# 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.zipcode.find({city:”ATLANTA”,state:”GA”})

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

db.zipcode aggregate([{$match:{city:”ATLANTA”,state:”GA”}}]);

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

db.zipcode.aggregate([{$group:{\_id: '$city'}},{$count:"ATLANTA"}])

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

db.zipcode.aggregate([{$group:{\_id:'$city', totalpop: {$sum:'$pop'}}},{$match:{\_id:"ATLANTA"}}])

# Populations By State

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

db.zipcode.aggregate([{$group:{\_id:"$state", totalpop:{ $sum: "$pop"}}}])

1. sort the results by population, highest first

db.zipcode.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.zipcode.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.zipcode.aggregate([{$group: {\_id:{state:"$state",city:"$city"},

... pop:{$sum:"$pop"}}}])

1. sort the results by population, highest first

db.zipcode.aggregate([{ $group: { \_id: { state: "$state", city: "$city" },

...pop: { $sum: "$pop" } } }, { $sort:{pop:-1} }])

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

db.zipcode.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?

# Bonus

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

db.zipcode.aggregate( [

{ $group: { \_id: { state: "$state", city: "$city" }, pop: { $sum: "$pop" } } },

{ $group: { \_id: "$\_id.state", avgCityPop: { $avg: "$pop" } } }])

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

db.zipcode.aggregate([

{ $group: { \_id: { state: "$state", city: "$city" }, pop: { $sum: "$pop" } } },

{ $group: { \_id: "$\_id.state", avgCityPop: { $avg: "$pop" } } },

{$sort:{avgCityPop:-1}}, {$limit:3}])