

# AurianaAnderson.module07lab01

February 21, 2025

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[7]: # -*- coding: utf-8 -*-
      """
      Created on Sat Jul 22 21:26:37 2023

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      """

      #import pymongo
      import pymongo
      from pymongo import MongoClient
      from pymongo.errors import ServerSelectionTimeoutError

      """
      Exercise 1
      Create a mongo_db connection with pymongo to your database
      https://pymongo.readthedocs.io/en/stable/examples/authentication.html

      For the homework we will be using the sample_restaurants.restaurants collection.
      ↪

      Using find(), write a find query to extract the Italian restaurants in_
      ↪Manhattan to a Python list.
      Use len() to count the number of restaurants located in Manhattan.

      ***Note*** All MongoDB functions and fields MUST be in quotes inside of the_
      ↪find() method. Ex $and should be "$and".

      https://www.w3schools.com/python/python_mongodb_find.asp
      """
      uri = 'mongodb+srv://andersonau:AAunrnidaerson1!@dse6210-sql-nosql.wrnvx.
      ↪mongodb.net/?retryWrites=true&w=majority&appName=DSE6210-SQL-NoSQL'
      client = MongoClient(uri)

      #Test to see if it is working:
      # try:
      #     client = MongoClient(uri)
```

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#     db = client.get_database('sample_geospatial')
#     print("Connection successful!")
#     print("Collections in the database:", db.list_collection_names())
# except ServerSelectionTimeoutError as e:
#     print(f"Error connecting to MongoDB: {e}")

#now do the same for the restaurant data.

try:
    client = MongoClient(uri)
    db = client.get_database('sample_restaurants')
    print("Connection successful!")
    print("Collections in the database:", db.list_collection_names())
except ServerSelectionTimeoutError as e:
    print(f"Error connecting to MongoDB: {e}")

collection = db.restaurants

italian_manhattan_query = {"cuisine": "Italian", "borough": "Manhattan"}

italian_manhattan_restaurants = list(collection.find(italian_manhattan_query))

print(f"There are {len(italian_manhattan_restaurants)} Italian Restaurant's in_
↳Manhattan")
"""
Exercise 2
Using find, determine how many Japanese and Italian restaurants have an A_
↳rating in Queens.

"""
ital_jap_manhattan_query = collection.find({"$and": [{"borough": "Queens"}
, {"$or": [ {"cuisine": "Japanese"}
, {"cuisine": "Italian"} ]}}
,{"grades.grade": "A"} ]})

ital_jap_manhattan_list = list(ital_jap_manhattan_query)

print(f"There are {len(ital_jap_manhattan_list)} Italian and Japanese_
↳Restaurant's in Queens that have an A rating")
"""
Exercise 3
The following MongoDB aggregation query is missing a aggregation expression_
↳that will calculate the BSON size of the documents.
A list of these can be found at the end of this week's notes. Identify the_
↳missing aggregation expression.
Print the 10 document ids and sizes that have the highest BSON size.
"""

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```

res = collection.aggregate([
    { "$addFields": {
        "bsonsize": { "$bsonSize": "$$ROOT" }
    }},
    { "$sort": { "bsonsize": -1 }},
    { "$limit": 10 },
    { "$project": {
        "_id": 1,
        "bsonsize": 1
    }}
])
for document in res:
    print(f'Document ID:{document['_id']], BSON size:{document['bsonsize']}]')

```

"""

#### Exercise 4

*Find all of the restaurants that have NOT had an 'A', 'B', and 'Not Yet Graded' rating. How many restaurants is this?*

"""

```

not_abnotyet_rating = collection.find({"$and":[{"grades.grade":{"$not":{"$eq":
    ↪ "A"}}}
    ,{"grades.grade":{"$not":{"$eq":"B"}}}
    ,{"grades.grade":{"$not":{"$eq":"Not Yet Graded"}}}]
    })

not_abnotyet_rating_list = list(not_abnotyet_rating)

print(f"There are {len(not_abnotyet_rating_list)} restaurant's that do NOT have
    ↪ an A,B, or Not yet graded rating.")

```

Connection successful!

Collections in the database: ['restaurants', 'neighborhoods']

There are 621 Italian Restaurant's in Manhattan

There are 240 Italian and Japanese Restaurant's in Queens that have an A rating

Document ID:5eb3d669b31de5d588f4561a, BSON size:694

Document ID:5eb3d668b31de5d588f43b95, BSON size:684

Document ID:5eb3d669b31de5d588f45195, BSON size:681

Document ID:5eb3d668b31de5d588f44257, BSON size:679

Document ID:5eb3d668b31de5d588f42eed, BSON size:677

Document ID:5eb3d668b31de5d588f436af, BSON size:677

Document ID:5eb3d668b31de5d588f42c95, BSON size:677

Document ID:5eb3d668b31de5d588f43367, BSON size:669

Document ID:5eb3d669b31de5d588f452c7, BSON size:662

Document ID:5eb3d669b31de5d588f45859, BSON size:661

There are 948 restaurant's that do NOT have an A,B, or Not yet graded rating.

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