**Mongo DB Assignment – 2**

**Atlanta Population:**

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

[ { \_id: 'ATLANTA', count\_field: 41 } ]

1. Use $group to find the total population in Atlanta.

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

[ { \_id: 'ATLANTA', total\_pop: 630046 } ]

**Populations By State:**

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

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

[

{ \_id: 'VT', totalpop: 562758 },

{ \_id: 'DC', totalpop: 606900 },

{ \_id: 'AL', totalpop: 4040587 },

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

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

{ \_id: 'OK', totalpop: 3145585 },

{ \_id: 'AZ', totalpop: 3665228 },

{ \_id: 'NV', totalpop: 1201833 },

{ \_id: 'HI', totalpop: 1108229 },

{ \_id: 'UT', totalpop: 1722850 },

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

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

{ \_id: 'IN', totalpop: 5544136 },

{ \_id: 'SD', totalpop: 695397 },

{ \_id: 'MT', totalpop: 798948 },

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

{ \_id: 'KS', totalpop: 2475285 },

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

{ \_id: 'MO', totalpop: 5110648 },

{ \_id: 'WY', totalpop: 453528 }

]

1. Sort the results by population, highest first.

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

[

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

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

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

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

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

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

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

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

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

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

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

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

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

{ \_id: 'IN', total\_pop: 5544136 },

{ \_id: 'MO', total\_pop: 5110648 },

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

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

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

{ \_id: 'MD', total\_pop: 4781379 },

{ \_id: 'MN', total\_pop: 4372982 }

]

1. Limit the result 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}])

[

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

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

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

]

**Populations By City:**

1. Use aggregation to calculate total population for each city.

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

[

{ \_id: 'LARTO', total\_pop: 5507 },

{ \_id: 'HORNELL', total\_pop: 14311 },

{ \_id: 'CALIFORNIA', total\_pop: 20914 },

{ \_id: 'WELLS BRIDGE', total\_pop: 232 },

{ \_id: 'HARROD', total\_pop: 4897 },

{ \_id: 'CAPUTA', total\_pop: 578 },

{ \_id: 'ALDER CREEK', total\_pop: 74 },

{ \_id: 'WILCOX', total\_pop: 2390 },

{ \_id: 'KEELING', total\_pop: 2651 },

{ \_id: 'HARRELLSVILLE', total\_pop: 1046 },

{ \_id: 'WARREN', total\_pop: 276817 },

{ \_id: 'RECTOR', total\_pop: 3891 },

{ \_id: 'HAVILAND', total\_pop: 1936 },

{ \_id: 'MAZA', total\_pop: 1800 },

{ \_id: 'EROS', total\_pop: 2296 },

{ \_id: 'SPRING GLEN', total\_pop: 288 },

{ \_id: 'BIG CABIN', total\_pop: 2634 },

{ \_id: 'SAN SIMEON', total\_pop: 500 },

{ \_id: 'ANTIOCH', total\_pop: 123107 },

{ \_id: 'GENTRY', total\_pop: 5401 }

]

1. Sort the results by population, highest first.

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

[

{ \_id: 'CHICAGO', total\_pop: 2452177 },

{ \_id: 'BROOKLYN', total\_pop: 2341387 },

{ \_id: 'HOUSTON', total\_pop: 2123053 },

{ \_id: 'LOS ANGELES', total\_pop: 2102295 },

{ \_id: 'PHILADELPHIA', total\_pop: 1639862 },

{ \_id: 'NEW YORK', total\_pop: 1476790 },

{ \_id: 'BRONX', total\_pop: 1209548 },

{ \_id: 'SAN DIEGO', total\_pop: 1054316 },

{ \_id: 'DALLAS', total\_pop: 999042 },

{ \_id: 'DETROIT', total\_pop: 967468 },

{ \_id: 'PHOENIX', total\_pop: 902249 },

{ \_id: 'MIAMI', total\_pop: 848436 },

{ \_id: 'COLUMBUS', total\_pop: 825448 },

{ \_id: 'SAN JOSE', total\_pop: 817497 },

{ \_id: 'SAN ANTONIO', total\_pop: 813188 },

{ \_id: 'WASHINGTON', total\_pop: 780954 },

{ \_id: 'BALTIMORE', total\_pop: 738846 },

{ \_id: 'JACKSONVILLE', total\_pop: 735505 },

{ \_id: 'SAN FRANCISCO', total\_pop: 723993 },

{ \_id : 'CLEVELAND', total\_pop: 687451 }

]

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

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

[

{ \_id: 'CHICAGO', total\_pop: 2452177 },

{ \_id: 'BROOKLYN', total\_pop: 2341387 },

{ \_id: 'HOUSTON', total\_pop: 2123053 }

]

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

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

[

{ \_id: 'HOUSTON', total\_pop: 2095918 },

{ \_id: 'DALLAS', total\_pop: 940191 },

{ \_id: 'SAN ANTONIO', total\_pop: 811792 }

]

**Bonus:**

1. Write a query to get the average city population for each state.
2. What are the top 3 states in terms of the city population.