

## Lab 12: Intro to MongoDB

### Objective

The students should be able to understand the usage of:

- MongoDB data retrieval queries.

### Submission Requirements

**Compile your queries and screenshot of the output in a word document and upload it on LMS.** If the output is large, you may only take the screenshot such that it covers one screen.

### Structure of 'restaurants' collection:

```
{
  "address": {
    "building": "1007",
    "coord": [ -73.856077, 40.848447 ],
    "street": "Morris Park Ave",
    "zipcode": "10462"
  },
  "borough": "Bronx",
  "cuisine": "Bakery",
  "grades": [
    { "date": { "$date": 1393804800000 }, "grade": "A", "score": 2 },
    { "date": { "$date": 1378857600000 }, "grade": "A", "score": 6 },
    { "date": { "$date": 1358985600000 }, "grade": "A", "score": 10 }
  ],
  { "date": { "$date": 1322006400000 }, "grade": "A", "score": 9 },
  { "date": { "$date": 1299715200000 }, "grade": "B", "score": 14 }
  ],
  "name": "Morris Park Bake Shop",
  "restaurant_id": "30075445"
}
```

### MongoDB Queries

Follow the instructions in Lab 12A manual to setup the restaurants collection with the data and execute the following MongoDB queries.

1. Display all documents in the restaurant collection.
2. Display the restaurant\_id, name, borough and cuisine for all the documents in the collection.
3. Output restaurant\_id, name, borough and cuisine, but exclude the field "\_id" for all the documents in the collection.
4. Display all the restaurants which are in the borough named Bronx.
5. Display the count of restaurants in Bronx.
6. Find restaurants which gained atleast one score more than 90. Output the restaurant name.
7. Display restaurant names with score more than 80 but less than 100. *Hint: elemMatch*
8. Find the restaurants that have at least one grade with a score of less than 5.
9. Find documents where there is at least one grade with score 10 and at least one grade with grade 'A'. *hint: elemMatch and \$all*
10. Find complete information of restaurants that do not prepare any cuisine of 'American', have grade score more than 70 and latitude less than -65.75.  
*Hint: The coord is a pair of Lat, Long and array uses indexes starting from 0.*
11. Find restaurants which do not prepare any cuisine of 'American', achieved a grade point 'A' and do not belong to the borough Brooklyn. The document must be displayed according to the cuisine in descending order.
12. Display the restaurant Id, name, borough and cuisine for those restaurants which contain 'Wil' as first three letters for its name. Cater for wil, WIL and other cases.
13. Find the first 3 documents for those restaurants which contain exactly 'ces' as last three letters for its name. Show names, borough and cuisine.
14. Find the restaurant Id, name, borough and cuisine for those restaurants which contain 'reg' as three letters somewhere in its name.
15. Find the restaurants which belong to the borough Bronx and prepared either American or Chinese dishes. Use \$or operator.
16. Find the name, borough and cuisine for those restaurants which are not belonging to the borough Staten Island or Queens or Bronx or Brooklyn. Use \$nin operator.
17. Find the restaurant name, borough and building for those restaurants which prepared cuisines excluding 'American' and 'Chinese' or restaurant name begins with 'Wil'.
18. Find the restaurant name, and grades for those restaurants which achieved a grade of "A" and scored 11 on an ISODate "2014-08-11T00:00:00Z" among many of survey dates.
19. Show only the restaurant name and address for those restaurants where 2nd element of coord array contains a value which is more than 42 and upto 52.
20. Find the name of all the restaurants in ascending order
21. Find the restaurants that have a grade with a score of 2 and a grade with a score of 6.
22. Find the restaurants that have a grade with a score of 2 or a grade with a score of 6 and are located in the borough of Manhattan or Brooklyn. Additionally, their cuisine is not American or Chinese.