Notes on MongoDB

Homework # 6

- Assigned on Saturday, April 13
- Modified on Sunday evening, April 14
  - Downloaded before Sunday at 11;00 p.m.?
    - Delete the file and DOWNLOAD again

- Objective: gives students exposure and hands-on practice using MongoDB (a NoSQL database designed for handling Big Data.)

Notes on MongoDB

MongoDB is a NoSQL "Document" database.

- Stores collections of documents in a key:value pair format
- MongoDB is NOT Relational
- MongoDB does not store data in tables
- MongoDB does not use the SQL query language
- Community edition is free
- MongoDB uses a JS-like query language

Homework # 6 Overview

Steps:

1. Review some of the tutorial links to get familiar with the MongoDB world
2. Download and install the MongoDB software, community edition
3. Execute “Task 1” of the assignment
   - Create a database, Drop a database
   - Create a collection, Drop a collection
   - Insert a document, Query a document
   - Update a document, Delete a document

Homework # 6 Overview

Steps:

4. Execute Task 2 of the assignment
   - Download the sample JSON dataset “primer-data.json” from Moodle
   - Import the dataset into Mongo
     - NOTE: This is done at the OS command line level, NOT from within the Mongo command line interface
   - Name your collection “restaurants”
   - Write and run MongoDB queries to answer five problem questions

Homework # 6 Overview

Steps:

5. Schedule your interview grading session for next week, April 22 - 26
   - Slots will be posted in Moodle for Week 15
   - Schedule your slot with the professor or one of the graders
   - Bring a laptop to your interview grading session
   - Be prepared to show your grader your working MongoDB database
   - Be prepared to demonstrate your successful queries (problems 1-5 in the assignment)

Homework # 6 Overview

Steps:

5. Schedule your interview grading session for next week, April 22 - 26
   - Do NOT miss your interview grading session. There will be no opportunity to make up a missed session.
   - If you do not have a laptop, borrow one that can run MongoDB
   - Be prepared to run 1 or 2 queries “ad hoc” to demonstrate your knowledge of MongoDB and its query language

Homework # 6 Overview

MongoDB Query language tips

```
db.restaurants.find()
db.restaurants.find().pretty()
db.restaurants.find({"cuisine":"Irish"})
db.restaurants.find({"cuisine":"Irish"}).count()
db.restaurants.find({"name":"Twins Pub"})
db.restaurants.find({"borough":"Queens"}).count()

db.restaurants.aggregate([{$match:{"cuisine":"Irish"}}])

db.restaurants.aggregate([{$match:{"cuisine":"Irish"}},
       {$project: {_id:0,name:1,borough:1}}])
```

https://docs.mongodb.com/manual/reference/operator/aggregation/#aggregation-expression-operators

Homework # 6 Overview

MongoDB Query language tips – aggregate functions:

`$gt, $gte, $lt, $lte`

`$group, $sum, $avg, $min, $max`

`$sort, $limit`

`$in` (if a value is in an array)

`$unwind` (deconstructs an array into individual values)

`$project` (lists elements to appear in output)