**ITIS 5166 Exercise 6**

In this exercise, you will use mongo shell to work with several MongoDB datasets.

**Part 1: Importing Data**

1. Download all dumped database file by typing the following line in the terminal

git clone<https://github.com/huynhsamha/quick-mongo-atlas-datasets.git>

1. In the terminal, browse to the folder of the datasets by typing the following line

cd quick-mongo-atlas-datasets

1. Run MongoDB as a service
2. In the terminal, type the following line to import the data

mongorestore --host localhost --port 27017 --db sample\_training --dir ./dump/sample\_training

**Part 2: MongoDB Shell Commands**

1. In the terminal, start mongo shell by typing mongo
2. Show all databases on your server, and you should see a database with name sample\_training.
3. Switch to the sample\_training database
4. Show all collections in this database
5. Take a screenshot of your terminal and name the screenshot part2

**Part 3: CRUD Operations**

In this part, you will query the zips collection in the sample\_training database. Take a screenshot after each step, and name the file as part3Stepi, where i is the number of the step.

1. To learn the structure of the documents in the collection, pretty print one document in the collection.
2. Find and pretty print all documents in the collection where the zip field is equal to "28213".
3. Write a query to find the number of documents in the collection with the zip field is equal to "CHARLOTTE"
4. Write a query to find the number of documents in the collection with less than 1,000 people listed in the pop field
5. Write a query to find the number of the documents in the collection with more than 5,000 and less than 1,000,000 people.
6. Write a query to update a single document in the zips collection where the zips field is equal to "12534" by setting the value of the "pop" field to 17630.

Hint: use the [set operator](https://docs.mongodb.com/manual/reference/operator/update/set/#up._S_set)

1. Write a query to update a single document in the zips collection where the zips field is equal to "28226" by incrementing the value of the "pop" field by 100.

Hint: use the [inc operator](https://docs.mongodb.com/manual/reference/operator/update/inc/#up._S_inc)

1. Write a query to add a boolean field "capital?" to all documents pertaining to Albany NY, and New York, NY. The value of the field should be true for all Albany documents and false for all New York documents.

Hint: use the [set operator](https://docs.mongodb.com/manual/reference/operator/update/set/#up._S_set)

**Part 4: More CRUD Operations**

In this part, you will query the grades collection in the sample\_training database. Take a screenshot after each step, and name the file as part4Stepi, where i is the number of the step.

1. To learn the structure of the documents in the collection, pretty print one document in the collection.
2. Insert the following document into the collection:

{"student\_id" : 100, "scores" : [ { "type" : "exam", "score" : 7.107495905702576 } ], "class\_id" : 500 }

1. Write a query to find all documents in the grades collection where the class\_id field is 500. You will notice that for all of the students, the scores array has four sub-documents. Add the following three sub-documents to the document you created in step 2:

* { "type" : "quiz", "score" : 9.191720187557252 }
* { "type" : "homework", "score" : 94.54282238084804 }
* { "type" : "homework", "score" : 65.91223251610855 }

Hint: Use the [push operator](https://docs.mongodb.com/manual/reference/operator/update/push/#up._S_push)

**Part 5: Create a Database and a Collection**

In this part, you will create your own database and collection. Take a screenshot after each step, and name the file as part5Stepi, where i is the number of the step.

1. Create a database called school. Then, create a collection named students.
2. Insert 3 students in the students collection. The 2 below, and use your information as a third student. You can insert these one at a time or all 3 at the same time by wrapping them in an array [ ].

{"\_id":800123456,

"firstName": "Claus",

"lastName": "Brown",

"degree": "BS",

"program": "CS"

}

{"\_id": 800678123,

"firstName": "Bruce",

"lastName": "Smith",

"degree": "MS",

"program": "SIS"

}

1. Remove all students who have their degree equal to “MS”.

You have finished. Make sure all of your screenshots are in a zipped folder titled Exercise6\_FirstName\_LastName.zip and submit it to canvas.