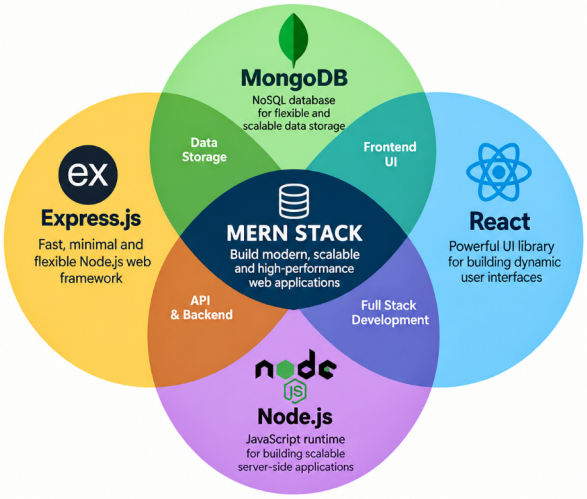
GENESIS
YOUR POTENTIAL. OUR PASSION



FULL STACK MERN DEVELOPER

Course Curriculum

Duration: 3 Months

Goal: Build and deploy production-ready full-stack applications using MongoDB, Express.js, React.js, and Node.js with advanced authentication, real-time APIs, and cloud deployment.

HTML5 (PRODUCTION)

- Document structure in production
- Forms with validation
- SEO tags, metadata, favicons
- Semantic layout for business
- Admin dashboard skeleton UI



CSS3 (REAL-TIME UI)

- Box model, Spacing, Typography
- Flexbox & Grid for dashboards
- Hover effects & Micro animations

- Responsive UI (Mobile/Desktop)
- Professional landing page design

BOOTSTRAP COMPONENTS

- Grid system for responsive layout
- Navbar, cards, modals, forms
- Admin dashboard layout creation
- Table UI for CRUD operations

JAVASCRIPT & ES6+



- DOM manipulation in dashboards
- Async/Await & Promises
- Template literals & Destructuring
- Modular JS & Fetch API

Mini Project 1:
Responsive Portfolio + Admin Dashboard UI

Mini Project 2:
To-Do App with Local Storage + Filters + Search

NODE.JS FUNDAMENTALS

- Architecture (Event loop/Call stack)
- npm & package management
- Built-in modules (fs, http, path)
- File uploads (Multer)

EXPRESS.JS BACKEND



- MVC Folder Structure
- API Versioning (/api/v1)
- Middlewares (Auth, Loggers)
- CRUD Routes & Error Handling

Mini Project 3:
Product Management REST API (CRUD + Validation + Error Handling)

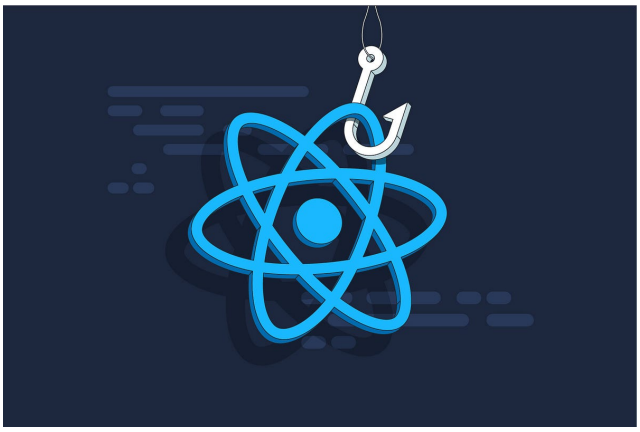
MONGODB & MONGOOSE



- Atlas Cloud Setup & Data Modeling
- Aggregation Pipelines (Analytics)
- Schema, Model & Validation
- Relations (Ref, Populate)
- Soft delete & timestamps

Mini Project 4:
Product Management REST API (CRUD + Validation + Error Handling)

REACT.JS & HOOKS



- Component-based architecture
- Props, State, Lists & Keys
- Hooks: useState, useEffect, useRef
- Context API for Global State
- Form Validations & API Optimization



ROUTING & STYLING

- React Router v6 & Protected Routes
- Axios & Interceptors
- Pagination & Skeleton Screens
- CSS Modules & Styled Components

Mini Project 5:
React Product Listing App (Filters + Cart + Search + API)



MERN INTEGRATION & SECURITY

- Connecting React to Express API
- Axios Interceptors for JWT Tokens
- State management for logged-in users
- JWT-based login/register & bcrypt hashing
- Role-based access control (Admin/User)
- API Throttling (Rate limits)



DEPLOYMENT (CLOUD SETUP)

- Deploy frontend (Netlify/Vercel)
- Deploy backend (Render/Railway/AWS)
- ENV production setup & HTTPS
- GitHub workflow for version control

REAL-TIME MERN CAPSTONE PROJECT

Choose one full-stack project and deploy fully:

Learning Management System (LMS)

Roles: Admin, Instructor, Student. Video uploads (Cloudinary), Progress tracking, Reviews, and Analytics.

Social Media Application

User profiles, Posts, Likes, Comments, Image uploads, Follow/Unfollow system, and Newsfeed algorithm.

Final Deliverables

- Fully deployed MERN project
- GitHub repository with professional documentation
- REST API documentation (Postman / Swagger)
- Admin + User roles implemented
- Full Authentication + Authorization system



Contact US

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