

Industrial Training Daily Diary

MERN Stack Training

Company: Sensation Software Solutions

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Training Duration: 6 Months

Day: 14

Day 14 – Advanced React Hooks (useContext, useReducer, useRef)

Objective of the Day

The objective of Day 14 was to understand **advanced React hooks** and how they help in managing global state, complex logic, and direct DOM access. These hooks are very important for building large-scale React applications.

Introduction to Advanced Hooks

The trainer explained that while **useState** and **useEffect** handle basic requirements, advanced hooks like **useContext**, **useReducer**, and **useRef** are used for better state management and performance optimization in real-world projects.

useContext Hook

The **useContext hook** was introduced to avoid the problem of **props drilling**. It allows data to be shared globally between components without passing props at every level.

Key points learned:

- Creating a Context
- Providing data using Context Provider
- Consuming data using useContext
- Benefits of centralized data handling

We discussed real-life examples such as theme management and user authentication data.

useReducer Hook

The trainer explained that **useReducer** is an alternative to `useState` when dealing with complex state logic.

Topics covered:

- Reducer function
- State and action
- Dispatching actions
- Difference between `useState` and `useReducer`

`useReducer` was explained using examples similar to Redux-style state management.

useRef Hook

The **useRef hook** was explained as a way to:

- Access DOM elements directly
- Store mutable values without re-rendering

Practical use cases included focusing input fields and storing previous values.

Practical Work Done

During the lab session, we:

- Created a global context for user data
- Managed component state using `useReducer`
- Used `useRef` for input focus handling
- Built small demo components for each hook

Hands-on practice strengthened our understanding.

Weekly Task – Week 2 React Practice

As part of the weekly task, we were assigned to:

- Create a small React application
- Use functional components only
- Implement `useState`, `useEffect`, and `useContext`
- Build a simple counter and form component

- Push the code and diary updates to GitHub Pages

This task helped us revise and apply all React concepts learned so far.

Importance in MERN Stack Development

Advanced hooks are widely used in professional React projects to manage shared data, optimize performance, and reduce code complexity.

Conclusion of Day 14

Day 14 enhanced my understanding of advanced React hooks and their practical usage. These concepts will be very helpful while building complex MERN stack applications.

Outcome of the Day:

- Understanding of useContext, useReducer, and useRef
- Ability to manage complex state logic
- Practical experience with advanced hooks
- Completion of Week 2 task