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Snhu [CS-340-11168-M01 Client/Server Development](https://learn.snhu.edu/d2l/home/1610135)  
May 26th, 2024  
Week 3  
  
  
**Attached Screenshots below:**

Part I: Importing and Indexing a Data Set

1. Set Environment Variables:

export MONGO\_HOST=nv-desktop-services.apporto.com

export MONGO\_PORT=31593

export MONGO\_USER=root

export MONGO\_PASS=61HyRsVrum

2. Import the CSV File into MongoDB:

mongoimport --host $MONGO\_HOST --port $MONGO\_PORT -u $MONGO\_USER -p $MONGO\_PASS --authenticationDatabase admin --db AAC --collection animals --type csv --headerline --file /usr/local/datasets/aac\_shelter\_outcomes.csv

- Output:

2024-05-26T19:58:25.118+0000 connected to: mongodb://nv-desktop-services.apporto.com:31593/

2024-05-26T19:58:25.560+0000 10000 document(s) imported successfully. 0 document(s) failed to import.

3. Open the Mongo Shell:

mongosh

- Output:

Current Mongosh Log ID: 66539468ceeda6f96abb73b2

Connecting to: mongodb://<credentials>@nv-desktop-services.apporto.com:31593/?directConnection=true&appName=mongosh+1.8.0

Using MongoDB: 6.0.13

Using Mongosh: 1.8.0

4. Switch to the "AAC" Database:

use AAC

- Output:

switched to db AAC

5. Create a Simple Index on the "breed" Key:

db.animals.createIndex({ breed: 1 })

- Output:

breed\_1

6. Verify the Index with an Example Query:

db.animals.find({ breed: "Labrador Retriever" }).explain("executionStats")

- Output:

{

explainVersion: '1',

queryPlanner: { ... },

executionStats: {

executionSuccess: true,

nReturned: 126,

executionTimeMillis: 0,

totalKeysExamined: 126,

totalDocsExamined: 126,

executionStages: { ... }

},

command: { ... },

serverInfo: { ... },

serverParameters: { ... },

ok: 1

}

7. Create a Compound Index on "breed" and "outcome\_type":

db.animals.createIndex({ breed: 1, outcome\_type: 1 })

- Output:

breed\_1\_outcome\_type\_1

8. Verify the Compound Index with an Example Query:

db.animals.find({ breed: "Labrador Retriever", outcome\_type: "Transfer" }).explain("executionStats")

- Output:

{

explainVersion: '1',

queryPlanner: { ... },

executionStats: {

executionSuccess: true,

nReturned: 7,

executionTimeMillis: 0,

totalKeysExamined: 7,

totalDocsExamined: 7,

executionStages: { ... }

},

command: { ... },

serverInfo: { ... },

serverParameters: { ... },

ok: 1

}

Part II: User Authentication

1. Create a New User Account (if not already created):

- Open the Mongo Shell:

mongosh "mongodb://$MONGO\_USER:$MONGO\_PASS@$MONGO\_HOST:$MONGO\_PORT/?authSource=admin"

- Switch to the Admin Database:

use admin

- Create the User Account:

db.createUser({

user: "aacuser",

pwd: "VUDEHSNHUCS340",

roles: [{ role: "readWrite", db: "AAC" }]

})

- Output (if user already exists):

MongoServerError: User "aacuser@admin" already exists

- Verify the User Creation:

db.getUsers()

- Output:

{

users: [

{

\_id: 'admin.aacuser',

userId: new UUID("41086aeb-a002-4182-bb0c-4f2c840079d1"),

user: 'aacuser',

db: 'admin',

roles: [ { role: 'readWrite', db: 'AAC' } ],

mechanisms: [ 'SCRAM-SHA-1', 'SCRAM-SHA-256' ]

},

{

\_id: 'admin.root',

userId: new UUID("8d870643-5c3d-464a-af03-d7ddc7fc555f"),

user: 'root',

db: 'admin',

roles: [ { role: 'root', db: 'admin' } ],

mechanisms: [ 'SCRAM-SHA-1', 'SCRAM-SHA-256' ]

}

],

ok: 1

}

2. Log in as the New User:

- Exit the Current Mongo Shell Session:

exit

- Set Environment Variables for `aacuser`:

export MONGO\_USER=aacuser

export MONGO\_PASS=VUDEHSNHUCS340

- Connect to MongoDB as `aacuser`:

mongosh "mongodb://${MONGO\_USER}:${MONGO\_PASS}@${MONGO\_HOST}:${MONGO\_PORT}/?authSource=admin"

- Verify the Connection:

db.runCommand({ connectionStatus: 1 })

- Output:

{

authInfo: {

authenticatedUsers: [ { user: 'aacuser', db: 'admin' } ],

authenticatedUserRoles: [ { role: 'readWrite', db: 'AAC' } ]

},

ok: 1

}

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