## Unit 1: Getting started with MongoDB atlas

### Lesson 1 : **Introduction to MongoDB Atlas, the Developer Data Platform**

[MongoDB clusters](https://www.mongodb.com/basics/clusters?_ga=2.236620802.2069561177.1688714626-1079517409.1688230824)

[MongoDB atlas](https://www.mongodb.com/docs/atlas/?_ga=2.251422725.2069561177.1688714626-1079517409.1688230824)

### Lesson 2 : Creating and Deploying an Atlas Cluster

[Getting started with atlas](https://www.mongodb.com/docs/atlas/getting-started/?_ga=2.146885428.2069561177.1688714626-1079517409.1688230824)

[Deploy a free cluster](https://www.mongodb.com/docs/atlas/tutorial/deploy-free-tier-cluster/?_ga=2.242976385.2069561177.1688714626-1079517409.1688230824)

[Load sample data set](https://www.mongodb.com/docs/atlas/sample-data/?_ga=2.206201872.2069561177.1688714626-1079517409.1688230824)

## Unit 2 : MongoDB and Document Model

### Lesson 01 **: Introduction to MongoDB**

[What is MongoDB ?](https://www.mongodb.com/what-is-mongodb?_ga=2.210911254.2069561177.1688714626-1079517409.1688230824)

[Use cases](https://www.mongodb.com/use-cases?_ga=2.210911254.2069561177.1688714626-1079517409.1688230824)

### Lesson 02 **: The MongoDB Document Model**

[MongoDB Docs: Documents](https://www.mongodb.com/docs/manual/core/document/?_ga=2.182084772.2069561177.1688714626-1079517409.1688230824)

[MongoDB Docs : BSON Types](https://www.mongodb.com/docs/manual/reference/bson-types/?_ga=2.184837162.2069561177.1688714626-1079517409.1688230824)

[Explaining Bson with eg](https://www.mongodb.com/basics/bson?_ga=2.206268304.2069561177.1688714626-1079517409.1688230824)

[Json and Bson](https://www.mongodb.com/json-and-bson?_ga=2.206268304.2069561177.1688714626-1079517409.1688230824)

### Lesson 03**: Managing Databases, Collections, and Documents in Atlas Data Explorer**

[MongoDB Docs: Create, View, and Drop Databases](https://www.mongodb.com/docs/atlas/atlas-ui/databases/?_ga=2.64483046.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: Databases and Collections](https://www.mongodb.com/docs/manual/core/databases-and-collections/?_ga=2.97437654.810066485.1665291537-836515500.1666025886)

## Unit 3 : Introduction to MongoDB Data Modeling

### Lesson 01 **: Introduction to Data Modeling**

[Data Modeling Introduction](https://www.mongodb.com/docs/manual/core/data-modeling-introduction/?_ga=2.60935781.810066485.1665291537-836515500.1666025886)

[Separating Data That is Accessed Together](https://www.mongodb.com/developer/products/mongodb/schema-design-anti-pattern-separating-data/?_ga=2.60935781.810066485.1665291537-836515500.1666025886)

### Lesson 02 **: Types of Data Relationships**

[Data Model Design](https://www.mongodb.com/docs/manual/core/data-model-design/?_ga=2.19332209.810066485.1665291537-836515500.1666025886)

[Model Relationships Between Documents](https://www.mongodb.com/docs/v4.2/applications/data-models-relationships/?_ga=2.19332209.810066485.1665291537-836515500.1666025886)

[Embedding MongoDB](https://www.mongodb.com/basics/embedded-mongodb?_ga=2.19332209.810066485.1665291537-836515500.1666025886)

[MongoDB Schema Design Best Practices](https://www.mongodb.com/developer/products/mongodb/mongodb-schema-design-best-practices/?_ga=2.19332209.810066485.1665291537-836515500.1666025886)

### Lesson 03 **: Modeling Data Relationships**

[Data Model Design](https://www.mongodb.com/docs/manual/core/data-model-design/?_ga=2.19332209.810066485.1665291537-836515500.1666025886)

[Model Relationships Between Documents](https://www.mongodb.com/docs/v4.2/applications/data-models-relationships/?_ga=2.19332209.810066485.1665291537-836515500.1666025886)

### Lesson 04 **: Embedding Data in Documents**

[Embedding MongoDB](https://www.mongodb.com/basics/embedded-mongodb?_ga=2.19332209.810066485.1665291537-836515500.1666025886)

[Model One-to-One Relationships with Embedded Documents](https://www.mongodb.com/docs/manual/tutorial/model-embedded-one-to-one-relationships-between-documents/?_ga=2.19332209.810066485.1665291537-836515500.1666025886)

[Model One-to-Many Relationships with Embedded Documents](https://www.mongodb.com/docs/manual/tutorial/model-embedded-one-to-many-relationships-between-documents/?_ga=2.19332209.810066485.1665291537-836515500.1666025886)

### Lesson 05**: Referencing Data in Documents**

[Normalized Data Models](https://www.mongodb.com/docs/manual/core/data-model-design/?_ga=2.64006886.810066485.1665291537-836515500.1666025886#std-label-data-modeling-referencing)

[Model One-to-Many Relationships with Document References](https://www.mongodb.com/docs/manual/tutorial/model-referenced-one-to-many-relationships-between-documents/?_ga=2.64006886.810066485.1665291537-836515500.1666025886)

### Lesson 06**: Scaling a Data Model**

[Operational Factors and Data Models](https://www.mongodb.com/docs/manual/core/data-model-operations/?_ga=2.64006886.810066485.1665291537-836515500.1666025886)

[Performance Best Practices: MongoDB Data Modeling and Memory Sizing](https://www.mongodb.com/blog/post/performance-best-practices-mongodb-data-modeling-and-memory-sizing?_ga=2.64006886.810066485.1665291537-836515500.1666025886)

### Lesson 07**: Using Atlas Tools for Schema Help**

[A Summary of Schema Design Anti-Patterns and How to Spot Them](https://www.mongodb.com/developer/products/mongodb/schema-design-anti-pattern-summary/?_ga=2.64006886.810066485.1665291537-836515500.1666025886)

## Unit 4: Connecting to a MongoDB Database

### Lesson 01**: Using MongoDB Connection Strings**

[MongoDB Docs: Get Connection String](https://www.mongodb.com/docs/guides/atlas/connection-string/?_ga=2.2826361.818394043.1666026366-33697719.1666026366)

[MongoDB Docs: Connection String URI Format](https://www.mongodb.com/docs/manual/reference/connection-string/)

### Lesson 02**: Connecting to a MongoDB Atlas Cluster with the Shell**

[MongoDB Docs: The MongoDB Shell](https://www.mongodb.com/docs/mongodb-shell/)

### Lesson 03**: Connecting to a MongoDB Atlas Cluster with Compass**

[MongoDB Docs: MongoDB Compass](https://www.mongodb.com/products/compass/)

### Lesson 04**: Connecting to a MongoDB Atlas Cluster from an Application**

[MongoDB Docs: Connect via Your Application](https://www.mongodb.com/docs/atlas/driver-connection/)

### Lesson 05**: Troubleshooting MongoDB Atlas Connection Errors**

[MongoDB Docs: Troubleshoot Connection Issues](https://www.mongodb.com/docs/atlas/troubleshoot-connection/)

## Unit 5 : Connecting to MongoDB in Node.js

### Lesson 01**: Using MongoDB Node.js Client Libraries**

[MongoDB Drivers](https://www.mongodb.com/docs/drivers/)

[MongoDB Node.js Driver Docs](https://www.mongodb.com/docs/drivers/node/current/)

### Lesson 02**: Connecting to an Atlas Cluster in Node.js Applications**

[MongoDB Docs: Get Connection String](https://www.mongodb.com/docs/guides/atlas/connection-string/)

[MongoDB Docs: Connection String Format](https://www.mongodb.com/docs/manual/reference/connection-string/)

[MongoDB Node.js Connection to Atlas](https://www.mongodb.com/docs/drivers/node/current/fundamentals/connection/connect/#std-label-connect-to-mongodb)

### Lesson 03**: Troubleshooting a MongoDB Connection in Node.js Applications**

[MongoDB Docs: Troubleshoot Connection Issues](https://www.mongodb.com/docs/atlas/troubleshoot-connection/)

## Unit 6 : MongoDB CRUD Operations: Insert and Find Documents

### Lesson 01**: Inserting Documents in a MongoDB Collection**

[MongoDB Docs: insertOne()](https://docs.mongodb.com/manual/reference/method/db.collection.insertOne/?_ga=2.261124036.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: insertMany()](https://docs.mongodb.com/manual/reference/method/db.collection.insertMany/?_ga=2.86565841.810066485.1665291537-836515500.1666025886)

### Lesson 02**: Finding Documents in a MongoDB Collection**

[MongoDB Docs: find()](https://docs.mongodb.com/manual/reference/method/db.collection.find/?_ga=2.86565841.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: $in](https://docs.mongodb.com/manual/reference/operator/query/in/?_ga=2.86565841.810066485.1665291537-836515500.1666025886)

### Lesson 03**: Finding Documents by Using Comparison Operators**

[MongoDB Docs: Comparison Operators](https://docs.mongodb.com/manual/reference/operator/query-comparison/?_ga=2.86565841.810066485.1665291537-836515500.1666025886)

### Lesson 04**: Querying on Array Elements in MongoDB**

[MongoDB Docs: $elemMatch](https://docs.mongodb.com/manual/reference/operator/query/elemMatch/?_ga=2.86565841.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: Querying Arrays](https://docs.mongodb.com/manual/tutorial/query-array-of-documents/?_ga=2.86565841.810066485.1665291537-836515500.1666025886#combination-of-elements-satisfies-the-criteria)

### Lesson 05**: Finding Documents by Using Logical Operators**

[MongoDB Docs: Logical Operators](https://docs.mongodb.com/manual/reference/operator/query-logical/?_ga=2.86565841.810066485.1665291537-836515500.1666025886)

## Unit 7 : MongoDB CRUD Operations: Replace and Delete Documents

### Lesson 01**: Replacing a Document in MongoDB**

[MongoDB Docs: replaceOne()](https://www.mongodb.com/docs/manual/reference/method/db.collection.replaceOne/?_ga=2.56665699.810066485.1665291537-836515500.1666025886)

### Lesson 02**: Updating MongoDB Documents by Using updateOne()**

[MongoDB Docs: Update Operators](https://www.mongodb.com/docs/manual/reference/operator/update/?_ga=2.56665699.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: $set](https://docs.mongodb.com/manual/reference/operator/update/set/?_ga=2.56665699.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: $push](https://docs.mongodb.com/manual/reference/operator/update/push/?_ga=2.34644840.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: upsert](https://www.mongodb.com/docs/drivers/node/current/fundamentals/crud/write-operations/upsert/?_ga=2.123127490.810066485.1665291537-836515500.1666025886)

### Lesson 03**: Updating MongoDB Documents by Using findAndModify()**

[MongoDB Docs: findAndModify()](https://www.mongodb.com/docs/manual/reference/method/db.collection.findAndModify/?_ga=2.123127490.810066485.1665291537-836515500.1666025886)

### Lesson 04**: Updating MongoDB Documents by Using findAndModify()**

[MongoDB Docs: updateMany()](https://www.mongodb.com/docs/manual/reference/method/db.collection.updateMany/?_ga=2.123127490.810066485.1665291537-836515500.1666025886)

### Lesson 05**: Deleting Documents in MongoDB**

[MongoDB Docs: deleteOne()](https://www.mongodb.com/docs/v5.3/reference/method/db.collection.deleteMany/)

[MongoDB Docs: deleteMany()](https://www.mongodb.com/docs/v5.3/reference/method/db.collection.deleteMany/?_ga=2.23103219.810066485.1665291537-836515500.1666025886)

## Unit 8 : MongoDB CRUD Operations: Modifying Query Results

### **Lesson 01: Sorting and Limiting Query Results in MongoDB**

[MongoDB Docs: cursor.sort()](https://www.mongodb.com/docs/manual/reference/method/cursor.sort/?_ga=2.22528882.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: cursor.limit()](https://www.mongodb.com/docs/manual/reference/method/cursor.limit/?_ga=2.22528882.810066485.1665291537-836515500.1666025886)

### **Lesson 02: Returning Specific Data from a Query in MongoDB**

[MongoDB Docs: Project Fields to Return from Query](https://www.mongodb.com/docs/manual/tutorial/project-fields-from-query-results/?_ga=2.22528882.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: Projection Restrictions](https://www.mongodb.com/docs/manual/reference/limits/?_ga=2.22528882.810066485.1665291537-836515500.1666025886#mongodb-limit-Projection-Restrictions)

### **Lesson 03: Counting Documents in a MongoDB Collection**

[MongoDB Docs: db.collection.countDocuments()](https://www.mongodb.com/docs/manual/reference/method/db.collection.countDocuments/?_ga=2.30900342.810066485.1665291537-836515500.1666025886)

## Unit 9 : MongoDB CRUD Operations in Node.js

### **Lesson 01: Working with MongoDB Documents in Node.js**

[Storing Documents in MongoDB](https://www.mongodb.com/docs/manual/core/document/?&_ga=2.57273315.810066485.1665291537-836515500.1666025886#documents)

[Overview of BSON](https://www.mongodb.com/basics/bson?_ga=2.68669144.810066485.1665291537-836515500.1666025886)

### **Lesson 02: Inserting a Document in Node.js Applications**

[Insert Documents by Using Node.js](https://www.mongodb.com/docs/drivers/node/current/fundamentals/crud/write-operations/insert/?_ga=2.68669144.810066485.1665291537-836515500.1666025886)

### **Lesson 03: Querying a MongoDB Collection in Node.js Applications**

[Retrieve Data by Using Node.js](https://www.mongodb.com/docs/drivers/node/current/fundamentals/crud/read-operations/retrieve/?_ga=2.68669144.810066485.1665291537-836515500.1666025886)

### **Lesson 04: Updating Documents in Node.js Applications**

[Update Documents by Using Node.js](https://www.mongodb.com/docs/drivers/node/current/fundamentals/crud/write-operations/change-a-document/?_ga=2.68669144.810066485.1665291537-836515500.1666025886)

### **Lesson 05: Deleting Documents in Node.js Applications**

[Deleting Documents using Node.js](https://www.mongodb.com/docs/drivers/node/current/fundamentals/crud/write-operations/delete/?_ga=2.68669144.810066485.1665291537-836515500.1666025886)

### **Lesson 06: Creating MongoDB Transactions in Node.js Applications**

[Transactions in Node.js](https://www.mongodb.com/docs/drivers/node/current/fundamentals/transactions/?_ga=2.68669144.810066485.1665291537-836515500.1666025886)

## Unit 10 : MongoDB Aggregation

### Lesson 01**: Introduction to MongoDB Aggregation**

[MongoDB Docs: Aggregation Operations](https://www.mongodb.com/docs/manual/aggregation/)

[MongoDB Docs: Aggregation Pipelines](https://www.mongodb.com/docs/manual/aggregation/#std-label-aggregation-pipeline-intro)

### Lesson 02**: Using $match and $group Stages in a MongoDB Aggregation Pipeline**

[MongoDB Docs: $match](https://www.mongodb.com/docs/manual/reference/operator/aggregation/match/)

[MongoDB Docs: $group](https://www.mongodb.com/docs/manual/reference/operator/aggregation/group/)

### Lesson 03**: Using $sort and $limit Stages in a MongoDB Aggregation Pipeline**

[MongoDB Docs: $sort](https://www.mongodb.com/docs/manual/reference/operator/aggregation/sort/)

[MongoDB Docs: $limit](https://www.mongodb.com/docs/manual/reference/operator/aggregation/limit)

### Lesson 04**: Using $project, $count, and $set Stages in a MongoDB Aggregation Pipeline**

[MongoDB Docs: $project](https://www.mongodb.com/docs/manual/reference/operator/aggregation/project/)

[MongoDB Docs: $count](https://www.mongodb.com/docs/manual/reference/operator/aggregation/count/)

[MongoDB Docs: $set](https://www.mongodb.com/docs/manual/reference/operator/aggregation/set/)

### Lesson 05**: Using $out Stage in a MongoDB Aggregation Pipeline**

[MongoDB Docs: $out](https://www.mongodb.com/docs/manual/reference/operator/aggregation/out/)

## Unit 11: MongoDB Aggregation with Node.js

### Lesson 01**: Building a MongoDB Aggregation Pipeline in Node.js Applications**

[Aggregation](https://www.mongodb.com/docs/drivers/node/current/fundamentals/aggregation/?_ga=2.30468854.810066485.1665291537-836515500.1666025886)

[Aggregation Pipeline](https://www.mongodb.com/docs/manual/core/aggregation-pipeline/?_ga=2.262073156.810066485.1665291537-836515500.1666025886)

[Aggregation Stages](https://www.mongodb.com/docs/manual/reference/operator/aggregation-pipeline/?_ga=2.262073156.810066485.1665291537-836515500.1666025886#std-label-aggregation-pipeline-operator-reference)

### Lesson 02**: Using MongoDB Aggregation Stages with Node.js: $match and $group**

[$match](https://www.mongodb.com/docs/manual/reference/operator/aggregation/match/#mongodb-pipeline-pipe.-match)

[$group](https://www.mongodb.com/docs/manual/reference/operator/aggregation/group/#mongodb-pipeline-pipe.-group)

### Lesson 03**: Using MongoDB Aggregation Stages with Node.js: $sort and $project**

[$sort](https://www.mongodb.com/docs/manual/reference/operator/aggregation/sort/#mongodb-pipeline-pipe.-sort)

[$project](https://www.mongodb.com/docs/manual/reference/operator/aggregation/project/#mongodb-pipeline-pipe.-project)

## Unit 12: MongoDB Indexes

### Lesson 1 **- Using MongoDB Indexes in Collections**

[MongoDB Docs: Indexes](https://www.mongodb.com/docs/manual/indexes/?_ga=2.67626584.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: Indexes Reference](https://www.mongodb.com/docs/manual/reference/indexes/?_ga=2.67626584.810066485.1665291537-836515500.1666025886)

### Lesson 2 - **Creating a Single Field Index in MongoDB**

[MongoDB Docs: createIndex()](https://www.mongodb.com/docs/manual/reference/method/db.collection.createIndex/?_ga=2.67626584.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: Unique Indexes](https://www.mongodb.com/docs/manual/core/index-unique/?_ga=2.55479138.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: Measure Index Use](https://www.mongodb.com/docs/manual/tutorial/measure-index-use/?_ga=2.55479138.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: getIndexes()](https://www.mongodb.com/docs/manual/reference/method/db.collection.getIndexes/?_ga=2.55479138.810066485.1665291537-836515500.1666025886)

### Lesson 3 - **Creating a Multikey Index in MongoDB**

[MongoDB Docs: Multikey Indexes](https://www.mongodb.com/docs/manual/core/index-multikey/?_ga=2.55479138.810066485.1665291537-836515500.1666025886)

### Lesson 4 - **Working with Compound Indexes in MongoDB**

[MongoDB Docs: Compound Indexes](https://www.mongodb.com/docs/manual/core/index-compound/?_ga=2.55479138.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: Indexing Strategies](https://www.mongodb.com/docs/manual/applications/indexes/?_ga=2.55479138.810066485.1665291537-836515500.1666025886)

### Lesson 5 - **Deleting MongoDB Indexes**

[MongoDB Docs: dropIndex()](https://www.mongodb.com/docs/manual/reference/method/db.collection.dropIndex/?_ga=2.55479138.810066485.1665291537-836515500.1666025886)

[MongoDB Docs: dropIndexes()](https://www.mongodb.com/docs/manual/reference/method/db.collection.dropIndexes/?_ga=2.55479138.810066485.1665291537-836515500.1666025886)