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Department of Computer Engineering

Experiment No.3
To install and configure MongoDB to execute NoSQL commands
Date of Performance:
Date of Submission:



AIM: To install and configure MongoDB/ Cassandra/ HBase/ Hypertable and to execute NoSQL commands.

THEORY:

MongoDB can be downloaded from <https://www.mongodb.com/try/download/community2>

Now open command prompt and run the following command

```
C:\>move mongodb-win64-* mongodb  
  
1 dir(s) moved.
```

MongoDB requires a data folder to store its files. The default location for the MongoDB data directory is c:\data\db. So create the folder using the Command Prompt. Execute the following command sequence.

```
C:\>md data  
  
C:\>md data\db
```

In case mongodb is stored in some other location, navigate to that folder.

In command prompt navigate to the bin directory present into the mongodb installation folder. Suppose the installation folder is D:\set up\mongodb

```
C:\Users\XYZ>d:  
  
D:\>cd "set up"  
  
D:\set up>cd mongodb  
  
D:\set up\mongodb>cd bin  
  
D:\set up\mongodb\bin>mongod.exe --dbpath "d:\set up\mongodb\data"
```

Now to run the mongodb, open another command prompt and issue the following command:



```
D:\set up\mongodb\bin>mongo.exe

MongoDB shell version: 2.4.6

connecting to: test

>db.test.save( { a: 1 } )

>db.test.find()

{ "_id" : ObjectId("5879b0f65a56a454"), "a" : 1 }

>
```

The use Command

MongoDB use DATABASE_NAME is used to create database. The command will create a new database, if it doesn't exist otherwise it will return the existing database

Syntax:

use DATABASE_NAME

The dropDatabase () Method

MongoDB db.dropDatabase () command is used to drop an existing database.

Syntax:

db.dropDatabase()

The createCollection() Method

MongoDB db.createCollection(name, options) is used to create collection.

Syntax:

db.createCollection(name, options)

Insert Document

To insert data into MongoDB collection, you need to use MongoDB's insert() or save() method

Syntax

>db.COLLECTION_NAME.insert(document)



Example:

```
>db.post.insert([
{
  title: 'MongoDB Overview',
  description: 'MongoDB is no sql database',
  tags: ['mongodb', 'database', 'NoSQL'],
  likes: 100
},
{
  title: 'NoSQL Database',
  description: 'NoSQL database doesn't have tables',
  tags: ['mongodb', 'database', 'NoSQL'],
  likes: 20,
  comments: [
    {
      user:'user1',
      message: 'My first comment',
      dateCreated: new Date(2022,11,10,2,35),
      like: 0
    }
  ]
}]
```

Creating sample document:

Example

Suppose a client needs a database design for his blog website. Website has the following requirements.



- ☐ Every post has the unique title, description and url.
- ☐ Every post can have one or more tags.
- ☐ Every post has the name of its publisher and total number of likes.
- ☐ Every Post have comments given by users along with their name, message, data-time and likes.
- ☐ On each post there can be zero or more comments.

Document:

```
{
  _id: POST_ID
  title: TITLE_OF_POST,
  description: POST_DESCRIPTION,
  by: POST_BY,
  url: URL_OF_POST,
  tags: [TAG1, TAG2, TAG3],
  likes: TOTAL_LIKES,
  comments: [
    {
      user:'COMMENT_BY',
      message: TEXT,
      dateCreated: DATE_TIME,
      like: LIKES
    },
    {
      user:'COMMENT_BY',
      message: TEXT,
      dateCreated: DATE_TIME,
      like: LIKES
    }
  ]
}
```



```
}  
]  
}
```

OUTPUT:

Show All Databases

```
mongosh mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.0.1  
Microsoft Windows [Version 10.0.22621.2283]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\samar>mongosh  
Current Mongosh Log ID: 651c354183769c4480038872  
Connecting to:  mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.0.1  
Using MongoDB: 7.0.2  
Using Mongosh: 2.0.1  
  
For mongosh info see: https://docs.mongodb.com/mongosh-shell/  
  
-----  
The server generated these startup warnings when booting  
2023-10-03T12:02:36.648+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted  
-----  
  
test> show dbs  
admin 40.00 KiB  
config 12.00 KiB  
local 40.00 KiB
```

Create new database

```
mongosh mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.0.1  
Microsoft Windows [Version 10.0.22621.2283]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\samar>mongosh  
Current Mongosh Log ID: 651c354183769c4480038872  
Connecting to:  mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.0.1  
Using MongoDB: 7.0.2  
Using Mongosh: 2.0.1  
  
For mongosh info see: https://docs.mongodb.com/mongosh-shell/  
  
-----  
The server generated these startup warnings when booting  
2023-10-03T12:02:36.648+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted  
-----  
  
test> show dbs  
admin 40.00 KiB  
config 12.00 KiB  
local 40.00 KiB  
test> use myTestDb  
switched to db myTestDb  
myTestDb> db  
myTestDb  
myTestDb> |
```



Know your current selected database

```
mongosh mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.0.1
Microsoft Windows [Version 10.0.22621.2283]
(c) Microsoft Corporation. All rights reserved.

C:\Users\samar>mongosh
Current Mongosh Log ID: 651c354183769c4480038872
Connecting to:      mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.0.1
Using MongoDB:      7.0.2
Using Mongosh:       2.0.1

For mongosh info see: https://docs.mongodb.com/mongodb-shell/

-----
The server generated these startup warnings when booting
2023-10-03T12:02:36.648+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

test> show dbs
admin  40.00 KiB
config 12.00 KiB
local  40.00 KiB
test> use myTestDb
switched to db myTestDb
myTestDb> db
myTestDb
myTestDb> |
```

Create collection

```
mongosh mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.0.1
Microsoft Windows [Version 10.0.22621.2283]
(c) Microsoft Corporation. All rights reserved.

C:\Users\samar>mongosh
Current Mongosh Log ID: 651c354183769c4480038872
Connecting to:      mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.0.1
Using MongoDB:      7.0.2
Using Mongosh:       2.0.1

For mongosh info see: https://docs.mongodb.com/mongodb-shell/

-----
The server generated these startup warnings when booting
2023-10-03T12:02:36.648+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

test> show dbs
admin  40.00 KiB
config 12.00 KiB
local  40.00 KiB
test> use myTestDb
switched to db myTestDb
myTestDb> db
myTestDb
myTestDb> db.createCollection("Employee");
{ ok: 1 }
myTestDb> |
```

To check collections list

```
myTestDb> db.createCollection("Employee");
{ ok: 1 }
myTestDb> show collections
Employee
myTestDb> |
```



Insert document in collection

```
myTestDb> db.Employee.insert({id:1 , name:'Samarth', address:'Pune'})
DeprecationWarning: Collection.insert() is deprecated. Use insertOne, insertMany, or bulkWrite.
{
  acknowledged: true,
  insertedIds: { '0': ObjectId("651c386283769c4480038873") }
}
myTestDb> db.Employee.insert({id:2 , name:'Shubham', address:'Ratnagiri'})
{
  acknowledged: true,
  insertedIds: { '0': ObjectId("651c387883769c4480038874") }
}
myTestDb> |
```

To insert multiple documents in selected collection

```
myTestDb> db.Employee.insert({id:3 , name:'Dharmesh', address:'Malvan'}, {id:4, name:'Hrushikesh', address:'kochi'})
{
  acknowledged: true,
  insertedIds: { '0': ObjectId("651c394183769c4480038875") }
}
myTestDb> |
```

Get collection document

```
myTestDb> db.Employee.find().pretty()
[
  {
    _id: ObjectId("651c386283769c4480038873"),
    id: 1,
    name: 'Samarth',
    address: 'Pune'
  },
  {
    _id: ObjectId("651c387883769c4480038874"),
    id: 2,
    name: 'Shubham',
    address: 'Ratnagiri'
  },
  {
    _id: ObjectId("651c394183769c4480038875"),
    id: 3,
    name: 'Dharmesh',
    address: 'Malvan'
  }
]
myTestDb> |
```




Update document

```
myTestDb> db.Employee.update({name:'Dharmesh'},{$set:{name:'Hrushikesh'}})
DeprecationWarning: Collection.update() is deprecated. Use updateOne, updateMany, or bulkWrite.
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
```

```
myTestDb> db.Employee.find().pretty()
[
  {
    _id: ObjectId("651c386283769c4480038873"),
    id: 1,
    name: 'Samarth',
    address: 'Pune'
  },
  {
    _id: ObjectId("651c387883769c4480038874"),
    id: 2,
    name: 'Shubham',
    address: 'Ratnagiri'
  },
  {
    _id: ObjectId("651c394183769c4480038875"),
    id: 3,
    name: 'Hrushikesh',
    address: 'Malvan'
  }
]
```

Drop collection

```
myTestDb> db.Employee.drop()
true
myTestDb> |
```

Drop database

```
myTestDb> db.dropDatabase()
{ ok: 1, dropped: 'myTestDb' }
```

CONCLUSION:

The study set out to implement and customize MongoDB to execute NoSQL instructions. MongoDB was effectively tailored and set up according to specific needs, incorporating security measures and system parameters. We gained insights into employing NoSQL commands for diverse database tasks, including data entry, retrieval, and organization. MongoDB demonstrated its scalability and efficiency in handling unstructured data, positioning it as a fitting option for NoSQL applications. The comprehensive documentation and support from the community significantly contributed to the successful execution of the experiment, equipping us with essential proficiencies for effective NoSQL data administration utilizing MongoDB.



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