**MongoDB -Aggregation Exercises**

**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"}]})

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

db.zipcodes.aggregate({$match:{city:"ATLANTA",state:"GA"}})

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

db.zipcodes.aggregate({$group:{\_id:{state:"ATLANTA"}}}.count()

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

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

1. sort the results by population, highest first

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' }

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

1. sort the results by population, highest first

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?

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

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

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

**Bonus**

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

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

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

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