

STAT 4260 – Databases
Spring 2018

Assignment 9 – [45 points]

The following questions are based on the **restaurants** collection, which has the following structure:

```
{
  "_id" : ObjectId("5ace6d5a4d30ae8b3c8a8f7b"),
  "address" : {
    "building" : "1007",
    "coord" : [
      -73.856077,
      40.848447
    ],
    "street" : "Morris Park Ave",
    "zipcode" : "10462"
  },
  "borough" : "Bronx",
  "cuisine" : "Bakery",
  "grades" : [
    {
      "date" : ISODate("2014-03-03T00:00:00Z"),
      "grade" : "A",
      "score" : 2
    },
    {
      "date" : ISODate("2013-09-11T00:00:00Z"),
      "grade" : "A",
      "score" : 6
    },
    {
      "date" : ISODate("2013-01-24T00:00:00Z"),
      "grade" : "A",
      "score" : 10
    },
    {
      "date" : ISODate("2011-11-23T00:00:00Z"),
      "grade" : "A",
      "score" : 9
    },
    {
      "date" : ISODate("2011-03-10T00:00:00Z"),
      "grade" : "B",
      "score" : 14
    }
  ],
  "name" : "Morris Park Bake Shop",
  "restaurant_id" : "30075445"
}
```

*Provided by w3resource website

*if you are trying to import the collection, use **mongoimport** right after starting **mongod** but before **mongo**

This assignment should be completed using a single MongoDB find statement. Please do this to make it easier for the grader and try to separate sections of code by using new lines whenever possible.

[-4pts] Electronic submission

Grading standards: *Questions are all or nothing and worth 2pts unless otherwise noted*

1. [1pt] Write a query to display all the documents in the collection.
2. [1pts] Write a query to display the fields restaurant_id, name, borough and cuisine for all the documents in the collection.
3. [1pts] Write a query to display the fields restaurant_id, name, borough and zipcode, but exclude the field _id for all the documents in the collection.
4. [1pt] Write a query to display all the restaurants which are in the borough Bronx.
5. [1pts] Write a query to display the first 5 restaurants which are in the borough Bronx.
6. Write a query to display all the restaurants who achieved a score more than 90
7. Write a query to display all the restaurants who achieved a score more than 80 but less than 100.
8. [1pts] Write a query to display all the restaurants which are located in a latitude value less than -95.754168.
9. Write a query to display all the restaurants that do not prepare any cuisine of 'American', their grade score is more than 70, and latitude less than -65.754168.
10. Write a query to display all the restaurants that do not prepare any cuisine of 'American', achieved a grade point 'A' and belong to the borough Brooklyn.
11. Write a query to display the restaurant id, name, borough, and cuisine for those restaurants which contain 'Wil' as their first three letters for its name.
Hint – See <https://docs.mongodb.com/manual/reference/operator/query/regex/#examples>
12. Write a query to display the restaurant id, name, borough, and cuisine for those restaurants which contain 'ces' as their last three letters for its name.
Hint – See <https://docs.mongodb.com/manual/reference/operator/query/regex/#examples>
13. Write a query to display the restaurant id, name, borough, and cuisine for those restaurants which contain 'Reg' somewhere within its name. (case sensitive)
Hint – See <https://docs.mongodb.com/manual/reference/operator/query/regex/#examples>
14. Write a query to display all the restaurants which belong to the borough Bronx and prepared either American or Chinese dishes.
15. Write a query to display the restaurant Id, name, borough and cuisine for those restaurants which belong to the borough Staten Island, Queens, Bronx or Brooklyn.

16. Write a query to display the restaurant Id, name, borough and cuisine for those restaurants which do not belong to the borough Staten Island, Queens, Bronx or Brooklyn.
17. Write a query to display the restaurant id, name, borough, and cuisine for those restaurants which received a score which is not more than 10.
18. Write a query to display the restaurant id, name, borough, and cuisine for those restaurants which begin with 'Wil' and don't prepare 'American' and 'Chinese'.
Hint – See <https://docs.mongodb.com/manual/reference/operator/query/regex/#examples>
19. Write a query to display the restaurant id, name, and grades for those restaurants which achieved a grade of 'A' and scored 11 on an ISODate "2014-08-11T00:00:00Z".
20. Write a query to display the restaurant id, name, and grades for those restaurants where the 2nd element of the grades array contains a grade of 'A' and scored 9 on an ISODate "2014-08-11T00:00:00Z".
21. Write a query to display the restaurant id, name, address and geographical location for those restaurants where the 2nd element of the coord array contains a value which is more than 42 and up to 52.
22. [1pt] Write a query to arrange the name of the cuisine in ascending order and then by borough in descending order.
23. [1pt] Write a query to display all the addresses containing a street.
24. Write a query to display the restaurant id, name, and grades for those restaurants which return 0 as a remainder after dividing the score by 7.