Assignment B01

Date of Completion

Date of Submission

Title: Study of open source NoSQL Database: mongodb

Problem Statement:
- Study of open Source NoSQL Database MongoDB
- Implement database with suitable example with MongoDB & write queries.

Objectives:
- Perform installation & setup of MongoDB
- Implemented database in MongoDB.
- Perform basic CURD operations & administrative commands in MongoDB.

Software & Hardware Requirements:
- MongoDB 4.4 .deb package
- text editor
- 64 bit OS, 8GB RAM
- Intel i5
- i/o devices

Theory:

MongoDB:

MongoDB is a cross platform, document oriented database that provides high performance, high availability & easy scalability, it is NoSQL database works on the concept of collection and document. A Single MongoDB server typically has multiple databases.

Collection:

Collection is a group of MongoDB documents It is equivalent of a RDBMS table A collection exists within a single database. Documents within a collection have different fields.

Document:

A document is a key value pair. Documents have dynamic schema ie that documents in the same collection donot need to have the same set of fields or structure.

- Advantages of MongoDB

1) Schema less
2) well defined structure
3) No complex joins
4) Scaling easy
5) deep query ability

- CURD operations:

- db.collection.insert()

Syntax:
db.collection.insert([<doc1>, <doc2>, ...])

- insertOne()

Syntax:
db.Collection.insertOne(<doc>)

- insertMany()

Syntax:
db.Collection.insertMany([<doc1>, <doc2>, ...])

- find()

Syntax:
db.Collection.find(<query. Document>)

- findOne()

Syntax:
db.collection.findOne(<query Document>)

- Update()

Syntax:
db.collection.update(<query>, <update>, {upsert})

- updateOne() :

Syntax:

```
db.collection.updateOne(
        <filter>,
        <update>,
        {upsert: <true/False>
                )
```

- updateMany()

Syntax:

```
db.collection.updateMany(
        <filter>,
        <update>,
        {upsert : <true/false>}
        )
```

- Delete()
  - remove()

Syntax:

```
db.collection.remove(<query>, <justone>)
```

- Query operators:

- Comparison
  1) $eq : equals
  2) $gt : greater than
  3) $lt : less than
  4) $in : Specific values.

  Syntax: {<field>: <$lt : <value>>}

- Logical
  1) $and
  2) $or
  3) $not

  Syntax: { $not : {<operator exp>}}

- Admin Commands:
  1) Create user
  2) Drop user
     db.dropUser()
  3) Create / Switch database
     use <name>
  4) Drop database
     use <name>
     dbdropDatabase()
  5) Create Collection
     db.CreateCollection("name")
  6) drop Collection
  7) Show Commands
     show dbs; show users; show roles;

Conclusion:

In this assignment we complete the study of MongoDB along with it's installation in Ubuntu 20.04 64 bits.