**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

**>>mongoimport --db population --collection zipcodes --drop --type json --file C:\Users\NAJAMPAL\Downloads\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({$and: [{city: “ATLANTA”},{state: “GA”}]})**

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

**>>db.zipcodes.aggregate({$match: {$and: [{city: “ATLANTA”},{state: “GA”}]}})**

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

**>>db.zipcodes.aggregate([{$match: {city: “ATLANTA”}},{$group: {\_id: “\_id”,count: {$sum: 1}}}])**

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

**>>db.zipcodes.aggregate([{$match: {city: “ATLANTA”}},{$group: {\_id: “\_id”,totalpopulation: {$sum: “$pop”},count: {$sum: 1}}}])**

# 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([{$group: {\_id: “$state”,totalpopulation: {$sum: “$pop”}}},{$sort:{totalpopulation: -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”},totalopulation: {$sum: “$pop”}},{$sort: {totalpopulation: -1}},{$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([{$group: {\_id: {city: “$city”,state: “$state”}},totalpopulation: {$sum: “$pop”}},{$sort: {totalpopulation: -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”,state: “$state”}},totalpopulation: {$sum: “$pop”}},{$sort: {totalpopulation: -1}}, {$limit: 3}])**

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

**>>db.zipcodes.aggregate([{$group: {\_id: {city: “$city”, state: “$Texas”},totalpopulation:{$sum:”$pop”}}},{$sort{totalpopullation: -1}},{$limit: 3}])**

# Bonus

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

**>>db.zipcodes.aggregate([{$group: {\_id: “$state”},totalpopulation: {$avg: “$pop”}}])**

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

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