Module 2: Advanced Frontend Development (React and Tailwind CSS)

Prerequisite

- Completion of Module 1 (HTML, CSS, JavaScript).
- Personal Computer with good specifications.
- Proficiency in English.

Course Description

This module introduces React, a popular frontend framework. You will learn how to build modern, responsive web applications using React and Tailwind CSS for dynamic styling.

Learning Outcomes

- Develop a responsive frontend using React and Tailwind CSS.
- Implement navigation, state management, and component reusability.
- Use modern React features like Hooks and Context API.
- Develop a fully functional frontend application.

Course Outline

Week 1: Introduction to React and Frontend Development

- Setting up a React development environment.
- Creating your first React app and understanding JSX.

Week 2: Handling State and Events in React

- Introduction to props, state, and event handling in React components.

Week 3: Advanced React Features

- React Router, forms, and controlled components.

Week 4: Context API and State Management

- Managing global state with Context API.
- Introduction to Material-UI for styling.

Week 5: Introduction to Tailwind CSS

- Tailwind CSS basics and responsive design.

Week 6: Styling with Tailwind CSS

- Building layouts and components with Tailwind.

Week 7: Integrating Tailwind CSS with React

- Dynamic styling and responsive design with React and Tailwind.

Week 8: Advanced React: Hooks and Redux

- Managing state with Redux and React Hooks (useState, useEffect).

Week 9: Asynchronous Operations in React

- Fetching data using async functions and APIs.

Week 10: Advanced Redux and State Management

- Implementing Redux for global state and managing API requests.

Week 11: Project Development

- Building a dynamic React web application.

Week 12: Finalization and Assessment

- Project presentations and course wrap-up.

Grading Criteria

- Quizzes: 20%
- Class Participation: 15%
- Projects: 25%
- Final Projects: 40%