

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

Q1 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"})`

Q2 Use `db.zipcodes.aggregate` with `$match` to do the same as above.

- `db.zipcodes.aggregate([{$match: {$and: [{city: "ATLANTA", state: "GA"}]}}])`

Q3 Use `$group` to count the number of zip codes in Atlanta.

- `db.zipcodes.aggregate([{$match: {city: "ATLANTA"}}, {$group: {_id: "$city", total: {$sum: 1}}}]`

Q4 use `$group` to find the total population in Atlanta.

- `db.zipcodes.aggregate([{$match: {city: "ATLANTA"}}, {$group: {_id: "$city", total_population: {$sum: "$pop"}}}]`

Populations By State

Q1. Use `aggregate` to calculate the total population for each state

- `db.zipcodes.aggregate([{$group: {_id: "$state", total_population: {$sum: "$pop"}}},])`

Q2 Sort the results by population, highest first

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

Q3 Limit the results to just the first 3 results. What are the top 3 states in population?

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

Populations by City

Q1 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"},total_population:{\$sum:"\$pop"}}}])

Q2 Sort the results by population, highest first

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

Q3 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"},total_population:{\$sum:"\$pop"}}},{sort:{total_population:-1}},{\$limit:3}])

Q4 What are the top 3 cities in population in Texas?

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

Bonus

Q1 Write a query to get the average city population for each state

Q2 What are the top 3 states in terms of average city population?

