

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.

```
Ans: db.zipcodes.find({city: "ATLANTA", state: "GA"})
```

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

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

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

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

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

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

Populations By State

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

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

2. sort the results by population, highest first

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

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

```
Ans:db.zipcodes.aggregate([{$group:{_id:"$state",total_population:{$sum:"$pop"}}},{$sort:{total_population:-1}},{$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' }

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

2. sort the results by population, highest first

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

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

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

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

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

Bonus

1. Write a query to get the average city population for each state.
2. What are the top 3 states in terms of average city population?