



UNIVERSITAT DE
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Master in Fundamental Principles of Data Science

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MongoDB Query

Do at home

1) Run the following command and start mongoDB using docker

docker run -p 27017:27017 -v <an empty folder path to store data>:/data/db mongo

Make sure to replace ***<an empty folder path to store data>*** with an actual folder path in your disk.

2) Install MongoDB Compass

<https://docs.mongodb.com/compass/master/install/>

The mongo shell

- The mongo shell is an interactive JavaScript interface to MongoDB. You can use the mongo shell to query and update data as well as perform administrative operations.
- The mongo shell is included as part of the MongoDB Server installation. MongoDB also provides the mongo shell as a standalone package.
- You can run mongo shell without any command-line options to connect to a MongoDB instance running on your localhost with default port 27017:

```
mongo
```

The mongo shell

- To explicitly specify the port, include the `--port` command-line option.

```
mongo --port 28015
```

- You can use the command-line option `--host` `<host>:<port>`. For example, to connect to a MongoDB instance running on a remote host machine:

```
mongo --host mongodb0.example.com:28015
```

- You can use the `--username` `<user>` and `--password`, `--authenticationDatabase` `<db>` command-line options:

```
mongo --username alice --password --authenticationDatabase admin --host  
mongodb0.examples.com --port 28015
```

The mongo shell

- To display the database you are using, type `db`. The operation should return `test`, which is the default database.
- To switch databases, issue the `use <db>` helper, as in the following example:

```
use restaurants
```

Lets Query

- Download the restaurants data virtual campus.

https://campusvirtual.ub.edu/pluginfile.php/5320526/mod_lesson/intro/restaurants.zip

- Use MongoDB Compass for the following
 1. Create a database as ***ub***
 2. Create a collection as ***restaurants***
 3. Unzip and import the restaurants.json in the collection ***restaurants***.

Lets Query

Use Mongo Shell to run these queries

- Write a MongoDB query to display the fields `restaurant_id`, `name`, `borough` and `cuisine` for all the documents in the collection `restaurant`.
- Write a MongoDB query to display the fields `restaurant_id`, `name`, `borough` and `cuisine`, but exclude the field `_id` for all the documents in the collection `restaurant`.
- Write a MongoDB query to display all the restaurant which is in the borough `Bronx`.

Solution

```
db.restaurants.find({}, {"restaurant_id" :  
1, "name":1, "borough":1, "cuisine" :1});
```

```
db.restaurants.find({}, {"restaurant_id" :  
1, "name":1, "borough":1, "cuisine" :1, "_id":0});
```

```
db.restaurants.find({"borough": "Bronx"});
```

Lets Query

- Write a MongoDB query to display the first 5 restaurant which is in the borough Bronx.
- Write a MongoDB query to display the next 5 restaurants after skipping first 5 which are in the borough Bronx.
- Write a MongoDB query to find the restaurants who achieved a score more than 90.
- Write a MongoDB query to find the restaurants that achieved a score, more than 80 but less than 100.

Solution

- `db.restaurants.find({"borough": "Bronx"}).limit(5);`
- `db.restaurants.find({"borough": "Bronx"}).skip(5).limit(5);`
- `db.restaurants.find({grades : { $elemMatch: {"score": {$gt : 90}}}});`
- `db.restaurants.find({grades : { $elemMatch: {"score": {$gt : 80 , $lt : 100}}}});`

Lets Query

Write a MongoDB query to find the restaurants that do not prepare any cuisine of 'American' and their grade score more than 70 and latitude less than -65.754168.

```
db.restaurants.find(  
  {$and:  
    [  
      {"cuisine" : {$ne : "American "}},  
      {"grades.score" : {$gt : 70}},  
      {"address.coord" : {$lt : -65.754168}}  
    ]  
  }  
);
```

```
db.restaurants.find(  
  {  
    "cuisine" : {$ne : "American "},  
    "grades.score" : {$gt: 70},  
    "address.coord" : {$lt : -65.754168}  
  }  
);
```

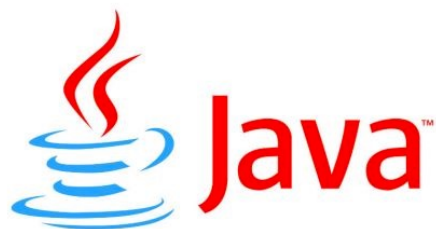
Lets Query

- Write a MongoDB query to find the restaurants which contain 'Wil' as first three letters for its name.
- Write a MongoDB query to find the restaurants which contain 'ces' as last three letters for its name.
- Write a MongoDB query to find the restaurants which contain 'Reg' as three letters somewhere in its name.
- Write a MongoDB query to find the restaurants which belong to the borough Bronx and prepared either American or Chinese dish.

Solution

- `db.restaurants.find({name: /^Wil/});`
- `db.restaurants.find({name: /ces$/});`
- `db.restaurants.find({"name": /. *Reg. */});`
- `db.restaurants.find(
 {
 "borough": "Bronx" ,
 $or : [
 { "cuisine" : "American " },
 { "cuisine" : "Chinese" }
]
 }
);`

Connectors and Drivers



Pymongo

```
import pymongo
```

```
myclient =  
pymongo.MongoClient("mongodb://localhost:27017/")
```

```
mydb = myclient["restaurants"]
```

```
mycol = mydb["restaurants "]
```

Home work: Use Pymongo to run all the queries we tried in class today.

Work at home

- <https://university.mongodb.com/courses/M001>
- Chapter 4 and 5