**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({city:'ATLANTA',state:'GA'})

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

In aggregation tab select $match

Db.zipcodes.agregate([{

$match

{

city:'ATLANTA',

state:'GA'

}}])

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

Db.zipcodes.count({$group

{

\_id: "Atlanta",

count: {

$sum: 1

})

}

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

$group

{

\_id: "Atlanta",

total: {

$sum: "$pop"

}

}

**Populations By State**

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

db.zipcodes.aggregate([{

$group

{

\_id: "$state",

total: {

$sum: "$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?

Dp.zipcodes.aggregate([{

$sort

{

pop: -1

}

Save and add a next stage for limits

Limit is 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.aggregates([

$group

{

\_id:{

city:'$city',

state:'$state'

},

total: {

$sum: "$pop"

}

}])

1. sort the results by population, highest first

db.zipcodes.aggregates([

{

$sort

{

total: -1

}

And add a stage for limit

3

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

db.zipcodes.aggregates([

{

total: -1

}])

Save and add a next stage for limits

Limit is 3

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

db.zipcodes.aggregates([

$group

{

\_id: {city:'$city',state:'Texas'},

total: {

$sum: '$pop'

}

}

$sort

{

total: -1

}

$limit

3}])

**Bonus**

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

Db.zipcodes.aggregate({

$group

{

\_id: {city:'$city',

state:'$state'},

avgpop: {

$avg: "$pop"

}

}

}

])

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

$group

Db.zipcodes.aggregate(

{

\_id: {city:'$city',

state:'$state'},

avgpop: {

$avg: "$pop"

}

}

$sort

{

avgpop:-1

}

$limit

3}}])