**13. ReactJS-HOL**

**Objectives:**

**1. Explain various ways of conditional rendering**  
React supports several ways to conditionally render components or elements:

* **If/Else Statements**
* **Ternary Operators**
* **Logical && Operator**
* **Element Variables**
* **IIFE (Immediately Invoked Function Expression)**

**Example (ternary):**

{isLoggedIn ? <Logout /> : <Login />}

**2. Explain how to render multiple components**  
React allows rendering multiple components inside a parent <div>, <> (Fragment), or using arrays.

**Example:**

function App() {

return (

<div>

<Header />

<Main />

<Footer />

</div>

);

}

**3. Define list component**  
A list component is a component that dynamically renders a list of items (like books, blogs, or courses) using the .map() method.

**Example:**

const BookList = ({ books }) => (

<ul>

{books.map(book => (

<li key={book.id}>{book.bname} - {book.price}</li>

))}

</ul>

);

**4. Explain about keys in React applications**  
Keys are unique identifiers used by React to track which items have changed, been added, or removed. They help in optimizing rendering.

**Best Practice:** Use unique and stable values like IDs as keys.

<ul>

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

</ul>

**5. Explain how to extract components with keys**  
When rendering a list, each item should be passed to a reusable child component with a key prop.

**Example:**

function BookItem({ book }) {

return <li>{book.bname} - {book.price}</li>;

}

function BookList({ books }) {

return (

<ul>

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

</ul>

);

}

**6. Explain React Map, map() function**  
The map() function in React is used to iterate over arrays and render a new JSX element for each item.

**Example:**

const items = ['a', 'b', 'c'];

const list = items.map(item => <li>{item}</li>);

**Hands-On exercise:**

**Code:  
App.js**import React from 'react';

import './App.css';

const books = [

{ id: 101, bname: 'Master React', price: 670 },

{ id: 102, bname: 'Deep Dive into Angular 11', price: 800 },

{ id: 103, bname: 'Mongo Essentials', price: 450 }

];

function BookDetails({ books }) {

return (

<div className="st2">

<h1>Book Details</h1>

{books.map(book => (

<div key={book.id}>

<h3>{book.bname}</h3>

<h4>{book.price}</h4>

</div>

))}

</div>

);

}

function BlogDetails() {

return (

<div className="v1">

<h1>Blog Details</h1>

<h3>React Learning</h3>

<strong>Stephen Biz</strong>

<p>Welcome to learning React!</p>

<h3>Installation</h3>

<strong>Schwezdenier</strong>

<p>You can install React from npm.</p>

</div>

);

}

function CourseDetails() {

return (

<div className="mystyle1">

<h1>Course Details</h1>

<h3>Angular</h3>

<p>4/5/2021</p>

<h3>React</h3>

<p>6/3/20201</p>

</div>

);

}

function App() {

const showAllDetails = true;

return (

<div className="main">

{showAllDetails ? (

<>

<CourseDetails />

<BookDetails books={books} />

<BlogDetails />

</>

) : (

<h2>No Details Available</h2>

)}

</div>

);

}

export default App;

**App.css**.main {

display: flex;

justify-content: space-around;

margin-top: 40px;

font-family: Arial, sans-serif;

}

.st2, .v1, .mystyle1 {

border-left: 4px solid green;

padding: 10px 20px;

}

.st2 h1, .v1 h1, .mystyle1 h1 {

font-size: 22px;

margin-bottom: 15px;

font-weight: bold;

}  
**index.js**import React from 'react';

import ReactDOM from 'react-dom/client';

import './index.css';

import App from './App';

const root = ReactDOM.createRoot(document.getElementById('root'));

root.render(

<React.StrictMode>

<App />

</React.StrictMode>

); **Output:**  


