**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 zip.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:”ATLANATA”,state:”GA”}}

])

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

db.zipcodes.aggregate( [

{$group:{\_id:{city:”ATLANATA”}}} ,

{$count:”zipcodes”}

] )

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

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

# Populations By State

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

db.zipcodes.aggregate( [{$group:{ \_id:”$state” , totalPopulation: { $sum: “$pop”}}}] )

1. sort the results by population, highest first

db.zipcodes.aggregate( [ { $sort : {pop:-1}}] )

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

db.zipcodes.aggregate( [ { $sort : {pop:-1}} , {$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”} , totalPopulation: { $sum: “$pop”}

}}

] )

1. sort the results by population, highest first

db.zipcodes.aggregate( [ { $sort : {pop:-1}}] )

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

db.zipcodes.aggregate( [ { $sort : {pop:-1}} , {$limit:3}] )

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

db.zipcodes.aggregate([{ $group:{ \_id: { state: “$state”, city: “$city”},

pop: { $sum:”$pop”} } }, { $sort:{pop:-1} },{$limit:3}])

# Bonus

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

Db.zipcodes.aggregate( [ {$group:{\_id:”$city”, average:{$avg:”$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}])