# 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

Steps:

Open mongoCompass->Create Connection->Create Database Name as population->Create collection name as zipcodes->click on import data(zip.json)->Execute queries

# Atlanta Population

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

db.zipcodes.aggregate([{$and:{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([{$match:{city:"ATALANTA"}},{$group:{\_id:"$\_id"}},{$count:"city"}])

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

# Populations By State

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

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

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

db.zipcodes.aggregate([{$match:{city:{$regex:"TEXAS"}}},{$limit:3}])

# Bonus

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

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

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

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