Notes on MongoDB

Homework # 6

- Assigned on Monday, December 3
- Due: Friday, December 13 at 11:59 p.m.

- 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 and study the tutorial links to get familiar with the MongoDB world and syntax of the Mongo query language
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

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Steps:

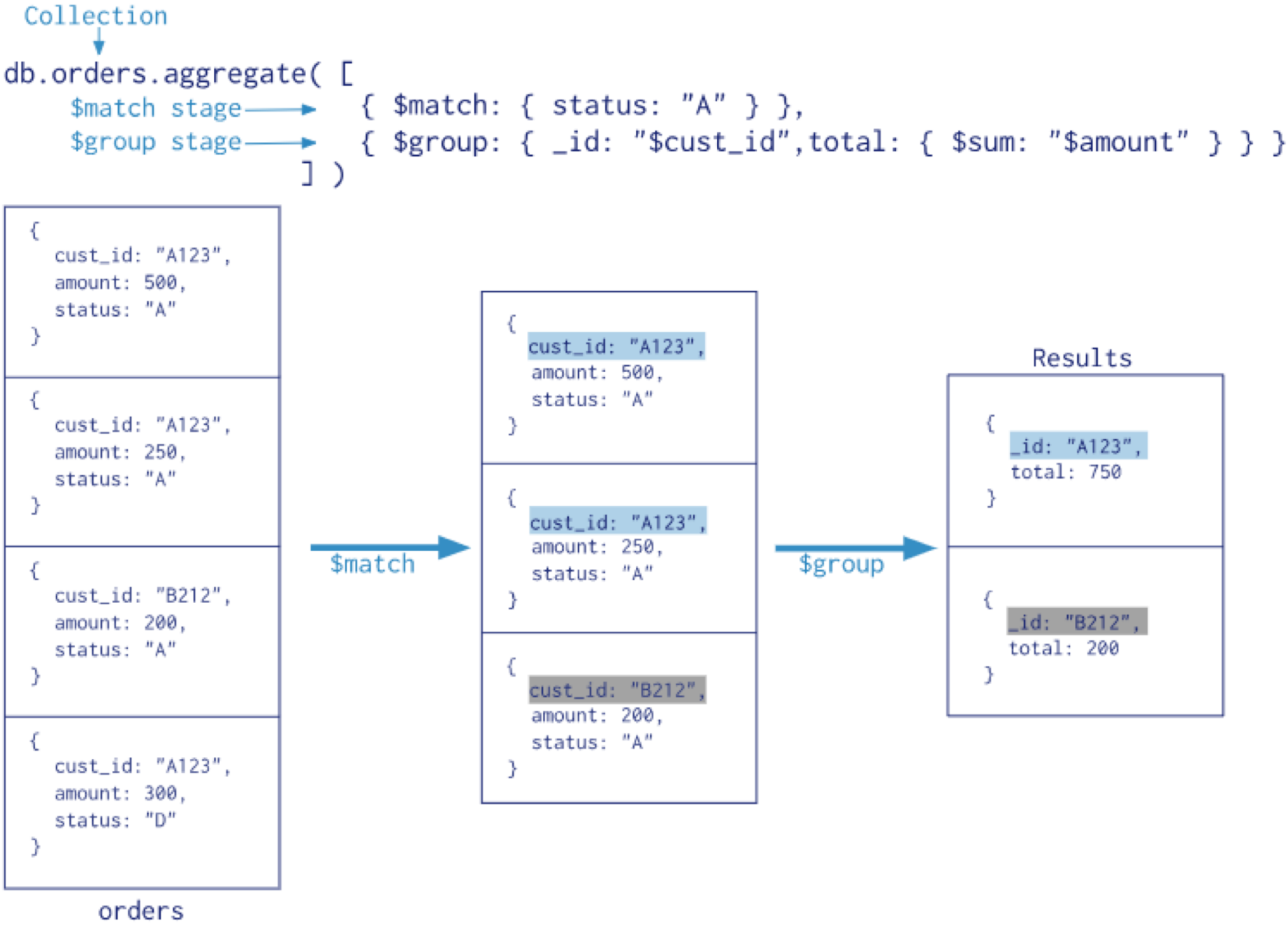
4. Execute Task 2 of the assignment
   - Download the sample JSON dataset “primer-data.json” from Moodle
   - Import the dataset into Mongo
     - NOTE: This is done at the OS command line level, NOT from within the Mongo command line interface
   - Name your collection “restaurants”
   - Write and run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

Homework # 6 Overview

MongoDB Query language tips

You must run the daemon ("mongod"), then open another terminal window and run "mongo" for running queries

```
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()
```


Collection
db.orders.aggregate([
$match stage
{ $match: { status: "A" } },
$group stage
{ $group: { _id: "$cust_id",total: { $sum: "$amount" } } }
])
{ cust_id: "A123", amount: 500, status: "A" }
{ cust_id: "A123", amount: 250, status: "A" }
{ cust_id: "B212", amount: 200, status: "A" }
{ cust_id: "A123", amount: 300, status: "D" }
orders
$match
{ cust_id: "A123", amount: 500, status: "A" }
{ cust_id: "A123", amount: 250, status: "A" }
{ cust_id: "B212", amount: 200, status: "A" }
$group
Results
{ _id: "A123", total: 750 }
{ _id: "B212", total: 200 }

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MongoDB Query language tips - aggregate

```
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

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MongoDB Query language tips – aggregate functions:

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

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

`$sort, $limit`

`$regex`

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

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

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