Lab: MongoDB Basic CRUD Operations

Preparation Steps

You can either use the Google cloud platform or the MongoDB emulator on the official website (e.g., you can find one on https://docs.mongodb.com/manual/tutorial/insert-documents/) to practice

1. Go to https://console.cloud.google.com/ and login using your google account

2. Go to Compute Engine, VM instances, and start your VM instance

3. Type the following commands

   sudo service mongod start

   to bring the service up

4. Type the following command to run the mongo shell

   mongo

   (if not working, try

   sudo service mongod stop

   sudo service mongod start

   mongo

)

MongoDB basic CRUD operations

1. Go the testDB database using the following command

   use testDB

2. Use the following command to delete all the documents in the collection inventory

   db.inventory.deleteMany({})

3. Use insertMany() to populate the collection

```
db.inventory.insertMany( [
  { item: "canvas", qty: 100, size: { h: 28, w: 35.5, uom: "cm" }, status: "A" },
  { item: "journal", qty: 25, size: { h: 14, w: 21, uom: "cm" }, status: "A" },
  { item: "mat", qty: 85, size: { h: 27.9, w: 35.5, uom: "cm" }, status: "A" },
  { item: "mousepad", qty: 25, size: { h: 19, w: 22.85, uom: "cm" }, status: "P" },
  { item: "notebook", qty: 50, size: { h: 8.5, w: 11, uom: "in" }, status: "P" },
  { item: "paper", qty: 50, size: { h: 8.5, w: 11, uom: "in" }, status: "A" },
  { item: "paper", qty: 100, size: { h: 8.5, w: 11, uom: "in" }, status: "D" },
  { item: "planner", qty: 75, size: { h: 22.85, w: 30, uom: "cm" }, status: "D" },
  { item: "postcard", qty: 45, size: { h: 10, w: 15.25, uom: "cm" }, status: "A" },
  { item: "postcard", qty: 70, size: { h: 10, w: 15.25, uom: "cm" }, status: "D" },
  { item: "sketchbook", qty: 80, size: { h: 14, w: 21, uom: "cm" }, status: "A" },
  { item: "sketch pad", qty: 95, size: { h: 22.85, w: 30.5, uom: "cm" }, status: "A" }
] );
```

4. Check the documents in a collection

```
db.inventory.find( {} )
```

Logically equivalent to the following SQL statements

```
SELECT * FROM inventory
```

Check the documents in JSON format, which is more readable

```
db.inventory.find().pretty()
```

or

```
db.inventory.find().forEach(printjson)
```

Count the number of documents

```
db.inventory.count()
```

A basic select-from-where like query in MongoDB

```
db.inventory.find( { status: "D" } )
```

You may try `db.inventory.find( { status: "D" } ).pretty()`

Logically equivalent to the following SQL statements

```
SELECT * FROM inventory WHERE status = "D"
```

5. Update a single document

   First, what is the command to find all paper records?

   Now type the following command

```
db.inventory.updateOne(
  { item: "paper" },
  {
    $set: { "size.uom": "cm", status: "P" }
  }
)
```

   Check the result
   db.inventory.find({item: "paper"})

   Which record was updated?

6. Update many documents

```
db.inventory.updateMany(
  { item: "paper" },
  {
    $set: { "size.uom": "cm", status: "A" }
  }
)
```

   Check the result
   db.inventory.find({item: "paper"})

   Can you see the difference compared to step 5?

7. Delete only one document that matches a condition

   db.inventory.deleteOne({item: "paper"})

   Check the result
   db.inventory.find({item: "paper"})

   Which record was deleted?

8. Delete all documents from the inventory that match a condition
   db.inventory.deleteMany({ status : "A" })

   Check the result

9. Deletes all documents from a collection:
   db.inventory.deleteMany({})

   Check the result

References

https://docs.mongodb.com/manual/introduction/
https://www.guru99.com/create-read-update-operations-mongodb.html
https://www.codeproject.com/Articles/1037052/Introduction-to-MongoDB