
OpenCourseWare

Database

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Project 4 (MongoDB (3.3))



Statement

Exercise 1:

It is a mongoDB database of a blog where registered users publish blog posts.

- Each author has a name, a username and a Twitter account. In addition, users have an address (they only have one) and contact phone numbers (they can have several).
- The blog posts which are published by a single author of the blog have a title, a body, and a publication date. Each blog post can have different associated tags.
- In addition, each blog post can receive comments, registering the person who wrote it, the written comment and the date and time it was made.

The objective of this database is to store and retrieve information about blog posts in relation to their characteristics.

Do the following:

1. In order to describe the design of the scheme, explain some documents of the JSON.
2. Make inserts in the database such that when you will make the following queries, results are obtained.
3. Make the following statements:
 - 3.1. Retrieve all blog posts from the user with username "Mery123".
 - 3.2. Retrieve title of the blog posts that have the tag "MongoDB".
 - 3.3. Retrieve the comments of the blog posts of the user with username "John123" and with Twitter account @John123.
 - 3.4. Retrieve title of the blog posts that have been written in March 2020.
 - 3.5. Retrieve title of the blog posts that have been written by the user with username "Mery123" with any of the tags: "nosql", "database" or "mongoDB", and published in 2020.

Exercise 2:

In the project, you will use the zipcodes collection (source: media.mongodb.org/zips.json). Use `mongoimport` to load this data set into your mongod instance.

Each document in the zipcodes collection has the following form:

```
{
  "_id": "10280",
  "city": "NEW YORK",
  "state": "NY",
  "pop": 5574,
  "loc": [
    -74.016323,
    40.710537
  ]
}
```

- The **_id** field holds the zip code as a string.
 - The **city** field holds the city name. A city can have more than one zip code associated with it as different sections of the city can each have a different zip code.
 - The **state** field holds the two-letter state abbreviation.
 - The **pop** field holds the population.
 - The **loc** field holds the location as a latitude longitude pair.
1. Perform the following statements
 - 1.1. Retrieve all the zip codes in the city "Springfield". How many?
 - 1.2. Retrieve the number of cities in state "AR" with less than 2000 population
 - 1.3. Recover all zip codes whose name starts with "J"
 - 1.4. Recover all cities that have a population between 45000 and 50000. How many?
 - 1.5. Update the populations to 50000 for those cities that have a population between 45000 and 50000.

Requested information

Deliver a pdf document that includes the answers to both exercises.

- Exercise 1: schema description, insert statements, queries statements
- Exercise 2: import code, queries statements