**MongoDB- Aggregation Exercises**

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

**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”})

1. **Use db.zipcodes.aggregate with $match to do the same as above.**

db.zipcodes.aggregate([{$match: {city: “ATLANTA”, state: “GA”}}])

1. **Use $group to count the number of zip codes in Atlanta**

db.zipcodes.aggregate([{$group: {city: “ATLANTA”, count:{$sum: zipcodes}}}])

1. **Use $group to find the total population of Atlanta**

db.zipcodes.aggregate([{$group: {city: “ATLANTA”, count:{$sum: pop}}}])

**Population by State:**

1. **Use aggregate to calculate the total population for each state**

db.zipcodes.aggregate([{$group: {total: {$sum: “$pop”}}} ] )

1. **Sort the results by population, highest first**

db.zipcodes.find({}, {“pop” : 1, \_id:0}) .sort ({“pop” : -1})

1. **Limit the results to just the first 3 results. What are the top 3 states in population?**

db.zipcodes.find({}, {“pop” : 1, \_id:0}) .sort ({“pop” : -1}. limit(3))

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

db.zipcodes.aggregate([{$group:{maxPopulation:{$max: “pop”}}}].limit(3))

**Bonus**

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

db.zipcodes.aggregate([{$group: {“city”, AverageValue: {$avg: “$pop”}}} ] )

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

db.zipcodes.aggregate([

{$group: {“state”}, {“city”, AveragePopulation: {$avg: “pop”}}}

])