# 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"}]})

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([{$group:{\_id:{city:"ATLANTA"},zipcodescount:{$sum:1}}}])

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

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

# Populations By State

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

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

1. sort the results by population, highest first

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

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

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

1. sort the results by population, highest first

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

1. 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:"$city"},totalpopstatewise:{$sum:"$pop"}}},{$sort:{totalpopstatewise:-1}},{$limit:3}])

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

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

# Bonus

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

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

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

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