

Training Day 15 Report

Date: 16 July 2025

S.T.E.P – Science & Technology Entrepreneurs' Park, GNDEC, Ludhiana

Topic Covered: Topic Covered: Learning Deep About React

Introduction

On Day 15, we took a deeper dive into **React.js**, exploring its core concepts beyond just setup. React is a JavaScript library for building dynamic, component-based, and scalable user interfaces, especially useful in single-page applications (SPAs).

Key Concepts Explored

1. Components in React

- React applications are built using components.
- Components can be **Functional** or **Class-based** (though functional is preferred with Hooks).
- Reusability: Components can be reused across the app.

Example Functional Component:

- `function Welcome() {`
- `return <h1>Welcome to React</h1>;`
- `}`

2. Props (Properties)

- Props are used to pass data from parent to child component.
- They are read-only.

Example:

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

3. State in React

- State holds data inside a component.
- Managed using `useState` hook in functional components.

Example:

- `import { useState } from 'react';`
- `function Counter() {`
- `const [count, setCount] = useState(0);`
-
- `return (`
- `<div>`
- `<p>Count: {count}</p>`
- `<button onClick={() => setCount(count + 1)}>Increment</button>`
- `</div>`
- `);`
- `}`

4. Event Handling

- React uses camelCase syntax for event names.
- You pass a function as the event handler.

Example:

- `<button onClick={handleClick}>Click Me</button>`

5. Conditional Rendering

- Render content based on condition using if, ternary (`? :`), or `&&`.

Example:

- `{isLoggedIn ? <Dashboard /> : <Login />}`

5. Hooks Explored

- `useState()` – Manage local component state.
- `useEffect()` – Perform side effects like API calls, timers, etc.

Example of useEffect:

- `useEffect(() => {`
- `console.log("Component Mounted");`
- `}, []);`

Activities Performed

- Revised JSX syntax and differences from HTML
- Created multiple functional components
- Practiced passing props and using state
- Implemented event handling with `onClick`, `onChange`
- Built a small project: A Counter app using `useState`
- Explored React Developer Tools for debugging

Task of the Day

Create a small React project with:

- A header component showing your name and course
- A stateful component (Counter or Todo)
- Use of props to pass data to components
- Conditional rendering for dynamic content