Module 2: Frontend Engineering with React

Duration: 4 Weeks
Study Mode: Online — 4 hours/day (Flexible Schedule)

Objective:
Empower learners with modern frontend engineering skills by building fully responsive, interactive interfaces using **React.js**, **TailwindCSS**, and **React Router**, while mastering component design and state management.

Target Audience

- Learners who have completed **Module 1**

- Individuals with basic HTML, CSS, and JavaScript experience

- Developers looking to upgrade to modern frontend frameworks

- University students and aspiring UI engineers

Weekly Breakdown

Week 1: React Fundamentals & JSX

Topics:

- What is React? Why React? SPA vs MPA

- Creating a React app using Vite or Create React App

- Introduction to JSX syntax

- Components — functional vs class-based (focus on functional)

- Props and component reusability

- Intro to TailwindCSS in React: installing and configuring

- Styling with Tailwind utility classes inside React

Practical Tasks:

- Build reusable components: Button, Card, Navbar

- Recreate UI layouts using Tailwind inside React

Week 2: State Management & Events

Topics:

- `useState` Hook: managing local state

- Event handling (onClick, onChange, form submissions)

- Conditional rendering and dynamic classNames

- Forms in React: controlled components

- Intro to `useEffect`: lifecycle basics

- Project structure and folder organization in React

Practical Tasks:

- Create a working form with validation

- Create an interactive counter, tabs, or toggle features

- Build a feedback form with dynamic success/error UI

Week 3: Routing, UI Logic, and API Basics

Topics:

- React Router: setting up routes and navigation

- Nested routes and route parameters

- Building a multi-page app (e.g., Blog, Services, Contact)

- Fetching data with `fetch()` and `axios`

- Basic API calls and useEffect

- Displaying data dynamically in components (lists, tables)

Practical Tasks:

- Create a multi-page site using React Router

- Connect a mock or public API and display real-time data

- Implement basic search/filter UI for fetched data

Week 4: Project Development & Best Practices

Topics:

- Component reusability and modular design

- Managing larger component trees and props drilling

- Introduction to `Context API` for global state (optional)

- File structuring for scalability

- Code formatting, reusable hooks, and naming conventions

- Deploying React apps to Vercel / Netlify

Final Project:

- Build a **Responsive Dashboard or Portfolio Web App** using:

  - React.js

  - TailwindCSS

  - React Router

  - Form + State Logic

- Host the project online and submit for review

Learning Outcomes

By the end of Module 2, learners will:

- Understand component-based architecture using React

- Manage state and side effects in dynamic UIs

- Build scalable, multi-page web apps using React Router

- Style applications efficiently with TailwindCSS

- Integrate APIs and handle async data

- Deploy frontend applications to a live server

🏆 Certification

Upon successful completion, learners receive a:

- **Dovepeak Certificate in Frontend Engineering with React**

🎓 Graduate Opportunities

Graduates will:

- Be considered for UI Developer roles/internships at **Dovepeak Digital Solutions**

- Be eligible to proceed to **Module 3: Backend & Full-Stack Integration**

Intake Information

Next Intakes: July, August, September
Class Schedule: Monday to Friday, 4 hours/day
Flexible attendance, class recordings, and project support included