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FINAL YEAR B.Tech

PAGE NO.:

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BDA

LAB ASSIGNMENT - I

AIM:- Create a sample database using mongodb and implement CRUD operations.

OBJECTIVES:-

- To learn NOSQL database mongodb.
- To study and execute CRUD operations.

PROBLEM STATEMENT:-

To create a sample database using mongodb and implement CRUD operations.

THEORY:-

Mongodb command (CRUD):-

1) Create:-

Database       $\Rightarrow$       use database name  
collection     $\Rightarrow$       `db.createCollection("mycoll")`

2) Insert document:-

`db.collection-name.insert(<doc>)`

3) Read:- Reading docs from a collection  
`db.collection.find()`

4) Update:- Update document of collection.

`db.collection.updateOne()`

`db.collection.updateMany()`

`db.collection.replaceOne()`



PAGE NO. 10

5) Delete: Deleting document of coll<sup>n</sup>.  
db.collection.deleteOne()  
db.collection.deleteMany()

INPUT: Customer database

OUTPUT: Execution of all commands mentioned above

PLATFORM: Windows

CONCLUSION: Thus we learn the syntax and the use of mongo db commands

### FAQ'S

Q1 What are CRUD operations? List some of them.  
CRUD operations refer to basic create, read, update, delete?

→ Explained in theory above.

Q2 Compare SQL and NO SQL.

SQL	NO SQL.
→ RDBMS	→ Distributed DMS.
→ Vertically Scalable	→ Horizontal Scalable.
→ Not suitable hierarchical	→ Suitable for hierarchical.
→ Can be used for complex queries	→ Not good for complex queries
→ Fixed schema	→ Dynamic Schema

Q3 Compare and explain mongo, mongod and mongos?

→ Mongo:-

1) Interactive shell interface to mongo DB.

2) Provides powerful interface for system administrators



3) The mongoshell is included as a part of mongodb server installation

### → Mongod :-

- It is a primary demon process for mongodb system
- It handles data request manages data on disk performs background management operation.
- Mongod is mongo daemon i.e. the host process for database when you start.

### → Mongos :-

- For a sharded cluster the mongos instance provide the interface the client application and sharded cluster.
- The mongos instance route queries ~~and write~~

## 1. show dbs

```
> show dbs
EMP      0.000GB
admin    0.000GB
company  0.000GB
config   0.000GB
dib      0.000GB
hr        0.000GB
imdb     0.136GB
local    0.000GB
test     0.000GB
```

## 2. use

```
> use petShop
switched to db petShop
```

## 3. show collections

```
> show collections
pets
```

## 4. createCollection

```
> db.createCollection("pets")
{ "ok" : 1 }
```

## 5. insert

```
> db.pets.insert({name: "Tommy", species: "German Sepherd"})
WriteResult({ "nInserted" : 1 })
```

## 6. insertMany

```
> db.pets.insertMany([
... .. {name:"Mikey",species:"Gerbil"},
... .. {name:"Davey Bungooligan",species:"Piranha"},
... .. {name:"Suzezy B",species:"Cat"},
... .. {name:"Mikey",species:"Hotdog"},
... .. {name:"Terrence",species:"Sausagedog"},
... .. {name:"Philomena Jones",species:"Cat"}
... .. ])
{
  "acknowledged" : true,
  "insertedIds" : [
    ObjectId("61556fd6f9a9c9e9e9acaf94"),
    ObjectId("61556fd6f9a9c9e9e9acaf95"),
    ObjectId("61556fd6f9a9c9e9e9acaf96"),
```

```

        ObjectId("61556fd6f9a9c9e9e9acaf97"),
        ObjectId("61556fd6f9a9c9e9e9acaf98"),
        ObjectId("61556fd6f9a9c9e9e9acaf99")
    ]
}

```

#### 7. insertOne

```

> db.pets.insertOne({name: "Skinny", species: "Brown Cat"})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("61557016f9a9c9e9e9acaf9a")
}

```

#### 8. deleteOne

```

> db.pets.deleteOne({"name" : "Tommy"})
{ "acknowledged" : true, "deletedCount" : 1 }

```

#### 9. deleteMany

```

> db.pets.deleteMany({"name" : "Mikey"})
{ "acknowledged" : true, "deletedCount" : 2 }

```

#### 10. dropDatabase

```

> db.dropDatabase()
{ "ok" : 1 }
> show dbs
EMP      0.000GB
admin    0.000GB
config   0.000GB
dib      0.000GB
hr       0.000GB
imdb     0.136GB
local    0.000GB
petShop  0.000GB
test     0.000GB
>

```

#### 11. remove

```

> db.pets.remove({})
WriteResult({ "nRemoved" : 5 })
> db.pets.find()

```

#### 12. updateOne

```

> db.pets.updateOne({ "name" : "Mikey" }, { $set : {"species" : "German

```

```

Sepherd"}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.pets.find()
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9b"), "name" : "Mikey", "species" :
"German Sepherd" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9c"), "name" : "Davey Bungooligan",
"species" : "Piranha" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9d"), "name" : "Suzezy B", "species" :
"Cat" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9e"), "name" : "Mikey", "species" :
"Hotdog" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9f"), "name" : "Terrence", "species" :
"Sausagedog" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acafa0"), "name" : "Philomena Jones",
"species" : "Cat" }

```

### 13. updateMany

```

> db.pets.updateMany({ "species" : "Hotdog" }, { $set : {"name" : "Katie"}})
{ "acknowledged" : true, "matchedCount" : 2, "modifiedCount" : 2 }
> db.pets.find()
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9b"), "name" : "Mikey", "species" :
"German Sepherd" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9c"), "name" : "Davey Bungooligan",
"species" : "Piranha" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9d"), "name" : "Suzezy B", "species" :
"Cat" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9e"), "name" : "Katie", "species" :
"Hotdog" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9f"), "name" : "Terrence", "species" :
"Sausagedog" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acafa0"), "name" : "Philomena Jones",
"species" : "Cat" }
{ "_id" : ObjectId("61558e8bf9a9c9e9e9acafa1"), "name" : "Katie", "species" :
"Hotdog" }

```

### 14. save

```

> db.pets.save({"name": "Sammy" , species : "rabbit" })
WriteResult({ "nInserted" : 1 })
> db.pets.find()
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9b"), "name" : "Mikey", "species" :
"German Sepherd" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9c"), "name" : "Davey Bungooligan",
"species" : "Piranha" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9d"), "name" : "Suzezy B", "species" :
"Cat" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9e"), "name" : "Katie", "species" :
"Hotdog" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9f"), "name" : "Terrence", "species" :

```

```

"Sausagedog" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acafa0"), "name" : "Philomena Jones",
  "species" : "Cat" }
{ "_id" : ObjectId("61558e8bf9a9c9e9e9acafa1"), "name" : "Katie", "species" :
  "Hotdog" }
{ "_id" : ObjectId("61558f7ef9a9c9e9e9acafa2"), "name" : "Sammy", "species" :
  "rabbit" }
> db.pets.save({"_id": 10 , "name": "Sammy" , species : "rabbit" })
WriteResult({ "nMatched" : 0, "nUpserted" : 1, "nModified" : 0, "_id" : 10 })
> db.pets.find()
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9b"), "name" : "Mikey", "species" :
  "German Sepherd" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9c"), "name" : "Davey Bungooligan",
  "species" : "Piranha" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9d"), "name" : "Suzezy B", "species" :
  "Cat" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9e"), "name" : "Katie", "species" :
  "Hotdog" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9f"), "name" : "Terrence", "species" :
  "Sausagedog" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acafa0"), "name" : "Philomena Jones",
  "species" : "Cat" }
{ "_id" : ObjectId("61558e8bf9a9c9e9e9acafa1"), "name" : "Katie", "species" :
  "Hotdog" }
{ "_id" : ObjectId("61558f7ef9a9c9e9e9acafa2"), "name" : "Sammy", "species" :
  "rabbit" }
{ "_id" : 10, "name" : "Sammy", "species" : "rabbit" }

```

## 15. find

```

> db.pets.find()
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9b"), "name" : "Mikey", "species" :
  "German Sepherd" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9c"), "name" : "Davey Bungooligan",
  "species" : "Piranha" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9d"), "name" : "Suzezy B", "species" :
  "Cat" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9e"), "name" : "Katie", "species" :
  "Hotdog" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acaf9f"), "name" : "Terrence", "species" :
  "Sausagedog" }
{ "_id" : ObjectId("615572a9f9a9c9e9e9acafa0"), "name" : "Philomena Jones",
  "species" : "Cat" }
{ "_id" : ObjectId("61558e8bf9a9c9e9e9acafa1"), "name" : "Katie", "species" :
  "Hotdog" }
{ "_id" : ObjectId("61558f7ef9a9c9e9e9acafa2"), "name" : "Sammy", "species" :
  "rabbit" }
{ "_id" : 10, "name" : "Sammy", "species" : "rabbit" }

```

#### 16. findOne

```
> db.pets.findOne({"name" : "Sammy" })
{
  "_id" : ObjectId("61558f7ef9a9c9e9e9acafa2"),
  "name" : "Sammy",
  "species" : "rabbit"
}
```

#### 17. drop

```
> db.createCollection("demo")
{ "ok" : 1 }
> show collections
demo
pets
products
> db.demo.drop()
true
```