MongoDB -Aggregation Exercises

Import the zips.json file into your MongoDB. Database name is "population" and

collection name is "zipcodes".

mongoimport --db population --collection zipcodes --file zips.json

Atlanta Population

1. use db.zipcodes.find() to filter results to only the results where city is ATLANTA

and state is GA

* db. zipcodes.find({$and: [{city:"ATLANTA"}, {State:"GA"}]}).pretty()

1. use db.zipcodes.aggregate with $match to do the same as above.

* db.zipcodes.aggregate({$match:{$and:[{city:"ATLANTA"},{State:"GA"}]}})

1. use $group to count the number of zip codes in Atlanta.

* db.zipcodes.aggregate([{$match:{city:"ATLANTA"}},{$group:{\_id:"$city",totalzipcodes:{$sum:1}}}])

1. use $group to find the total population in Atlanta.

* db.zipcodes.aggregate([{$group:{\_id:"$ATLANTA",totalpopulation:{$sum:{$add:"$pop"}}}}])

Populations By State

1. use aggregate to calculate the total population for each state

* db.zipcodes.aggregate([{ $group: { \_id: "$state", totalPop: { $sum: "$pop" } } }])

1. sort the results by population, highest first

* db.zipcodes.aggregate([{ $group: { \_id: "$state", totalPop: { $sum: "$pop" } } },{$sort:{totalPop:-1}}])

1. limit the results to just the first 3 results. What are the top 3 states in population?

* db.zipcodes.aggregate([{ $group: { \_id: "$state", totalPop: { $sum: "$pop" } } },{$sort:{totalPop:-1}},{ $limit : 3 }])

Populations by City

1. use aggregate to calculate the total population for each city (you have to use

city/state combination). You can use a combination for the \_id of the $group: {

city: '$city', state: '$state' }

* db.zipcodes.aggregate([{ $group: { \_id: { state: "$state", city: "$city" }, pop: { $sum: "$pop" } } }])

2. sort the results by population, highest first

-> db.zipcodes.aggregate([{ $group: { \_id: { state: "$state", city: "$city" }, pop: { $sum: "$pop" } } },{$sort:{pop:-1}}])

3. limit the results to just the first 3 results. What are the top 3 cities in

population?

* db.zipcodes.aggregate([{ $group: { \_id: { state: "$state", city: "$city" }, pop: { $sum: "$pop" } } },{$sort:{pop:-1}},{$limit:3}])

1. What are the top 3 cities in population in Texas?

* db.zipcodes.aggregate([{$match:{state:"TX"}},{ $group: { \_id: "$city", totalPop: { $sum: "$pop" } } },{$sort:{totalPop:-1}},{$limit:3}])

Bonus

1. Write a query to get the average city population for each state.

-> db.zipcodes.aggregate([{ $group: { \_id: { state: "$state", city: "$city" }, pop: { $sum: "$pop" } } },{ $group: { \_id: "$\_id.state", avgCityPop: { $avg: "$pop" } } }] )

2. What are the top 3 states in terms of average city population

-> db.zipcodes.aggregate([{ $group: { \_id: { state: "$state", city: "$city" }, pop: { $sum: "$pop" } } },{ $group: { \_id: "$\_id.state", avgCityPop: { $avg: "$pop" } } },{$sort:{avgCityPop:-1}},{$limit:3}] )