

ReactJS Lab Module (2 Hours)

Objective:

Introduce students to the basics of ReactJS by creating a simple web app with components, props, state, and event handling.

Lab Breakdown

1. Introduction (15 mins)

- What is ReactJS?
- Features: Components, Virtual DOM, JSX, State, Props.
- Install React using create-react-app or Vite.

```
npx create-react-app myapp
```

```
cd myapp
```

```
npm start
```

2. Component Creation (20 mins)

Task: Create a functional component called Welcome that displays a greeting.

```
function Welcome(props) {  
  return <h2>Hello, {props.name}!</h2>;  
}
```

```
export default Welcome;
```

Use it in App.js:

```
import Welcome from "./Welcome";
```

```
function App() {  
  return (  
    <div>  
      <Welcome name="Alice" />  
      <Welcome name="Bob" />  
    </div>  
  );  
}
```

```
    </div>
  );
}
```

3. State & Events (30 mins)

Task: Create a counter app.

```
import { useState } from "react";
```

```
function Counter() {
  const [count, setCount] = useState(0);

  return (
    <div>
      <h2>Count: {count}</h2>
      <button onClick={() => setCount(count + 1)}>Increment</button>
      <button onClick={() => setCount(count - 1)}>Decrement</button>
    </div>
  );
}

export default Counter;

Add <Counter /> inside App.js.
```

4. Simple Form Handling (30 mins)

Task: Create a form where students enter their name, and it displays a welcome message.

```
import { useState } from "react";
```

```
function NameForm() {
  const [name, setName] = useState("");
```

```
return (  
  <div>  
    <input  
      type="text"  
      placeholder="Enter your name"  
      onChange={(e) => setName(e.target.value)}  
    />  
    <h3>Welcome, {name}</h3>  
  </div>  
);  
}  
  
export default NameForm;  
Add <NameForm /> inside App.js.
```

5. Wrap-up (15 mins)

- Recap: Components, Props, State, Events.
 - Students can extend app with:
 - Styling (CSS in React)
 - Adding more input fields
 - Displaying a list (using `.map()`)
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By the end of the 2-hour lab

1. A working React project.
2. A greeting component with **props**.
3. A **counter app** using **state & events**.
4. A **form app** for user input.