CSP554—Big Data Technologies

Assignment #13

Worth: 5 points ALL EXTRA CREDIT

Due at the time you submit your final project or paper

Assignments should be uploaded via the Blackboard portal.

Set Up:

Follow the instructions "Installing and Starting MongoDB" included as a document as part of this assignment to set up MongoDB on a single AWS EC2 instance.

Download "mongoex.tar" (included as a file with the assignment) to your PC or MAC. Now, using "scp" copy this file to the EC2 instance. Review Section 1, steps 11 and 12 of the MongoDB installation instructions for more details (including finding the DNS address):

        scp -i emr-key-pair.pem ./mongoex.tar ubuntu@<Public DNS (IPv4)>:/home/ubuntu

If you follow the installation instructions above you should have one terminal window opened to your EC2 instance running MongoDB. If not, open one. It will be useful to open up a second terminal window and ssh into your MongoDB instance. This will allow you to edit various assignment files that you can then submit to be executed in the MongoDB shell.

In one terminal window (connected to your EC2 instance) enter the following command to unpack the tar file into some MongoDB demo files and the file "load.js":

        tar -xvf mongoex.tar

If you have not done so already start up a MongoDB shell (by entering "mongo") in one of the terminal windows connected to your MongoDB instance.

Now, in the MongoDB shell, create a database called "assignment" by entering the following into the MongoDB shell:

        use assignment;

This will set the shell variable 'db' to this new database.

Load a collection called 'unicorns' with sample data by executing the script load.js in the MongoDB shell as follows

        load('./load.js');

Note, look at the content of the script file (via the other terminal window you have opened to the EC2 instance) to see how each unicorn is described.

Confirm this has all worked by executing the following command in the MongoDB shell:

    db.unicorns.find();

Note, the files named "demo*.js" (also included in the mongoex.tar file) provide examples of how to operate in the unicorn collection. These are a good idea to review and understand.

Exercises:

Exercise 1) (1 point)
Write a command that finds all unicorns having weight less than 500 pounds. Include the code you executed and some sample output as the result of this exercise. Recall you can place the command, if you choose, into a file, say 'ex1.js' and execute it with the load command as above and similarly for the following exercises.

Exercise 2) (1 point)
Write a command that finds all unicorns who love apples. Hint, search for "apple". Include the code you executed and some sample output as the result of this exercise.

Exercise 3) (1 point)
Write a command that adds a unicorn with the following attributes to the collection. Note dob means "Date of Birth."

Attribute	Value(s)
name	Malini
dob	11/03/2008
loves	pears, grapes
weight	450
gender	F
vampires	23
horns	1

Include the code you executed to insert this unicorn into the collection along with the output of a find command showing it is in the collection.

Exercise 4) (1 point)
Write a command that updates the above record to add apricots to the list of things Malini loves. Include the code you executed and some sample output showing the addition.

Exercise 5) (1 point)
Write a command that deletes all unicorns with weight more than 600 pounds. Include the code you executed and some sample output as the result of this exercise.