#AGGREGATION ASSIGNMENT MONGODB

```
>mongod
>mongo
>mongoimport --db population --collection
zipcodes --file zips.json
>use population
```

#ATLANTA POPULATION

**Q: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"}]}).pretty()
```

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:"zipcount_Atlanta"}
])
```

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([
{$group:{_id:"$state",total_pop:{$sum:"$pop"}}},
])
```

2. sort the results by population, highest first

```
>db.zipcodes.aggregate([
{$group:{_id:"$state",total_pop:{$sum:"$pop"}}},
{$sort:{total_pop:-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",total_pop:{$sum:"$pop"}}},
```

{$sort:{total_pop:-1}},
{$limit:3
])

#POPULATION 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([
{$group:{_id:{city: '$city', state: '$state'
},total_pop:{$sum:"$pop"}}},
])

2. sort the results by population, highest first

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

3. 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_pop:{$sum:"$pop"}}},
{$sort:{total_pop:-1}},
{$limit:3}
])
```

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

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

#BONUS

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

```
>db.zipcodes.aggregate([
{$group:{_id:'$state' ,avg_pop:{$avg:"$pop"}}},
])
```

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

```
>db.zipcodes.aggregate([
{$group:{_id:'$state' ,avg_pop:{$avg:"$pop"}}},
{$sort:{avg_pop:-1}},
```

{$limit:3}
])