

Lab 3: MongoDB

DSCI 551 – Fall 2024

Due: 11:59pm, 10/25, 2024, Friday

Points: 20

Consider an orders database with the following collections: categories, orders, products, reviews, and users. The contents of these collections are given to you in files, e.g., categories.json for the categories collection, etc.

You can import these collections into the orders database using mongoimport. For example,

```
mongoimport --file users.json --db orders --collection users --jsonArray
```

will import users.json as an users collection in the orders database.

Use the database, write a MongoDB function to answer each of the following questions. Show the output of each question.

- (1) Find orders that are shipped to Denver and have a status “pending”. Return id of such orders only (excluding _id too).
- (2) Find orders that contain two Bluetooth Speakers (product name). Return id of such orders only.
- (3) Find out, for each category, how many products of that category are in stock. Output the name of the category and the number only. No need to consider categories which do not have products listed in the products collection.
- (4) Find out names of products whose reviews contain keywords: “great” or “good” (case insensitive). Output names of products and their reviews only.
- (5) For each city (that appears in the users collection), find out the number of people who live in the city.
- (6) For each different status (e.g., shipped vs pending), find out how many orders are in that status and the total amount of the orders. Output the top-3 statuses ranked by the total amount (higher rank for larger amount).
- (7) Find orders shipped to Houston where an item has a price between \$10 and \$50(including) and quantity is greater than 1. Return id of such orders only.
- (8) Find out categories which do not have products listed in the products collection. Output the category names in the descending order.

- (9) For each category (by name), find out the total sales amount of products in that category. No need to consider categories that do not have products.
- (10) Find reviews of electronics (category). Return product descriptions and reviews only.

Submission Instructions:

1. Submit one **.txt** file with all your MongoDB queries and the outputs.
2. Clearly mark each question with its number. For each question, include the query and the output.
3. Late submission will not be accepted.
4. A 10% PENALTY will be applied if these submission instructions are not followed.