**Mongo DB aggregation**

**Atlanta Population**

> db.zipcodes.find({$and:[{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" }

{ "\_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"}]}}])

{ "\_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" }

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{ "\_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:{city:"ATLANTA"}},

... {$group:{\_id:"$city",zips:{$sum:1}}}])

{ "\_id" : "ATLANTA", "zips" : 41 }

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

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

**Population By State**

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

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

{ "\_id" : "LA", "Population" : 4217595 }

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

{ "\_id" : "NM", "Population" : 1515069 }

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

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

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

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

{ "\_id" : "WV", "Population" : 1793146 }

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

{ "\_id" : "OR", "Population" : 2842321 }

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

{ "\_id" : "AR", "Population" : 2350725 }

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

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

{ "\_id" : "SC", "Population" : 3486703 }

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

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

{ "\_id" : "DE", "Population" : 666168 }

{ "\_id" : "NH", "Population" : 1109252 }

Type "it" for more

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Type "it" for more

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

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

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

{ "\_id" : "TX", "Population" : 16984601 }]

**Populations By City**

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

{ "\_id" : { "city" : "RUMNEY", "state" : "NH" }, "Population" : 1912 }

{ "\_id" : { "city" : "WARNER", "state" : "OH" }, "Population" : 1900 }

{ "\_id" : { "city" : "WELLING", "state" : "OK" }, "Population" : 3149 }

{ "\_id" : { "city" : "PRIEST RIVER", "state" : "ID" }, "Population" : 4345 }

{ "\_id" : { "city" : "WOODVILLE", "state" : "WV" }, "Population" : 262 }

{ "\_id" : { "city" : "OLD STATION", "state" : "CA" }, "Population" : 213 }

{ "\_id" : { "city" : "BELLEVILLE", "state" : "NJ" }, "Population" : 34924 }

{ "\_id" : { "city" : "BULGER", "state" : "PA" }, "Population" : 1118 }

{ "\_id" : { "city" : "ROTHBURY", "state" : "MI" }, "Population" : 1618 }

{ "\_id" : { "city" : "EDISON", "state" : "NJ" }, "Population" : 84273 }

{ "\_id" : { "city" : "SIDNEY", "state" : "AR" }, "Population" : 743 }

{ "\_id" : { "city" : "WEST JORDAN", "state" : "UT" }, "Population" : 54737 }

{ "\_id" : { "city" : "MEADOWBROOK", "state" : "PA" }, "Population" : 14402 }

{ "\_id" : { "city" : "ROGERSON", "state" : "ID" }, "Population" : 92 }

{ "\_id" : { "city" : "CORALVILLE", "state" : "IA" }, "Population" : 12646 }

{ "\_id" : { "city" : "MAUNALOA", "state" : "HI" }, "Population" : 497 }

{ "\_id" : { "city" : "KENNEWICK", "state" : "WA" }, "Population" : 59822 }

{ "\_id" : { "city" : "LEIPSIC", "state" : "OH" }, "Population" : 4657 }

{ "\_id" : { "city" : "ALFRED STATION", "state" : "NY" }, "Population" : 1071 }

{ "\_id" : { "city" : "CANNON", "state" : "MS" }, "Population" : 3226 }

Type "it" for more

> 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

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

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

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

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

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

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

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

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

**Bonus**

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

{ "\_id" : { "city" : "ROSELLE", "state" : "IL" }, "avgCityPop" : 22626 }

{ "\_id" : { "city" : "SURRY", "state" : "NH" }, "avgCityPop" : 23882 }

{ "\_id" : { "city" : "SPRING LAKE", "state" : "NJ" }, "avgCityPop" : 9384 }

{ "\_id" : { "city" : "TOBIAS", "state" : "NE" }, "avgCityPop" : 464 }

{ "\_id" : { "city" : "DAYKIN", "state" : "NE" }, "avgCityPop" : 324 }

{ "\_id" : { "city" : "SUCCESS", "state" : "MO" }, "avgCityPop" : 210 }

{ "\_id" : { "city" : "DOLA", "state" : "OH" }, "avgCityPop" : 256 }

{ "\_id" : { "city" : "WORTHING", "state" : "SD" }, "avgCityPop" : 882 }

{ "\_id" : { "city" : "BATAVIA", "state" : "IL" }, "avgCityPop" : 19299 }

{ "\_id" : { "city" : "SPRING CHURCH", "state" : "PA" }, "avgCityPop" : 1291 }

{ "\_id" : { "city" : "BENTLEY", "state" : "KS" }, "avgCityPop" : 895 }

{ "\_id" : { "city" : "PEP", "state" : "NM" }, "avgCityPop" : 369 }

{ "\_id" : { "city" : "COURTLAND", "state" : "VA" }, "avgCityPop" : 3570 }

{ "\_id" : { "city" : "OJUS", "state" : "FL" }, "avgCityPop" : 14167 }

{ "\_id" : { "city" : "WILLISTON PARK", "state" : "NY" }, "avgCityPop" : 11057 }

{ "\_id" : { "city" : "BIRCHWOOD", "state" : "TN" }, "avgCityPop" : 2732 }

{ "\_id" : { "city" : "BROOKS", "state" : "MN" }, "avgCityPop" : 350 }

{ "\_id" : { "city" : "NORRIS", "state" : "SD" }, "avgCityPop" : 322 }

{ "\_id" : { "city" : "SULPHUR", "state" : "KY" }, "avgCityPop" : 466 }

{ "\_id" : { "city" : "LAKEWOOD", "state" : "IL" }, "avgCityPop" : 415 }

Type "it" for more

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

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

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

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