HW-6 MongoDB

Overview

- Assignment points: 10 points or 10% toward your final grade.
- All Questions are equally weighted (10 question for total of 10 points).
- Due date: **4/28/2024, 11:59 pm**.
- Late submission: grace period of 2 days with 20% late penalty. After that time, assignment will NOT be accepted.
- Submission: submit **Mongo SQL scripts** and **output (result set)** in Canvas in pdf or word doc.
- Make sure to **mark your answers** with the question number.
- This is open book exam, and any kind of resource materials are allowed.

This assignment will give you hands-on practice in working with the MongoDB "NoSQL" database software.

Objectives

1. Download and install MongoDB.
2. Create a MongoDB database to store a collection of documents.
3. Load a large amount of document-based data into the collection.
4. Query the document collection to research a topic and answer questions.

Installations

Visit the MongoDB Compass installation **guide** at https://www.mongodb.com/docs/compass/current/install/ . **Choose** the installation package that matches your **operating system**, and then proceed to follow the provided installation instructions.

Write MongoDB SQL scripts for below questions:

NOTE 1:

Before addressing the questions, please make sure you have set up a database named '**CSCI3287**' in **MongoDB Compass**. Inside this database, create a collection named '**HW6.**' You can then proceed to download the '**uscities.csv**' file from the Canvas page and import it into the 'HW6' collection by clicking on **'Add Data'** in the collections panel and then click on **import JSON or CSV** to import "uscities.csv" file.

NOTE 2:

Please utilize **_MONGOSH**, which is accessible within MongoDB Compass. You are allowed to employ filters in the console solely for the purpose of verifying the query results. As part of your solution submission, please submit **query** along with its corresponding **output (result set)**.

HW-6 MongoDB

1. Insert a new city document into the "**HW6**" collection with the following details:
   City: "Bangalore"
   State ID: "KA"
   State Name: "Karnataka"
   Population: 884363
   Density: 7266

2. List the **names of cities** with a population greater than 1 million and less than 1.05 million, and **only** display city names.

3. Find the city with the **highest** population density, and **only** display city name and density value.

4. List the names of cities in **California** (state_id = "CA") with a population **greater** than 2,000,000 and **only** display city names.

5. **Count** the number of cities with a population density above 3000, and **only** display count value.

6. Calculate the **average** population for **New York** (state_id = “NY”), and **only** display state_id and avg population.

7. List any 3 cities name with a timezone of **“America/Los_Angeles"**

8. Count the number of cities that are **not incorporated** (false), and only display count value.

9. Count the number of cities in **Florida** (state_id = "FL") with population **less** than 1000 and **only** display count value.

10. Find the **lowest** population city in **Colorado** (state_id="CO"), and display county name, city name with density value.

The End.