

## MongoDB

**Duration – 40 Hours**

### Program Description

This program provides a comprehensive introduction to MongoDB, a leading NoSQL database. Participants will learn how to design, query, and manage document-based databases, implement aggregation pipelines, and integrate MongoDB with modern applications. The program emphasizes hands-on exercises to build practical skills for real-world use cases.

### Learning Goals

- Understand the fundamentals of NoSQL databases and MongoDB
- Learn to design efficient document-based data models
- Perform CRUD operations and advanced queries using MongoDB
- Implement aggregation pipelines and indexing for performance
- Integrate MongoDB with backend applications (Node.js/Express)
- Apply best practices for backup, replication, and security
- Gain hands-on experience with real-world projects and case studies

### Course Topics

- Introduction to NoSQL and MongoDB
- MongoDB Architecture and Data Modeling
- CRUD Operations (Create, Read, Update, Delete)
- Indexing and Query Optimization
- Aggregation Framework and Pipelines
- Working with MongoDB Drivers and Integrations
- Security, Backup, and Replication
- Performance Tuning and Best Practices
- Hands-on Projects and Case Studies

Modules can be customized to suit client's specific needs and duration accordingly