CSE 5331 – DBMS Models and Implementation

Project Report

Group members:

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Preliminary Requirements

Work done by both the team members

Tools and Languages used: Python, MongoDB

Requirements: Python (3.7), MongoDB (4.4)

How to run: Run the files in the following order in command prompt:

1. “python question1.py” (Question 1)
2. “python question2.py” (Question 2)
3. “python queries.py” (Question 4 – Queries)
4. “python ec1.py” (Extra Credit 1)
5. “python ec2.py” (Extra Credit 2)

Output Files:

1. For question 1 collection named “part1” will be created in the database as well as the part1.json will be created in the folder.
2. For question 2 collection named “part2” will be created in the database as well as the part1.json will be created in the folder.
3. For question 4 text file named “queries.txt” will be created in the project folder.
4. For Extra Credit 1 files named “part1_extra_credit1.xml” and “part2_extra_credit1” will be created.
5. For Extra Credit 2 collection named “EC2” will be created in the database.

FLOW OF THE PROGRAM

Question 1 (Project):

1. Create and Connect to MongoDB database.
2. Read CSV files give headers to each column
3. Merge Project and Department collections based on “Department Number”
4. Merge Employee and Works On collections based on “SSN”
5. Insert data to MongoDB database in JSON format.
6. Using the aggregate function create the required tree structure.
7. Export result to the JSON file.

Question 2 (Employees):

1. Connect to MongoDB database.
2. Read CSV files give headers to each column
3. Merge Employee and Department collections based on “Department Number”
4. Merge Project and Works On collections based on “Project Number”
5. Insert data to MongoDB database in JSON format.
6. Using the aggregate function create the required tree structure.
7. Export result to the JSON file.

Question 4 (Queries):

1. Connect to MongoDB database.
2. Execute various queries on part1 and to using db.collection.find() function
3. Store queries and results in text file.

Extra Credit

Question Extra Credit 1:

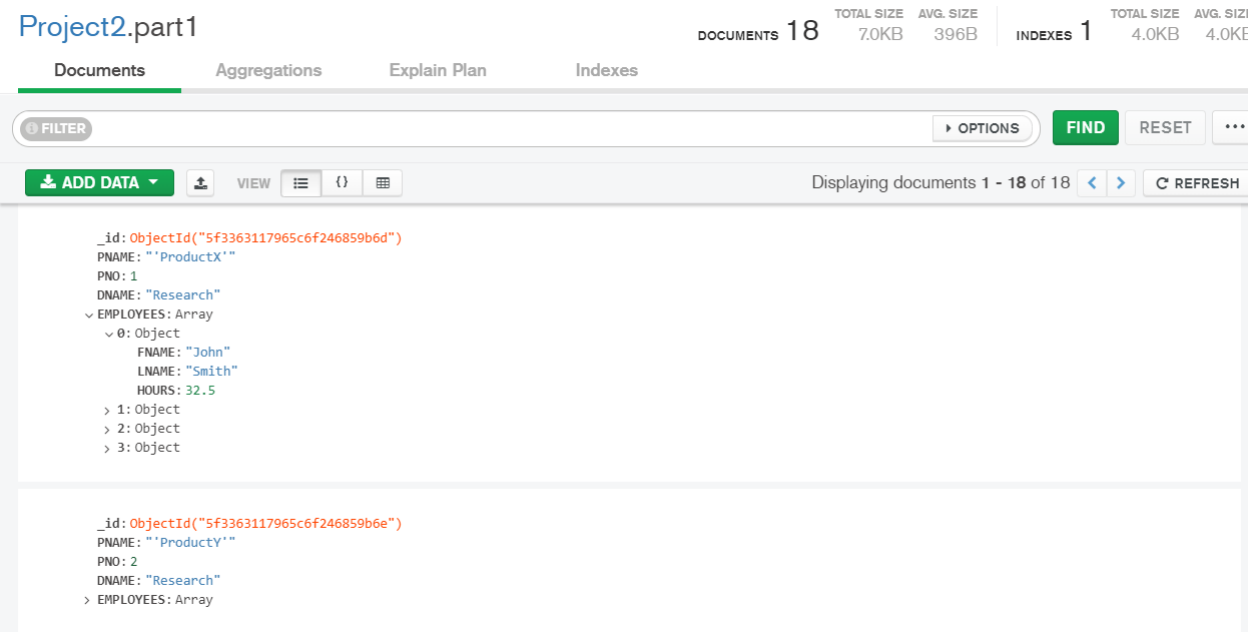
1. Connect to MongoDB database.
2. Retrieve JSON data from MongoDB output collection of Question 1 and Question 2.
3. Convert data to XML format and store the files.

Question Extra Credit 2:

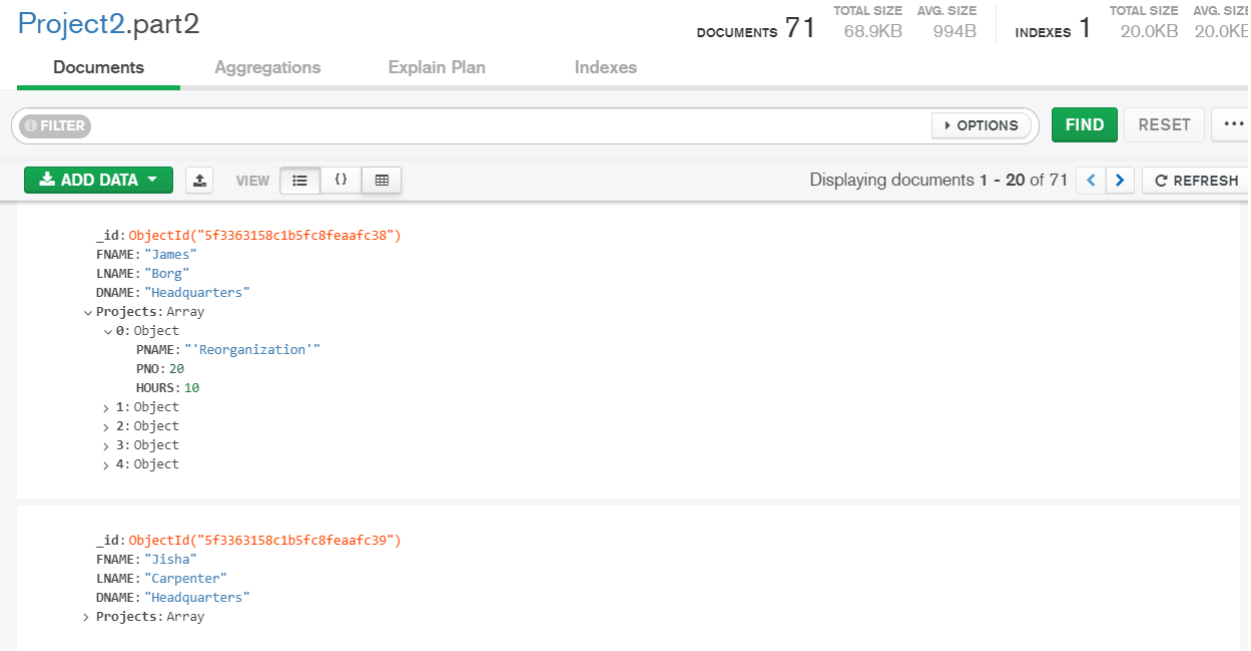
1. Connect to MongoDB database.
2. Read CSV files give headers to each column
3. Merge Department and Employee collections based on “Department Number” and “Manager SSN”
4. Insert data to MongoDB database in JSON format.
5. Using the aggregate function create the required tree structure.

Output Files

Question 1:



Question 2:



Question Extra Credit 2: