

# Industrial Training Daily Diary

## MERN Stack Training

**Company:** Sensation Software Solutions

**Student Name:** Tajinder Kaur

**Training Duration:** 6 Months (104 Days)

**Day:** 14

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### 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.

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#### 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.

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#### 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.

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## **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.

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## **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.

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## **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.

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## **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.

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## **Importance in MERN Stack Development**

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

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## **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.

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### **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