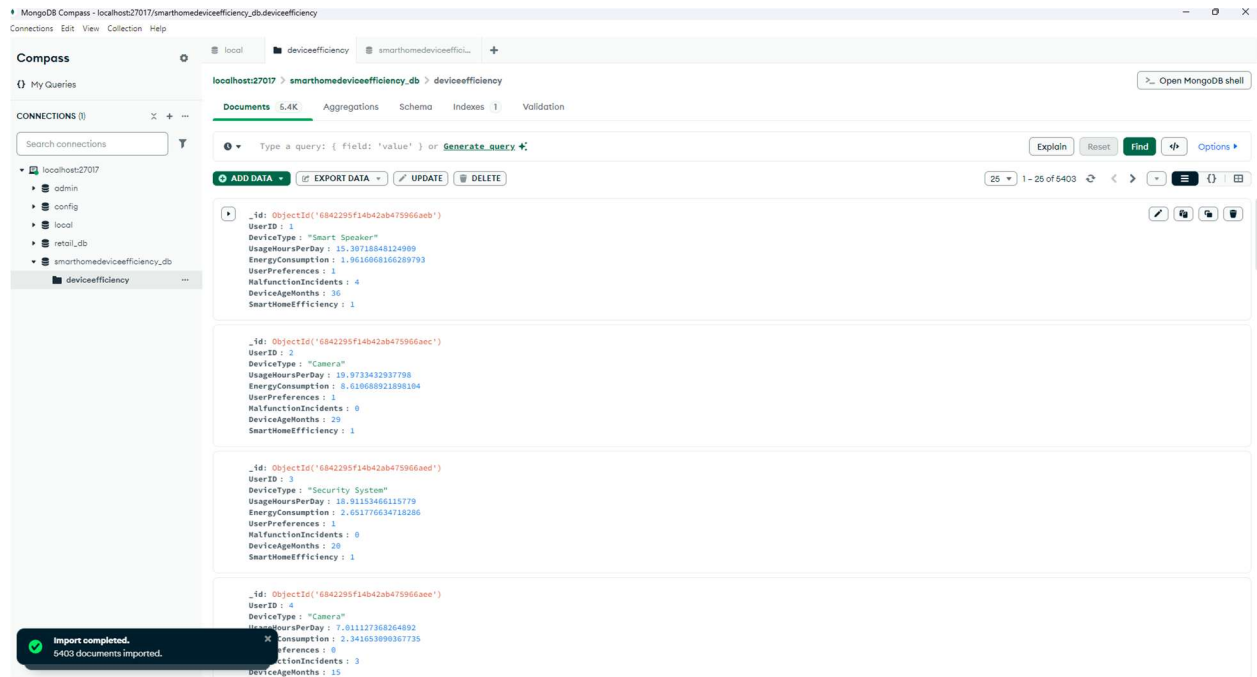
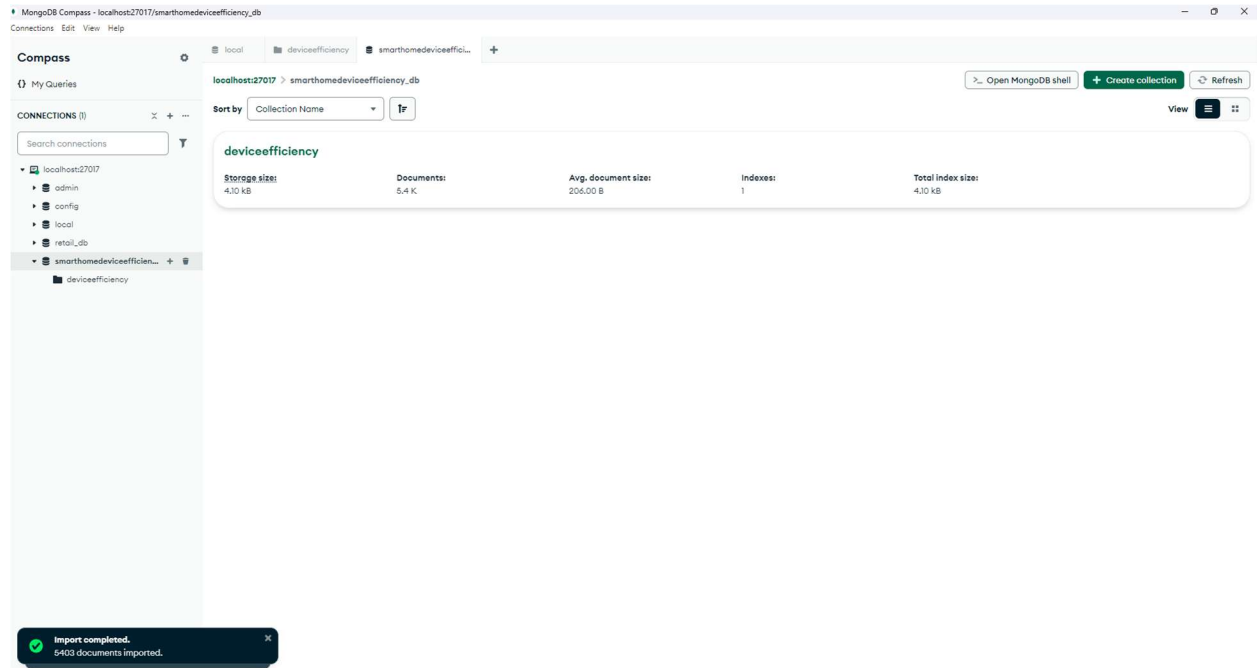


Danny Nguyen Final Project - MongoDB



Mongo DB Connection

```
In [52]: import pymongo
from pymongo import MongoClient
# Connect to MongoDB
client = MongoClient("mongodb://localhost:27017/")

In [53]: db = client['smarthomeDeviceEfficiency_db']
collection = db['deviceEfficiency']

In [54]: # Retrieve the first three records
retrieve = collection.find().limit(3)
# Print the records
for record in retrieve:
    print(record)

({'_id': ObjectId('6842295f14b42ab475966aeb'), 'UserID': 1, 'DeviceType': 'Smart Speaker', 'UsageHoursPerDay': 15.38718848124809, 'EnergyConsumption': 1.9616083166289793, 'UserPreferences': 1, 'MalfunctionIncidents': 4, 'DeviceAgeMonths': 36, 'SmartHomeEfficiency': 1}
{'_id': ObjectId('6842295f14b42ab475966aec'), 'UserID': 2, 'DeviceType': 'Camera', 'UsageHoursPerDay': 19.973432937798, 'EnergyConsumption': 8.618688921888184, 'UserPreferences': 1, 'MalfunctionIncidents': 0, 'DeviceAgeMonths': 28, 'SmartHomeEfficiency': 1}
{'_id': ObjectId('6842295f14b42ab475966aed'), 'UserID': 3, 'DeviceType': 'Security System', 'UsageHoursPerDay': 18.91133466115779, 'EnergyConsumption': 2.651776534718386, 'UserPreferences': 1, 'MalfunctionIncidents': 0, 'DeviceAgeMonths': 28, 'SmartHomeEfficiency': 1})

In [58]: allrecords = collection.find()
mongodf = pd.DataFrame(list(allrecords))
print(mongodf)

   _id  UserID  DeviceType  UsageHoursPerDay  \
0  6842295f14b42ab475966aeb          1  Smart Speaker          15.387188
1  6842295f14b42ab475966aec          2    Camera          19.973433
2  6842295f14b42ab475966aed          3  Security System          18.911335
3  6842295f14b42ab475966aee          4    Camera           7.811127
4  6842295f14b42ab475966aef          5    Camera          22.618684
...    ...    ...    ...    ...
5398 6842295f14b42ab475968081  5398  Thermostat           4.556314
5399 6842295f14b42ab475968082  5400  Lights           0.561856
5400 6842295f14b42ab475968083  5401  Smart Speaker          11.094236
5401 6842295f14b42ab475968084  5402  Security System           8.782169
5402 6842295f14b42ab475968085  5403  Thermostat          13.548381

   EnergyConsumption  UserPreferences  MalfunctionIncidents  \
0              1.961608              1              4
1              8.618689              1              0
2              2.651777              1              0
3              2.343653              0              3
4              4.859069              1              3
...    ...    ...    ...
5398           5.871764              1              0
5399           1.555992              1              4
5400           7.677779              0              0
5401           7.467929              0              2
5402           9.843876              0              0

   DeviceAgeMonths  SmartHomeEfficiency
0                36                    1
1                29                    1
2                30                    1
3                15                    0
4                36                    1
...    ...    ...
5398             28                    0
5399             24                    0
5400             42                    0
5401             28                    1
5402             38                    0

[5403 rows x 9 columns]

In [60]: allrecords_count = collection.count_documents({})
print(f"Total # of Records: {allrecords_count}")

Total # of Records: 5403

In [62]: cameradevices = collection.count_documents({"DeviceType": "Camera"})
print(f"Total number of Camera Records:", cameradevices)

Total number of Camera Records: 1181

In [64]: # End of Project

In [ ]:
```