# 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

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

db.zipcodes.aggregate()

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

db.zipcodes.aggregate([ {$group: {\_id: "$state"}}, {$count: "AL"} ])

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

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

# Populations By State

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

db.zipcodes.aggregate([ {$group: {\_id: {state: "$state"}}}, {$count: "Total Population is: "}])

1. sort the results by population, highest first

db.zipcodes.aggregate({$group: {\_id: "$pop"}}, {$sort: {\_id: -1}} )

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

db.zipcodes.aggregate( {$group: {\_id: {city: "$city", pop: "$pop"}}}, {$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: "$state"}}}, {$count: "Total Population is: "}])

1. sort the results by population, highest first

db.zipcodes.aggregate({$group: {\_id: "$pop"}}, {$sort: {\_id: -1}} )

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

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