classmate
Date
Page

Assignment No. 9

Title: MongoDB Installation

Problem Statement: To study the NoSQL database MongoDB and perform " installation and CRUD operations.

Objectives: 1. To understand concept of NOSQL database.
2. To implement CRUD operations.
3. To perform basic installation of MongoDB.

Outcomes: 1. Students will be able to understand and implement database concepts of mongoDB & NOSQL database.
2. Students will be able to perform CRUD operations.

H/W & S/W Requirements:
64-bit Windows OS, 1 TB HDD, i5 processor.

Theory:
MongoDB is an open source database that provides high performance, high availability and automobile scaling.
Collection is a group of mongoDB docs.
Document is a set of key-value pairs which have a schema.

→ Installation on Windows 10.

1. Download the appropriate package from community server on mongodb website according to the version.
2. Run the installer and check the appropriate boxes/buttons.
3. Click 'Finish'.
4. ~~Click~~ Go to Program Files → MongoDB → bin in C drive & copy path
5. Open Settings → path → Edit system Environmental Variables → PATH → New and add copied path to it.
6. Open Command Prompt and type 'mongo' to create connection.
7. Open MongoDB folder & write md \data\db which will make a new folder.
8. Again copy this path to environment variables.
9. Open Command prompt and write:
   mongod -config "C:\data\mongod.cfg" -install
10. Type net start mongoDB.

→ Creating Users and Assigning Roles:

1. ~~Flag~~ mongoDB allows us to create users by db.createUser(user, write Concern)
2. User contains the following fields: user, pwd, customData, roles, authentication Restrictions
3. Independent role within MongoDB can be created by expressing permissions on all privileges explicitly by db.createRole (role, write Concern)
4. Role contains role, privileges, roles, authenticationRestrictions
5. In order to create a new user within the system, you must have permission to create new user & to assign roles, you must have grant role permission

→ User Authentication

1. MongoDB provides a method which requires 2 parameters username & password.
2. If the user gets authenticated, resultant answer will be one and if not, it will be zero.
3. Syntax: db.auth("username", "password")
4. Authentication can be done after creating user & assigning the status there itself.

→ Creating Database and collections.

1. Database can be created by "use database_name" command.
2. Two methods for creating collections:-
   a) db.collection_name.insert({key:<value>, key:<value>, -})
   b) db.createCollection(name, options)
3. To insert one document into a collection we can use db.collection.insert() method.
4. To insert many documents, we can use the db.collection.insertMany() method.

→ Reading Documents from mongoDB

1. We can retrieve documents from a collection by using myCursor = db.collection.find({x})
2. Output will be displayed.

→ Updating Documents

1. db.collection_name.updateOne({x:y})
2. db.collection_name.updateMany({x})

→ Deleting

1. db.collection_name.delete(x,y)
2. db.collection_name.remove(x,y).

Conclusion :

Successfully installed MongoDB and performed CRUD operations. Also learnt concepts of NOSQL databases.