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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

Sol: :- db.createCollection("population")
Now import the zip.json file using MongoDB Compass.

Atlanta Population

1. **use db.zipcodes.find() to filter results to only the results where city is ATLANTA and state is GA.**
   Sol: db.zipcodes.find({"city": "ATLANTA", "state": "GA"}).pretty()
2. **use db.zipcodes.aggregate with $match to do the same as above.**
   Sol: db.zipcodes.aggregate([{$match: {"city": "ATLANTA", "state": "GA"}}]).pretty()
3. **use $group to count the number of zip codes in Atlanta.**
   Sol: db.zipcodes.aggregate([{$match: {"city": "ATLANTA"}}, {$group:{_id:"$city", count:{$sum: 1}}}])
4. **use $group to find the total population in Atlanta.**
   Sol: db.zipcodes.aggregate([{$match: {"city": "ATLANTA"}}, {$group: {_id: "$city", totalPop: {$sum: "$pop"}}}])

Populations By State

1. **use aggregate to calculate the total population for each state**
   Sol: db.zipcodes.aggregate([{$group: {_id: "$state", totalPop: {$sum: "$pop"}}}])
2. **sort the results by population, highest first**
   Sol: db.zipcodes.aggregate([{$sort:{"pop": -1}}]).pretty()
3. **limit the results to just the first 3 results. What are the top 3 states in population?**
   Sol: db.zipcodes.aggregate([{$sort:{"pop": -1}},{$limit: 3}]).pretty()

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: '$state'}**
   Sol: db.zipcodes.aggregate([{$group: {_id: {state: "$state", city: "$city"}, pop: {$sum: "$pop"}}}])
2. **sort the results by population, highest first**
   Sol: db.zipcodes.aggregate([{ $group: {_id: {state: "$state", city: "$city"}, pop: {$sum: "$pop"}}}, {$sort: { pop: -1}}])

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

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

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

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

Bonus

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

   Sol: db.zipcodes.aggregate([{ $group: { _id: { state: "$state", city: "$city" }, pop: { $sum: "$pop"}}},{ $group: { _id: "$_id.state", avgCityPop: { $avg: "$pop"}}}]).pretty()

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

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

END!!