ASSIGNMENT 2

1. MongoDB Enterprise atlas-d9658j-shard-0:PRIMARY> db.zipcodes.find({city:"ATLANTA", state:"GA"})

{ "\_id" : "30303", "city" : "ATLANTA", "loc" : [ -84.388846, 33.752504 ], "pop" : 1845, "state" : "GA" }

{ "\_id" : "30305", "city" : "ATLANTA", "loc" : [ -84.385145, 33.831963 ], "pop" : 19122, "state" : "GA" }

{ "\_id" : "30306", "city" : "ATLANTA", "loc" : [ -84.351418, 33.786027 ], "pop" : 20081, "state" : "GA" }

{ "\_id" : "30307", "city" : "ATLANTA", "loc" : [ -84.335957, 33.769138 ], "pop" : 16330, "state" : "GA" }

{ "\_id" : "30308", "city" : "ATLANTA", "loc" : [ -84.375744, 33.771839 ], "pop" : 8549, "state" : "GA" }

{ "\_id" : "30309", "city" : "ATLANTA", "loc" : [ -84.388338, 33.798407 ], "pop" : 14766, "state" : "GA" }

{ "\_id" : "30310", "city" : "ATLANTA", "loc" : [ -84.423173, 33.727849 ], "pop" : 34017, "state" : "GA" }

{ "\_id" : "30311", "city" : "ATLANTA", "loc" : [ -84.470219, 33.722957 ], "pop" : 34880, "state" : "GA" }

{ "\_id" : "30312", "city" : "ATLANTA", "loc" : [ -84.378125, 33.746749 ], "pop" : 17683, "state" : "GA" }

{ "\_id" : "30313", "city" : "ATLANTA", "loc" : [ -84.39352, 33.76825 ], "pop" : 8038, "state" : "GA" }

{ "\_id" : "30314", "city" : "ATLANTA", "loc" : [ -84.425546, 33.756103 ], "pop" : 26649, "state" : "GA" }

2. MongoDB Enterprise atlas-d9658j-shard-0:PRIMARY> db.zipcodes.aggregate([{$match:{city:"ATLANTA",state:"GA"}}])

{ "\_id" : "30303", "city" : "ATLANTA", "loc" : [ -84.388846, 33.752504 ], "pop" : 1845, "state" : "GA" }

{ "\_id" : "30305", "city" : "ATLANTA", "loc" : [ -84.385145, 33.831963 ], "pop" : 19122, "state" : "GA" }

{ "\_id" : "30306", "city" : "ATLANTA", "loc" : [ -84.351418, 33.786027 ], "pop" : 20081, "state" : "GA" }

{ "\_id" : "30307", "city" : "ATLANTA", "loc" : [ -84.335957, 33.769138 ], "pop" : 16330, "state" : "GA" }

{ "\_id" : "30308", "city" : "ATLANTA", "loc" : [ -84.375744, 33.771839 ], "pop" : 8549, "state" : "GA" }

{ "\_id" : "30309", "city" : "ATLANTA", "loc" : [ -84.388338, 33.798407 ], "pop" : 14766, "state" : "GA" }

{ "\_id" : "30310", "city" : "ATLANTA", "loc" : [ -84.423173, 33.727849 ], "pop" : 34017, "state" : "GA" }

{ "\_id" : "30311", "city" : "ATLANTA", "loc" : [ -84.470219, 33.722957 ], "pop" : 34880, "state" : "GA" }

{ "\_id" : "30312", "city" : "ATLANTA", "loc" : [ -84.378125, 33.746749 ], "pop" : 17683, "state" : "GA" }

3.

MongoDB Enterprise atlas-d9658j-shard-0:PRIMARY> db.zipcodes.aggregate([{$match:{city:"ATLANTA"}},{$group:{\_id:"$\_id"}},{$count:"zipcodes in atlanta"}])

{ "zipcodes in atlanta" : 41 }

MongoDB Enterprise atlas-d9658j-shard-0:PRIMARY> db.zipcodes.aggregate([{$group:{\_id:{\_id:"$\_id",city:"$city"}}},{$match:{"\_id.city":"ATLANTA"}},{$count:"city"}])

{ "city" : 41 }

db.zipcodes.aggregate([{$match:{city:"ATLANTA"}},{$group:{\_id:"$city",count:{$sum:1}}}])

{ \_id: 'ATLANTA', count: 41 }

4.

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

{ \_id: '\_id', total: 630046 }

POPULATIONS BY STATE

1.

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

{ \_id: 'GA', total: 6478216 }

{ \_id: 'TN', total: 4876457 }

{ \_id: 'WA', total: 4866692 }

{ \_id: 'WI', total: 4891769 }

{ \_id: 'DE', total: 666168 }

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

{ \_id: 'CA', total: 29754890 }

{ \_id: 'NY', total: 17990402 }

{ \_id: 'TX', total: 16984601 }

{ \_id: 'FL', total: 12686644 }

{ \_id: 'PA', total: 11881643 }

{ \_id: 'IL', total: 11427576 }

{ \_id: 'OH', total: 10846517 }

{ \_id: 'MI', total: 9295297 }

{ \_id: 'NJ', total: 7730188 }

{ \_id: 'NC', total: 6628637 }

{ \_id: 'GA', total: 6478216 }

{ \_id: 'VA', total: 6181479 }

{ \_id: 'MA', total: 6016425 }

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

{ \_id: 'CA', total: 29754890 }

{ \_id: 'NY', total: 17990402 }

{ \_id: 'TX', total: 16984601 }

POPULATIONS BY CITY

1.

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

{ \_id: { city: 'DONORA', state: 'PA' }, total: 5928 }

{ \_id: { city: 'ADMIRE', state: 'KS' }, total: 172 }

{ \_id: { city: 'WATERTOWN', state: 'WI' }, total: 25240 }

{ \_id: { city: 'LORAINE', state: 'ND' }, total: 1455 }

{ \_id: { city: 'WINTER HARBOR', state: 'ME' }, total: 1157 }

2.

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

{ \_id: { city: 'CHICAGO', state: 'IL' }, total: 2452177 }

{ \_id: { city: 'BROOKLYN', state: 'NY' }, total: 2300504 }

{ \_id: { city: 'LOS ANGELES', state: 'CA' }, total: 2102295 }

{ \_id: { city: 'HOUSTON', state: 'TX' }, total: 2095918 }

{ \_id: { city: 'PHILADELPHIA', state: 'PA' }, total: 1610956 }

{ \_id: { city: 'NEW YORK', state: 'NY' }, total: 1476790 }

{ \_id: { city: 'BRONX', state: 'NY' }, total: 1209548 }

3.

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

{ \_id: { city: 'CHICAGO', state: 'IL' }, total: 2452177 }

{ \_id: { city: 'BROOKLYN', state: 'NY' }, total: 2300504 }

{ \_id: { city: 'LOS ANGELES', state: 'CA' }, total: 2102295 }

4.

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

{ \_id: { city: 'HOUSTON', state: 'TX' }, total: 2095918 }

{ \_id: { city: 'DALLAS', state: 'TX' }, total: 940191 }

{ \_id: { city: 'SAN ANTONIO', state: 'TX' }, total: 811792 }

BONUS:

1.

db.zipcodes.aggregate([{$group:{\_id:{state:"$state"},average:{$avg:"$pop"}}}])

{ \_id: { state: 'AL' }, average: 7126.255731922399 }

{ \_id: { state: 'DE' }, average: 12569.207547169812 }

{ \_id: { state: 'MS' }, average: 7088.749311294766 }

{ \_id: { state: 'WI' }, average: 6832.079608938548 }

{ \_id: { state: 'KS' }, average: 3461.937062937063 }

{ \_id: { state: 'HI' }, average: 13852.8625 }

{ \_id: { state: 'TN' }, average: 8378.792096219931 }

{ \_id: { state: 'GA' }, average: 10201.914960629922 }

{ \_id: { state: 'WA' }, average: 10055.148760330578 }

{ \_id: { state: 'MT' }, average: 2544.420382165605 }

{ \_id: { state: 'ND' }, average: 1632.4092071611253 }

{ \_id: { state: 'IN' }, average: 8201.384615384615 }

{ \_id: { state: 'IA' }, average: 3011.301518438178 }

{ \_id: { state: 'AK' }, average: 2793.3230769230768 }

{ \_id: { state: 'PA' }, average: 8149.275034293552 }

2.

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

{ \_id: { state: 'DC' }, average: 25287.5 }

{ \_id: { state: 'CA' }, average: 19627.236147757256 }

{ \_id: { state: 'FL' }, average: 15779.407960199005 }