Lab: MongoDB Basic CRUD Operations

Note: Please only copy and paste the insertMany() command. For all the other commands, you need to type them manually to get familiar with MongoDB commands.

1. Start the mongo shell in a Command Prompt window.
   Note: you may also use the MongoDB web shell on the following website for this lab if you are waiting for the download and installation of MongoDB
   https://docs.mongodb.com/manual/tutorial/insert-documents/

2. To display the database you are using, enter *db* (commands are case-sensitive)

3. To list the available databases, enter *show dbs*

4. To go to the testDB database, enter *use testDB*

5. Enter *show dbs*. Can you see the *testDB* database?

6. Use insertMany() to create and populate the *inventory* 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" }
] );
```

   You can copy the above command and right-click your mouse in the mongo shell to paste and run the command. You may use the following command to delete all documents from the *inventory* collection if you run the command more than once

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

7. Enter *show dbs*. Can you see the *testDB* database now?

8. To show the list of collections in the current database, enter

```
show collections
```

9. Display all the documents in the *inventory* collection
   db.inventory.find({})

   Logically equivalent to the following SQL statement (cannot run in MongoDB)
   SELECT * FROM inventory

   Check the documents in JSON format, which is easier for humans to parse
   db.inventory.find().pretty()

   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 statement
   SELECT * FROM inventory WHERE status = "D"

10. Using query operators
    db.inventory.find({ qty: { $lt: 50 } }) What does this do?

11. AND/OR conditions
    db.inventory.find({ status: "A", qty: { $lt: 30 } }) What does this do?
    db.inventory.find({ $or: [{ status: "A" }, { qty: { $lt: 30 } }] }) What does this do?

    Combination of AND/OR
    db.inventory.find({
      status: "A",
      $or: [{ qty: { $lt: 30 } }, { item: /^p/ }]
    })

12. $in operator
    db.inventory.find({ status: { $in: ["A", "D"] } })

    This is equivalent to
    db.inventory.find({ $or: [{ status: "A"}, { status: "D" }] })

13. Update a single document that matches a condition
    First, what is the command to find all paper records?
    db.inventory.find({ item: "paper" })

Now type the following command

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

Check all the paper records

```
db.inventory.find( { item: "paper" } )
```

Which record was updated?

14. Update all documents that matches a condition

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

Check the result

```
db.inventory.find( { item: "paper" } )
```

Do you see the difference compared to step 5?

15. Delete a single document that matches a condition

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

Check the result

```
db.inventory.find( { item: "paper" } )
```

Which record was deleted?

16. Delete all documents from the inventory that match a condition

```
db.inventory.deleteMany ( { status : "A" } )
```

Check the result

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

References

https://docs.mongodb.com/manual/