# 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([{$group:{\_id:{city:'ATLANTA'},count:{$sum:1}}}])

1. use $group to find the total population in Atlanta.
2. db.zipcodes.aggregate({$group:{\_id:{state:"ATLANTA"},totalpop:{$sum:"$pop"}}})

# Populations By State

1. use aggregate to calculate the total population for each state
2. db.zipcodes.aggregate({$group:{\_id:{state:'$state'},population:{$sum:'$pop'}}})

2.sort the results by population, highest first

1. db.zipcodes.aggregate({$group:{\_id:{state:'$state'},population:{$sum:'$pop'}}},{$sort:{population:-1}})

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

db.zipcodes.aggregate([{$group:{\_id:{state:'$state'},population:{$sum:'$pop'}}},{$sort:{population:-1}},{$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: '$state' }
2. db.zipcodes.aggregate({$group:{\_id:{city:’$city’,state:’$state’},population:{$sum:’$pop’}}})

2.sort the results by population, highest first

1. db.zipcodes.aggregate({$group:{\_id:{city:'$city',state:'$state'},population:{$sum:'$pop'}}},{$sort:{population:-1}})

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

1. db.zipcodes.aggregate({$group:{\_id:{city:'$city',state:'$state'},population:{$sum:'$pop'}}},{$sort:{population:-1}},{$limit:3})

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

# Bonus

1. Write a query to get the average city population for each state.
2. db.zipcodes.aggregate({$group:{\_id:{state:'$state', city:'$city'},average:{$avg:’$pop’}}})

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

db.zipcodes.aggregate({$group:{\_id:{state:'$state',city:'$city'},average:{$avg:'$pop'}}},{$limit:3})