Applications

* **Keys** help React identify **which items changed, added, or removed**.
* They must be **unique and stable** across renders.
* Used mainly inside lists or dynamically generated components.

<ul>

{items.map(item => (

<li key={item.id}>{item.name}</li>

))}

</ul>

### 🔹 Extracting Components with Keys

You can extract items into reusable child components and still use key in the parent:

function ListItem({ value }) {

return <li>{value}</li>;

}

function NumberList({ numbers }) {

return (

<ul>

{numbers.map(num => (

<ListItem key={num.toString()} value={num} />

))}

</ul>

);

}

✅ Keys go where the elements are created — inside the parent map() function.

### 🔹 React map() Function

* map() is a native JS array method used to transform and return new arrays.
* React uses map() to dynamically render components from data.

const names = ["Sahil", "Sky", "Nova"];

const nameList = names.map(name => (

<li key={name}>{name}</li>

));

return <ul>{nameList}</ul>;