**ASSIGNMENT 2**

**1->** db.zipcodes.find({city:"ATLANTA"})

{ "\_id" : "14808", "city" : "ATLANTA", "loc" : [ -77.480091, 42.556269 ], "pop" : 472, "state" : "NY" }

{ "\_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" }

**2- >** db.zipcodes.aggregate([{$match:{city:"ATLANTA"}}])

{ "\_id" : "14808", "city" : "ATLANTA", "loc" : [ -77.480091, 42.556269 ], "pop" : 472, "state" : "NY" }

{ "\_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" }

**3->** db.zipcodes.aggregate([{$group:{\_id:{pop:"$pop",city:"$ATLANTA"}}}])

{ "\_id" : { "pop" : 39515 } }

{ "\_id" : { "pop" : 2674 } }

{ "\_id" : { "pop" : 20185 } }

{ "\_id" : { "pop" : 28813 } }

{ "\_id" : { "pop" : 7921 } }

{ "\_id" : { "pop" : 257 } }

{ "\_id" : { "pop" : 7562 } }

{ "\_id" : { "pop" : 41958 } }

{ "\_id" : { "pop" : 18087 } }

{ "\_id" : { "pop" : 23010 } }

{ "\_id" : { "pop" : 21972 } }

{ "\_id" : { "pop" : 3792 } }

{ "\_id" : { "pop" : 56676 } }

{ "\_id" : { "pop" : 25909 } }

{ "\_id" : { "pop" : 7012 } }

{ "\_id" : { "pop" : 9780 } }

{ "\_id" : { "pop" : 20949 } }

{ "\_id" : { "pop" : 54994 } }

{ "\_id" : { "pop" : 13114 } }

{ "\_id" : { "pop" : 11371 } }

**4)** MongoDB Enterprise atlas-xhli14-shard-0:PRIMARY> db.zipcode.aggregate([ {$match:{city:"ATLANTA"}}, {$group:{\_id:"$city",total:{$sum:"$pop"}}} ])

{ "\_id" : "ATLANTA", "total" : 630046 }

**POPULATION BY STATE-**

**1 ---** > db.zipcodes.aggregate( [

... { $group: { \_id: "$state", totalPop: { $sum: "$pop" } } },

... { $match: { totalPop: { $gte: 10\*1000\*1000 } } }

... ] )

{ "\_id" : "FL", "totalPop" : 12686644 }

{ "\_id" : "PA", "totalPop" : 11881643 }

{ "\_id" : "CA", "totalPop" : 29754890 }

{ "\_id" : "NY", "totalPop" : 17990402 }

{ "\_id" : "TX", "totalPop" : 16984601 }

{ "\_id" : "OH", "totalPop" : 10846517 }

{ "\_id" : "IL", "totalPop" : 11427576 }

2)pop for each state use sort highest first

**2)** MongoDB Enterprise atlas-xhli14-shard-0:PRIMARY> db.zipcode.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 }

{ "\_id" : "IN", "total" : 5544136 }

{ "\_id" : "MO", "total" : 5110648 }

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

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

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

{ "\_id" : "MD", "total" : 4781379 }

{ "\_id" : "MN", "total" : 4372982 }

**3)** limit the results for just first 3 results.What are the top 3 states in population

MongoDB Enterprise atlas-xhli14-shard-0:PRIMARY> db.zipcode.aggregate([

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

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

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

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

**City Population**

**1-->** db.zipcodes.aggregate({$group:{\_id:{city:'$city',state:"$state"},population:{$sum:'$pop'}}})

{ "\_id" : { "city" : "HOLY CROSS", "state" : "IA" }, "population" : 1139 }

{ "\_id" : { "city" : "ELLIOTT", "state" : "ND" }, "population" : 3078 }

{ "\_id" : { "city" : "EAGLE CREEK", "state" : "IN" }, "population" : 39659 }

{ "\_id" : { "city" : "NEW LISBON", "state" : "NY" }, "population" : 19 }

{ "\_id" : { "city" : "NORTH BRANCH", "state" : "MN" }, "population" : 6024 }

{ "\_id" : { "city" : "WEST MILWAUKEE", "state" : "WI" }, "population" : 48228 }

{ "\_id" : { "city" : "BURDICK", "state" : "KS" }, "population" : 230 }

{ "\_id" : { "city" : "BLADEN", "state" : "NE" }, "population" : 579 }

{ "\_id" : { "city" : "ELLENDALE", "state" : "MN" }, "population" : 1051 }

{ "\_id" : { "city" : "BAKER", "state" : "LA" }, "population" : 19623 }

{ "\_id" : { "city" : "BANDYTOWN", "state" : "WV" }, "population" : 500 }

{ "\_id" : { "city" : "OZAN", "state" : "AR" }, "population" : 1695 }

{ "\_id" : { "city" : "WELTY", "state" : "OK" }, "population" : 286 }

{ "\_id" : { "city" : "AVERY", "state" : "ID" }, "population" : 113 }

{ "\_id" : { "city" : "SLIDELL", "state" : "LA" }, "population" : 64208 }

{ "\_id" : { "city" : "SLICKVILLE", "state" : "PA" }, "population" : 318 }

{ "\_id" : { "city" : "GRADY", "state" : "NM" }, "population" : 265 }

{ "\_id" : { "city" : "SUNBURG", "state" : "MN" }, "population" : 408 }

{ "\_id" : { "city" : "WOODBRIDGE", "state" : "CT" }, "population" : 7802 }

{ "\_id" : { "city" : "PORT BYRON", "state" : "NY" }, "population" : 4391 }

Type "it" for more

**2- >** db.zipcodes.aggregate({$group:{\_id:{city:"$city",state:"$state"},population:{$sum:'$pop'}}},{$sort:{population:-1}})

{ "\_id" : { "city" : "CHICAGO", "state" : "IL" }, "population" : 2452177 }

{ "\_id" : { "city" : "BROOKLYN", "state" : "NY" }, "population" : 2300504 }

{ "\_id" : { "city" : "LOS ANGELES", "state" : "CA" }, "population" : 2102295 }

{ "\_id" : { "city" : "HOUSTON", "state" : "TX" }, "population" : 2095918 }

{ "\_id" : { "city" : "PHILADELPHIA", "state" : "PA" }, "population" : 1610956 }

{ "\_id" : { "city" : "NEW YORK", "state" : "NY" }, "population" : 1476790 }

{ "\_id" : { "city" : "BRONX", "state" : "NY" }, "population" : 1209548 }

{ "\_id" : { "city" : "SAN DIEGO", "state" : "CA" }, "population" : 1049298 }

{ "\_id" : { "city" : "DETROIT", "state" : "MI" }, "population" : 963243 }

{ "\_id" : { "city" : "DALLAS", "state" : "TX" }, "population" : 940191 }

{ "\_id" : { "city" : "PHOENIX", "state" : "AZ" }, "population" : 890853 }

{ "\_id" : { "city" : "MIAMI", "state" : "FL" }, "population" : 825232 }

{ "\_id" : { "city" : "SAN JOSE", "state" : "CA" }, "population" : 816653 }

**{ "\_id" : { "city" : "SAN ANTONIO", "state" : "TX" }, "population" : 811792 }**

{ "\_id" : { "city" : "BALTIMORE", "state" : "MD" }, "population" : 733081 }

{ "\_id" : { "city" : "SAN FRANCISCO", "state" : "CA" }, "population" : 723993 }

{ "\_id" : { "city" : "MEMPHIS", "state" : "TN" }, "population" : 632837 }

{ "\_id" : { "city" : "SACRAMENTO", "state" : "CA" }, "population" : 628279 }

{ "\_id" : { "city" : "JACKSONVILLE", "state" : "FL" }, "population" : 610160 }

{ "\_id" : { "city" : "ATLANTA", "state" : "GA" }, "population" : 609591 }

Type "it" for more

**3-** db.zipcodes.aggregate({$group:{\_id:{city:"$city"},population:{$sum:'$pop'}}},{$sort:{population:-1}},{$limit:3})

{ "\_id" : { "city" : "CHICAGO" }, "population" : 2452177 }

{ "\_id" : { "city" : "BROOKLYN" }, "population" : 2341387 }

{ "\_id" : { "city" : "HOUSTON" }, "population" : 2123053 }

**4-**

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

{ "\_id" : "HOUSTON", "Population" : 2095918 }

{ "\_id" : "DALLAS", "Population" : 940191 }

{ "\_id" : "SAN ANTONIO", "Population" : 811792 }

>

**Bonus Part**

db.zipcodes.aggregate( [

... { $group: { \_id: { state: "$state", city: "$city" }, pop: { $sum: "$pop" } } },

... { $group: { \_id: "$\_id.state", avgCityPop: { $avg: "$pop" } } }

... ] )

{ "\_id" : "NH", "avgCityPop" : 5232.320754716981 }

{ "\_id" : "WI", "avgCityPop" : 7323.00748502994 }

{ "\_id" : "KY", "avgCityPop" : 4767.164721141375 }

{ "\_id" : "UT", "avgCityPop" : 9518.508287292818 }

{ "\_id" : "OH", "avgCityPop" : 12700.839578454332 }

{ "\_id" : "DC", "avgCityPop" : 303450 }

{ "\_id" : "SC", "avgCityPop" : 11139.626198083068 }

{ "\_id" : "RI", "avgCityPop" : 19292.653846153848 }

{ "\_id" : "MI", "avgCityPop" : 12087.512353706112 }

{ "\_id" : "ND", "avgCityPop" : 1645.0309278350514 }

{ "\_id" : "IA", "avgCityPop" : 3123.0821147356583 }

{ "\_id" : "MT", "avgCityPop" : 2593.987012987013 }

{ "\_id" : "IL", "avgCityPop" : 9954.334494773519 }

{ "\_id" : "MS", "avgCityPop" : 7524.023391812865 }

{ "\_id" : "WA", "avgCityPop" : 12258.670025188916 }

{ "\_id" : "FL", "avgCityPop" : 27400.958963282937 }

**2)** top 3 states in terms of avg population

MongoDB Enterprise atlas-xhli14-shard-0:PRIMARY> db.zipcode.aggregate([

... { "$group":{ "\_id":"$state", "total":{"$avg":"$pop"} } },{$sort:{"total":-1}},{$limit:3} ])

{ "\_id" : "DC", "total" : 25287.5 }

{ "\_id" : "CA", "total" : 19627.236147757256 }

{ "\_id" : "FL", "total" : 15779.407960199005 }