

## Lab 2: Starting with MongoDB

**Due date:** January 16, 11:59pm.

### Lab Assignment

#### Assignment Preparation

This is an individual lab. I expect every person to complete it without consulting others.

This is a short lab to give you some familiarity with MongoDB's CRUD operations and with the `db.<collection>.find` command.

#### Assignment

Each of you have access to the MongoDB server running on `ambari-head.csc.calpoly.edu`. On this server, each of you is given a database under your own name (i.e., the name of the database coincides with your MongoDB account name) for which you are granted the `dbOwner` role - i.e., full control over the content. As part of this lab assignment you will create a number of collections in your database, and will demonstrate the contents of these collections.

**Part 1. Data Upload.** Create nine collections in your database as described above. One of the collections will store a small slice of data from the Lab 1 Iowa liquor sales dataset. Another collection will store the Iowa county population data. The remaining seven collections will store the outputs of your seven Lab 1 programs. Specifically, create the following collections in your database:

Collection name	Content
<code>sales</code>	First 10 JSON objects from <code>iowa.json</code> (Lab 1 file)
<code>counties</code>	The entirety of <code>counties.json</code> file
<code>summary</code>	The full output of your <code>liquorAggregate.py</code> program
<code>stores</code>	The full output of your <code>storeAccounting.py</code> program
<code>network</code>	The full output of your <code>distribution.py</code> program
<code>vodka</code>	The full output of your <code>vodkas.py</code> program
<code>liquor</code>	The full output of your <code>categorySales.py</code> program
<code>leader</code>	The full output of your <code>leaderboard.java</code> program
<code>stats</code>	The full output of your <code>countyStats.java</code> program

You can conduct data upload in any way you want, as long as you are using actual MongoDB `db.<collection>.insert()` (or similar) commands.

**Part 2. Dataset display.** Using Linux's `script` command (see `man` page for it for instructions on how to use it - it is not too complicated, and we will have in-class demos that use this command), create a log of a MongoDB session during which you do the following<sup>1</sup>:

- Authenticate your account against the `admin` database.
- Switch to the database carrying your account name.
- Report the full contents of each of the nine repositories you created.
- exit MongoDB.

Call your log file `mongo.<loginId>.log`, where `<loginid>` is your MongoDB account name.

**Part 3. Four simple queries.** Using the Linux's `script` command, create a log file a MongoDB session during which you do the following<sup>2</sup>:

- Authenticate your account against the `admin` database.
- Switch to the database carrying your account name.
- Write a MongoDB `find()` query that outputs the list of counties (as unmodified JSON objects from the `counties` repository) with populations greater than 100,000 people<sup>3</sup>.
- Write a MongoDB `find()` query that outputs the total number of liquor vendors that provide wholesale services to Iowa's liquor stores (this is best done using `network` collection).

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<sup>1</sup>You are allowed to access the log file after it is complete, and remove your password from the authentication command(s) you used in the session.

<sup>2</sup>You are allowed to access the log file after it is complete, and remove your password from the authentication command(s) you used in the session.

<sup>3</sup>You may need to do some data conversion prior to creating the `counties` repository to make this work.

- Write a MongoDB `find()` query that reports sales statistics from the `stats` collection for Polk County.
- Write a MongoDB `find()` query that prints all liquor purchases of 10 bottles or more that were made from the vendor "Diageo Americas". Run this query against the `sales` collection. Report only the following attributes: store name, item description, bottles sold, sale in dollars.

Call your log file `queries.<loginId>.log`, where `<loginId>` is your mongoDB account name.

## Submission

Submit the following artefacts:

- README file containing your name and a detailed description of the process which you used to insert the data into your database.
- `mongo.<loginId>.log` file.
- `queries.<loginId>.log` file.

Use the following `handin` command.

```
$ handin dekhtyar lab2 <files>
```

Note, `ambari-head` does not have `handin` installed. Therefore, you will need to transfer your log files from the `ambari-head` server to one of the `unixN.csc.calpoly.edu` machines.

**Good Luck!**