MongoDB -Aggregation Exercises

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Imported the zips.json file into MongoDB.

Database name is "population" and collection name is "zipcodes".

```
mongoimport --uri mongodb+srv://sai:admin@pinninti-sai-sukumar.lvnkc.mongodb.net/restaurants --collection adresses --type json --file C:\pop.json
```

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({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: "$_id"}},
{$count: "count"}
])
```

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

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

Populations By State

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

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

2. sort the results by population, highest first

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

2. sort the results by population, highest first

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

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

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

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

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

Bonus

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

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

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

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