**MongoDB -Aggregation Exercises**

> use population

switched to db population

> show collections

zipcodes

> db.zipcodes.find({city:"ATLANTA",state:"GA"}).pretty()

{

"\_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"

}

{

"\_id" : "30315",

"city" : "ATLANTA",

"loc" : [

-84.380771,

33.705062

],

"pop" : 41061,

"state" : "GA"

}

{

"\_id" : "30316",

"city" : "ATLANTA",

"loc" : [

-84.333913,

33.721686

],

"pop" : 34668,

"state" : "GA"

}

{

"\_id" : "30317",

"city" : "ATLANTA",

"loc" : [

-84.31685,

33.749788

],

"pop" : 16395,

"state" : "GA"

}

{

"\_id" : "30318",

"city" : "ATLANTA",

"loc" : [

-84.445432,

33.786454

],

"pop" : 53894,

"state" : "GA"

}

{

"\_id" : "30319",

"city" : "ATLANTA",

"loc" : [

-84.335091,

33.868728

],

"pop" : 32138,

"state" : "GA"

}

{

"\_id" : "30324",

"city" : "ATLANTA",

"loc" : [

-84.354867,

33.820609

],

"pop" : 15044,

"state" : "GA"

}

{

"\_id" : "30326",

"city" : "ATLANTA",

"loc" : [

-84.358232,

33.848168

],

"pop" : 125,

"state" : "GA"

}

{

"\_id" : "30327",

"city" : "ATLANTA",

"loc" : [

-84.419966,

33.862723

],

"pop" : 18467,

"state" : "GA"

}

{

"\_id" : "30329",

"city" : "ATLANTA",

"loc" : [

-84.321402,

33.823555

],

"pop" : 17013,

"state" : "GA"

}

Type "it" for more

> db.zipcodes.aggregate({$match:{$and:[{city:"ATLANTA"},{state:"GA"}]}}).pretty()

{

"\_id" : "30303",

"city" : "ATLANTA",

"loc" : [

-84.388846,

33.752504

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"pop" : 1845,

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33.786454

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"state" : "GA"

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"city" : "ATLANTA",

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],

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"city" : "ATLANTA",

"loc" : [

-84.321402,

33.823555

],

"pop" : 17013,

"state" : "GA"

}

Type "it" for more

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

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

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

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

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

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

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

{ "\_id" : "MI", "totalpopulation" : 9295297 }

{ "\_id" : "MA", "totalpopulation" : 6016425 }

{ "\_id" : "ID", "totalpopulation" : 1006749 }

{ "\_id" : "MT", "totalpopulation" : 798948 }

{ "\_id" : "UT", "totalpopulation" : 1722850 }

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

{ "\_id" : "MS", "totalpopulation" : 2573216 }

{ "\_id" : "NV", "totalpopulation" : 1201833 }

{ "\_id" : "GA", "totalpopulation" : 6478216 }

{ "\_id" : "SD", "totalpopulation" : 695397 }

{ "\_id" : "OK", "totalpopulation" : 3145585 }

{ "\_id" : "AL", "totalpopulation" : 4040587 }

{ "\_id" : "HI", "totalpopulation" : 1108229 }

{ "\_id" : "VT", "totalpopulation" : 562758 }

{ "\_id" : "ND", "totalpopulation" : 638272 }

{ "\_id" : "CO", "totalpopulation" : 3293755 }

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

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

Type "it" for more

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

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

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

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

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

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

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

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

{ "\_id" : "MI", "totalpop" : 9295297 }

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

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

{ "\_id" : "GA", "totalpop" : 6478216 }

{ "\_id" : "VA", "totalpop" : 6181479 }

{ "\_id" : "MA", "totalpop" : 6016425 }

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

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

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

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

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

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

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

Type "it" for more

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

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

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

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

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

{ "\_id" : { "city" : "WEST BROWNSVILLE", "state" : "PA" }, "totalpop" : 9133 }

{ "\_id" : { "city" : "CARSON", "state" : "VA" }, "totalpop" : 1343 }

{ "\_id" : { "city" : "DACOMA", "state" : "OK" }, "totalpop" : 351 }

{ "\_id" : { "city" : "KYKOTSMOVI VILLA", "state" : "AZ" }, "totalpop" : 167 }

{ "\_id" : { "city" : "SANTA PAULA", "state" : "CA" }, "totalpop" : 28319 }

{ "\_id" : { "city" : "FORESTVILLE", "state" : "CA" }, "totalpop" : 7252 }

{ "\_id" : { "city" : "WYNNEWOOD", "state" : "PA" }, "totalpop" : 8285 }

{ "\_id" : { "city" : "BRYANT", "state" : "IN" }, "totalpop" : 1350 }

{ "\_id" : { "city" : "KENT", "state" : "OR" }, "totalpop" : 0 }

{ "\_id" : { "city" : "BLAINE", "state" : "WA" }, "totalpop" : 7057 }

{ "\_id" : { "city" : "WINCHESTER", "state" : "IN" }, "totalpop" : 8830 }

{ "\_id" : { "city" : "MABTON", "state" : "WA" }, "totalpop" : 3586 }

{ "\_id" : { "city" : "STANTON", "state" : "ND" }, "totalpop" : 720 }

{ "\_id" : { "city" : "WARREN", "state" : "CT" }, "totalpop" : 1278 }

{ "\_id" : { "city" : "MONT CLARE", "state" : "PA" }, "totalpop" : 1749 }

{ "\_id" : { "city" : "BANKSTON", "state" : "AL" }, "totalpop" : 651 }

{ "\_id" : { "city" : "FIVE POINTS", "state" : "AL" }, "totalpop" : 2400 }

{ "\_id" : { "city" : "CHAMPLAIN", "state" : "VA" }, "totalpop" : 187 }

{ "\_id" : { "city" : "SHAW", "state" : "MS" }, "totalpop" : 3596 }

{ "\_id" : { "city" : "APPLETON", "state" : "WI" }, "totalpop" : 91117 }

Type "it" for more

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Type "it" for more

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

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

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

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

>

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

{ "\_id" : { "city" : "HOUSTON" }, "totalpop" : 2095918 }

{ "\_id" : { "city" : "DALLAS" }, "totalpop" : 940191 }

{ "\_id" : { "city" : "SAN ANTONIO" }, "totalpop" : 811792 }

>

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

{ "\_id" : { "city" : "SOUTH HAVEN", "state" : "MI" }, "averagepop" : 12604 }

{ "\_id" : { "city" : "SILSBEE", "state" : "TX" }, "averagepop" : 27117 }

{ "\_id" : { "city" : "BANGS", "state" : "TX" }, "averagepop" : 5681 }

{ "\_id" : { "city" : "WAITE PARK", "state" : "MN" }, "averagepop" : 5227 }

{ "\_id" : { "city" : "MARCY", "state" : "NY" }, "averagepop" : 7937 }

{ "\_id" : { "city" : "SANTA FE", "state" : "FL" }, "averagepop" : 9414 }

{ "\_id" : { "city" : "GREENVILLE", "state" : "ME" }, "averagepop" : 2054 }

{ "\_id" : { "city" : "EDMUNDS", "state" : "ND" }, "averagepop" : 624 }

{ "\_id" : { "city" : "MORO", "state" : "AR" }, "averagepop" : 1571 }

{ "\_id" : { "city" : "MONETTE", "state" : "AR" }, "averagepop" : 2008 }

{ "\_id" : { "city" : "BRAMWELL", "state" : "WV" }, "averagepop" : 762 }

{ "\_id" : { "city" : "ELWOOD", "state" : "NY" }, "averagepop" : 30333 }

{ "\_id" : { "city" : "ALMA", "state" : "NY" }, "averagepop" : 200 }

{ "\_id" : { "city" : "PROVINCETOWN", "state" : "MA" }, "averagepop" : 3561 }

{ "\_id" : { "city" : "LORETTO", "state" : "PA" }, "averagepop" : 2771 }

{ "\_id" : { "city" : "HILLSBORO", "state" : "KY" }, "averagepop" : 1981 }

{ "\_id" : { "city" : "MC CONNELSVILLE", "state" : "OH" }, "averagepop" : 4784 }

{ "\_id" : { "city" : "CADDO MILLS", "state" : "TX" }, "averagepop" : 3148 }

{ "\_id" : { "city" : "DEVILS ELBOW", "state" : "MO" }, "averagepop" : 1717 }

{ "\_id" : { "city" : "EMORY", "state" : "TX" }, "averagepop" : 3919 }

Type "it" for more

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

{ "\_id" : { "city" : "BELL GARDENS", "state" : "CA" }, "averagepop" : 99568 }

{ "\_id" : { "city" : "NORWALK", "state" : "CA" }, "averagepop" : 94188 }

{ "\_id" : { "city" : "ARLETA", "state" : "CA" }, "averagepop" : 88114 }