

Course 7: GraphQL with MERN

■ Overview

GraphQL APIs + React clients.

■ Prerequisites

- Express / Nest
- React

■ Outcomes

Schemas/resolvers, pagination, auth, deployment.

■ Benefits

This course equips learners with the skills to design and build GraphQL APIs connected to MongoDB and consume them efficiently in React applications. Students will master schema-first development, write resolvers with performance in mind, and implement queries, mutations, and subscriptions. The course emphasizes real-world challenges such as N+1 query prevention with DataLoader, robust error handling, caching, and pagination strategies. Learners will also gain experience in securing APIs with context and directives, integrating authentication and authorization at field-level resolution. Beyond development, the course prepares students for production by teaching persisted queries, CDN caching, and deployment practices, ensuring high performance and scalability in professional environments.

■ Training Key Features

- GraphQL schema design and resolver implementation
- Apollo Server setup with Express and schema stitching
- Efficient query/mutation handling with input types and DataLoader
- Subscriptions with WebSockets for real-time updates
- MongoDB integration with aggregation inside resolvers
- Apollo Client with cache normalization and policies
- Pagination strategies (cursor-based, Relay style)
- Authentication and authorization with context & directives
- Error handling with extensions, masking, and tracing
- Production-ready deployment with persisted queries and CDN caching

■ Module Breakdown

- Module 1 – GraphQL Fundamentals ::: schema language && resolvers
- Module 2 – Apollo Server Setup ::: Express integration && schema stitching
- Module 3 – Queries & Mutations ::: input types && N+1 problem && DataLoader
- Module 4 – Subscriptions ::: WebSocket setup && presence updates
- Module 5 – Mongo Integration ::: aggregation inside resolvers

- Module 6 – Apollo Client ::: cache policies && normalized store
- Module 7 – Pagination ::: cursor-based && Relay style
- Module 8 – Auth ::: context && directives && field-level rules
- Module 9 – Error Handling ::: error masking && extensions && tracing
- Module 10 – Deployment ::: persisted queries && CDN && caching