**MongoDB-Aggregation Exercises**

**Atlanta Population**

1. db.zipcodes.find({"city": "ATLANTA","state": "GA"}).pretty();
2. db.zipcodes.aggregate([{$match:{"city": "ATLANTA","state": "GA"}}]);
3. db.zipcodes.aggregate([{$match:{city:"ATLANTA"}}, {$group: {\_id: {\_id:"$\_id"}}}, {$count: "zipcodes"} ]);
4. db.zipcodes.aggregate([ {$match:{city:"ATLANTA"}}, {$group:{\_id:"$city",totalpop:{$sum:"$pop"}}}]);

**Populations By State**

1. db.zipcodes.aggregate([{$group: {\_id: "$state",totalpopulation:{$sum: "$pop"}}}]);
2. db.zipcodes.aggregate([{$sort: {"pop": -1}}]);
3. db.zipcodes.aggregate([{$group: {\_id: "$state",totalpop: {$sum: "$pop"}}},{$sort: {totalpop: -1}},{$limit: 3}]);

**Population By City**

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

**Bonus**

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