

Course Name : **MONGODB: NOSQL DATABASE FROM SCRATCH**
Duration : **3 Days (Physical Classroom / Virtual Live Instructor)**
Skill Level : **Beginner**

COURSE DESCRIPTION:

In this course, we will commence by exploring the fundamental principles of MongoDB and highlighting the key contrasts between NoSQL and SQL to provide participants with a comprehensive understanding of the foundational concepts of the course. Subsequently, hands-on practical exercises will be conducted to assist participants in utilizing database operations within the Mongo Shell. Participants will learn how to apply filtering, projection, sorting, and query complex data structures to derive meaningful insights from real-world datasets. Upon completion of the course, participants will have the ability to construct a fully operational CRUD WebApp utilizing MongoDB and PHP.

WHAT WILL YOU LEARN?

The MongoDB: NoSQL Database from Scratch course is designed to provide participants with a comprehensive understanding of MongoDB and the fundamental concepts of NoSQL databases. Participants will learn:

- The basics of MongoDB and the differences between NoSQL and SQL databases
- How to use the Mongo Shell for database operations
- The techniques of filtering, projection, sorting, and querying complex data structures
- How to extract actionable insights from real-world datasets
- MongoDB with PHP and NodeJS Drivers
- How to build a fully functional CRUD WebApp using MongoDB and PHP

By the end of the course, participants will have a strong grasp of MongoDB and the skills to effectively utilize the database for real-world applications.

PREREQUISITE:

Beginners. Prior JavaScript helps but is not mandatory.

METHODOLOGY:

This program will be conducted with interactive lectures, PowerPoint presentations, discussions, and practical exercises. This course can be conducted as instructor-led (ILT) or virtual instructor-led training (VILT).

JOB SCOPE:

Upon completion of this course, candidates may pursue the following career paths:

- MongoDB Developer
- MongoDB Database Administrator
- Full Stack Developer
- Data Engineer
- Big Data Engineer
- NoSQL Database Administrator

DAY 1

MODULE 1: INTRODUCTION

- Welcome
- What you need to know?
- History Of MongoDB?
- Who uses MongoDB?
- What is MongoDB?
- Powerful Query Language
- MONGODB VS SQL?
- MongoDB Comparison to SQL
- MongoDB Terminology

MODULE 2: MONGODB INSTALLATION

- Installing MongoDB Windows and Mac
- Introduction to MongoShell
- Data Folder to Store our Databases
- DB Folder to Store our Databases
- Environment Variables
- MongoDB Server & Client
- Tools along with MongoDB

MODULE 3: MONGO SHELL

- What is Mongo Shell?
- MONGO SHELL CONNECT
- Mongo Shell Connect Options
- Mongo Shell Connect URI
- SHELL METHOD CATEGORIZATION
- Shell Methods: Command Helpers
- Show All Databases
- Show Current Database & Collections

DAY 2

MODULE 4: MONGODB CREATE, READ

- Client/server Communications
- Create and Show Collections
- Insert a Single Row
- Insert Multiple Rows
- Get All Rows Formatted
- Find Rows
- Sort Rows - ASC
- Sort Rows - DESC
- Count Rows
- Limit Rows

MODULE 5: MONGODB UPDATE, DELETE

- ForEach with Function & Arrow Function
- Find One Row
- Update an Entire Row
- Update an Update Specific Field
- UPSERT | If there is no match, do insert!
- Increment Field (\$inc)
- Rename Field (\$rename)
- Delete a document from the collection
- Sub Documents
- Find with Projection
- Find By Element in Array (\$elemMatch)
- Add Index for text search
- Text Search with created Index
- Update 'Post Two' document
- Greater Than & Equal
- Lesser Than & Equal

MODULE 6: GUI FOR MONGODB - COMPASS

- Compass - New Connection
- Compass - Show databases
- Compass - Create Collections
- Compass - Edit and Delete collections

DAY 3

MODULE 7: CLOUD MONGODB – ATLAS

- Cloud MongoDB Service - Atlas
- Dedicated Clusters
- Cloud Providers and Regions
- Cluster Tier
- Create a Database Users
- Network Access
- Choose Connection Method
- Connect & Run Queries

MODULE 8: MONGODB PHP DRIVER

- Difference between MongoDB PHP Extension and MongoDB PHP Library
- Extension installation on Windows
- Connect with Atlas cluster
- Create index.php file and connect the cluster.
- Run the index.php file to retrieve the results.

MODULE 9: MONGODB – NODE.JS DRIVER

- Install MongoDB driver via NPM
- Create a index.js script to connect the cluster
- Access the database and collections
- Retrieve the Results from the collection
- Run the index.js script

MODULE 10: PROJECT - MONGOPHP CRUD APP

- MongoDB PHP Driver
- Install mongodb/mongodb library
- MongoPHP CRUD - config
- MongoPHP CRUD - Read
- MongoPHP CRUD - Delete
- MongoPHP CRUD - Create
- MongoPHP CRUD - Update
- MongoPHP CRUD - Navbar
- MongoPHP CRUD - Finished Version

CONCLUSION

- QA
- Useful References and Books
- Feedback