

CMPE 226 Database Systems

Spring 2017
Instructor: Ron Mak

Assignment #9

Assigned: Tuesday, April 25
Due: Tuesday, May 2 at 11:59 pm
Team assignment, 100 points max

NoSQL database

The purpose of this assignment is to give your team experience working with a NoSQL database.

MongoDB

Download and install the MongoDB Community Edition at
<https://docs.mongodb.com/master/administration/install-community/>

Run the **mongod** (no 'b') database server in the background, and the **mongo** interactive command-line shell.

Create a MongoDB database, and create two collections in the database. Insert sample data into the collections. For example, you can create two collections based on two relational tables and their data from your team project.

For each collection:

- Pretty-print the contents of all its documents.
- Make three queries with various search criteria and sorting options.
- Make one query that does “pipeline” aggregation.
- Make one query that does aggregation using map-reduce.

What to turn in

Create a zip file named after your team (e.g., **Supercoders.zip**) containing:

- Your statements that populated your collections.
- Your queries and their output.
- Cut-and-paste into text files, or make screenshots.

Submit into Canvas: **Assignment #9**.

Rubrics

Criteria	Max points
<ul style="list-style-type: none">• MongoDB database and two collections.• Statements that populate both collections with sample data.• For each collection:<ul style="list-style-type: none">○ Pretty-print its documents.○ Three queries with various search criteria and sorting options.○ One query that does “pipeline” aggregation.○ One query that does aggregation using map-reduce.	<ul style="list-style-type: none">• 2 X 5 = 10• 2 X 5 = 10<ul style="list-style-type: none">○ 2 x 5 = 10○ 6 x 5 = 30○ 2 x 10 = 20○ 2 x 10 = 20

Artificial data generators

If you cannot obtain actual datasets, Google “test data generation tools” for tools you can use to generate artificial data for your tables.

Rubrics

Criteria	Max points
OLAP operations (SQL queries and text files or screen shots of results) <ul style="list-style-type: none">• Drill up and drill down (show three levels of aggregation)• Slice• Dice	90 <ul style="list-style-type: none">• 60• 15• 15
Dimensional model <ul style="list-style-type: none">• Star schema and database dump	10 <ul style="list-style-type: none">• 10