

MongoDB -Aggregation Exercises

Import the zips.json file into your MongoDB. Database name is "population" and collection name is "zipcodes".

Answer:

Step: Open mongoCompass>>Create Connection>>Create Database name as population>>Create collection name as zipcodes>>Now click on import data(zip.json)>>Execute the queries

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" }}],
{  city:"ATLANTA", state:"GA"  })
```

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

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

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

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

Populations By State

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

```
db.zipcodes.aggregate([
$match:{state:{$exists: true}},
{$group:{_id:"$state", "Total Pop":
{$sum:"$pop"}}}])
```

2. sort the results by population, highest first

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

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

```
db.zipcodes.aggregate( [ {$group: { _id : '$city'}},  
totalpop :{$sum: '$pop'}, {$sort: {totalpop: -1},{limit:3}}]
```

Populations by City

- 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:"$state"} ,  
"Total Pop":{$sum:"$pop"}}})
```

- sort the results by population, highest first

```
db.zipcodes.aggregate( [{ $group: { _id : '$city'}, totalpop :{$sum: '$pop'}},  
{$sort: {totalpop: -1}}]
```

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

```
db.zipcodes.aggregate( [ {$group: { _id : '$city'}}, totalpop :{$sum:  
'$pop'}, {$sort: {totalpop: -1},{limit:3}}]
```

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

```
db.zipcodes.aggregate([  
{$match: {city:{$regex:"TEXAS"}}},  
{$limit:3}])
```

Bonus

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

```
db.zipcodes.aggregate([{$group:{_id:"$city", avg:{$avg:"$pop"}}})
```

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

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```
db.zipcodes.aggregate([  
{$group:{_id:"$state", avg:{$avg:"$pop"}},  
{$sort:{pop:1}},{limit:3}])
```