**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({$match:{$and:[{city:"ATLANTA"},{state:"GA"}]}})

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

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

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

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

**Populations By State**

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

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

2. sort the results by population, highest first

db.zipcodes.aggregate([{$group:{\_id:"$state",count:{$sum:"$pop"}}},{$sort:{"count":-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",count:{$sum:"$pop"}}},{$sort:{"count":-1}},{$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:"$state"},count:{$sum:"$pop"}}}])

2. sort the results by population, highest first

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

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

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

**Bonus**

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

db.zipcodes.aggregate([{$group:{\_id:"$city",avgcitypop:{$avg:"$pop"}}},{sort:{"city":1}}])

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

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