



MERN Stack Development Course

For [Amit Jatav](#)

Mission 1: Understand HTML Structure

Mission 1: Understand Front-End Development

- Revise:
 - Basic Structure: <!DOCTYPE html>, <html>, <head>, <body>.
 - Important Tags: Headings, Paragraphs, Lists, Links, Images.

Mission 2: Forms and Inputs

- Revise:
 - <form>, <input>, <textarea>, <button>, <select>.
 - name, placeholder, required, and other attributes.

Mission 3: Semantic HTML

- Revise:
 - Why Semantic Tags Matter: header, nav, section, article, footer.

Milestone 1 Complete

- Ability to build a clean, well-structured web page.
- Ready to move to styling!

Target 2 - Style and Layout Mastery with CSS

Mission 4: Core CSS Concepts

- Selectors, Properties, Values.
- Box Model: Margin, Padding, Border, Content.





Mission 5: Flexbox and Grid



- Flexbox: Row/Column Layouts, Centering Items.
- CSS Grid: Complex layouts made simple.



Mission 6: Responsive Design Basics



- Media Queries for Mobile Devices.
- Mobile-First Approach.



Milestone 2 Complete



- Ability to design mobile-responsive, beautiful websites.
- Now ready to add interactivity!



Target 3 – Dynamic Web Pages with JavaScript



Mission 7: JavaScript Core Foundations



- Variables (var, let, const).
- Data Types: String, Number, Boolean, Array, Object.
- Functions and Arrow Functions.



Mission 8: DOM Manipulation



- querySelector, getElementById, createElement, appendChild.
- Changing Text, Styles, Classes Dynamically.



Mission 9: Events Handling



- Add Events like click, submit, mouseover.
- Write interactive behavior for buttons, forms, modals.



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Mission 10: Local Storage Basics

- Revise:
 - Save and Retrieve Data using `localStorage.setItem()` and `getItem()`.



Milestone 3 Complete

- Ability to build interactive, real-world websites!
- Full readiness to start React.js → MERN stack journey.



Target 4 - React.js Frontend Development



Mission 11: Introduction to React & JSX

- What is React? Why React?
- Introduction to JSX (JavaScript XML)
- How Virtual DOM works
- Setting up a basic React App (using Vite or Create-React-App)
- Folder structure and first component



Mission 12: Components, Props, and State

- Functional vs Class Components
- Props: passing data between components
- State: managing local data inside a component
- Component Lifecycle Basics



Mission 13: Handling Events and Lists

- Handling user events (`onClick`, `onChange`)
- Rendering lists using `.map()`
- Keys and importance of unique keys in lists
- Conditional Rendering techniques (ternary, `&&` operator)



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Mission 14: Introduction to Hooks

- What are Hooks? Why Hooks?
- useState and useEffect Hook
- Small exercises building dynamic components
- Refactor Class Components to Functional Components using hooks



Milestone 4 – Mini Project 1

- To-Do List Application
- CRUD operations (Create, Read, Update, Delete) on the list
- Using LocalStorage to persist tasks
- Peer review or mentor feedback



Target 5 – Intermediate React & Routing



Mission 15: Advanced Hooks & Forms

- useRef, useContext introduction
- Controlled vs Uncontrolled Components
- Building forms: capturing input data
- Form validation basics (manual)



Mission 16: Routing with React Router

- Setting up React Router
- Defining routes and Route parameters
- Navigating with Link and useNavigate
- Dynamic Routing





Mission 17: API Integration

- Fetching data using Fetch or Axios
- Using useEffect for API calls
- Error Handling and Loading states
- Displaying API response data



Mission 18: Context API for State Management

- Creating a Context
- Providing and consuming context values
- Replacing Prop Drilling with Context
- Authentication context basics (Login Status)



Milestone 5 – Mini Project 2

- Blog Listing Website
- Fetch posts from fake API (e.g., JSONPlaceholder)
- Routing to individual post detail page
- Form to add a new post (dummy)



Target 6 – Backend Development with Node.js & Express.js



Mission 19: Introduction to Node.js & Express.js

- What is Node.js, NPM
- Creating first server with Node.js (without Express)
- Introduction to Express.js Framework
- Routing and Middleware basics





Mission 20: Building REST APIs

- Setting up Express Router
- Creating CRUD APIs (GET, POST, PUT, DELETE)
- Sending JSON responses
- Handling URL Encoded data & JSON data



Mission 21: Input Validation & Error Handling

- Learn:
- Manual Input Validation
- Basic error handling using try-catch
- Express Error Middleware



Target 7 – MongoDB Database Management



Mission 22: Introduction to MongoDB & Mongoose

- What is NoSQL Database?
- Difference between MongoDB and SQL
- Setting up MongoDB Atlas
- Connecting Node.js with MongoDB



Mission 23: Performing CRUD with MongoDB

- Introduction to Mongoose Models and Schemas
- Creating Documents
- Reading Documents
- Updating and Deleting Documents





Mission 24: Advanced Database Operations

- Learn:
 - Data Validation in Mongoose
 - Pagination basics
 - Relationships (Reference vs Embedded documents basics)



Milestone 6: Mini Project 3

- Simple Blog Backend API
- CRUD API for blog posts with MongoDB
- Use Postman to test API routes



Target 8 – Full MERN Stack Integration



Mission 25: Connecting Frontend with Backend

- Understanding CORS
- Axios/Fetch integration with backend
- Displaying backend data on frontend



Mission 26: Authentication with JWT

- Setting up user registration & login APIs
- Password hashing with bcryptjs
- JWT token generation
- Protecting private routes with middleware





Mission 27: Session Management

- Storing JWT in localStorage/sessionStorage
- Auto-redirecting after login/logout
- Protecting frontend routes based on auth



Final Milestone - Full Stack Project

- Full Stack Blog App
- User Authentication (Register/Login)
- Create, Edit, Delete posts (authenticated users only)
- List all posts (public)
- Mobile Responsive (optional)
- Deployment basics (optional, if time allows)





Congratulations !!!

You *SkyRouted*
your
MERN Stack Development skills

Secret : You are now a MERN Developer

