# 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({city:”ATLANTA”,state:”GA”})

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

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

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

db.zipcodes.aggregate([$group:{\_id:”ATLANTA,count;{$sum:1}}])

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

db.zipcodes.aggregate([{$match:{\_id:”ATLANTA}},{$group:{\_id:”$city”,totalpop:

{$sum:”$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”},totalpop:

{$sum:”$pop”}}}])

1. sort the results by population, highest first

db.zipcodes.aggregate([{$group:{\_id:”$city”},totalpop:{$sum:”$pop”}}},

{$sort:{totalpop:-1}}])

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

db.zipcodes.aggregate([{$group:{\_id:”$city”},totalpop:{$sum:”$pop”}}},

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

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

db.zipcodes.aggregate([{$group:{\_id:{city:”$city”,state:”$Texas”},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([{$group:{\_id:{city:”$city”,state:”$state”},avgpop:{$avg:”$pop”}}])

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

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