**MongoDB Assignment-2**

Name: Nishar Ahamed

**ATLANTA POPULATION**

**1.** MongoDB Enterprise atlas-18tcwy-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" }

{ "\_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" }

**2.** MongoDB Enterprise atlas-18tcwy-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" }

{ "\_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" }

**3.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$match: {city: "ATLANTA"}}, {$group: {\_id: "$city", count: {$sum: 1}}}])

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

**4.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$match: {city: "ATLANTA"}}, {$group: {\_id: "$city", totalPopulation: {$sum: "$pop"}}}])

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

**POPULATIONS BY STATE**

**1.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$group: {\_id: "$state", totalPopulation: {$sum: "$pop"}}}])

{ "\_id" : "AZ", "totalPopulation" : 3665228 }

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

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

{ "\_id" : "WY", "totalPopulation" : 453528 }

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

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

{ "\_id" : "ME", "totalPopulation" : 1226648 }

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

{ "\_id" : "KY", "totalPopulation" : 3675484 }

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

{ "\_id" : "DC", "totalPopulation" : 606900 }

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

{ "\_id" : "CT", "totalPopulation" : 3287116 }

{ "\_id" : "NE", "totalPopulation" : 1578139 }

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

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

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

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

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

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

**2.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$group: {\_id: "$state", totalPopulation: {$sum: "$pop"}}}, {$sort: {totalPopulation: -1}}])

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**3.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$group: {\_id: "$state", totalPopulation: {$sum: "$pop"}}}, {$sort: {totalPopulation: -1}}, {$limit: 3}])

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

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

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

**POPULATIONS BY CITY**

**1.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$group: {\_id: {city: "$city", state: "$state"}, totalPopulation: {$sum: "$pop"}}}])

{ "\_id" : { "city" : "TELLICO PLAINS", "state" : "TN" }, "totalPopulation" : 6459 }

{ "\_id" : { "city" : "AUXIER", "state" : "KY" }, "totalPopulation" : 2461 }

{ "\_id" : { "city" : "KING CITY", "state" : "MO" }, "totalPopulation" : 1382 }

{ "\_id" : { "city" : "BROOKLINE", "state" : "NH" }, "totalPopulation" : 2410 }

{ "\_id" : { "city" : "CLARKSBURG", "state" : "PA" }, "totalPopulation" : 1369 }

{ "\_id" : { "city" : "PONDEROSA", "state" : "NM" }, "totalPopulation" : 1092 }

{ "\_id" : { "city" : "WATERFORD", "state" : "VA" }, "totalPopulation" : 264 }

{ "\_id" : { "city" : "POTEAU", "state" : "OK" }, "totalPopulation" : 9466 }

{ "\_id" : { "city" : "KALAMAZOO", "state" : "MI" }, "totalPopulation" : 172224 }

{ "\_id" : { "city" : "MOORELAND", "state" : "OK" }, "totalPopulation" : 2047 }

{ "\_id" : { "city" : "ARLINGTON", "state" : "MN" }, "totalPopulation" : 2997 }

{ "\_id" : { "city" : "BONHAM", "state" : "TX" }, "totalPopulation" : 9003 }

{ "\_id" : { "city" : "EAGLE POINT", "state" : "OR" }, "totalPopulation" : 7468 }

{ "\_id" : { "city" : "SEMINOLE", "state" : "AL" }, "totalPopulation" : 606 }

{ "\_id" : { "city" : "NIXA", "state" : "MO" }, "totalPopulation" : 11346 }

{ "\_id" : { "city" : "MURRAY", "state" : "KY" }, "totalPopulation" : 20388 }

{ "\_id" : { "city" : "GOLTRY", "state" : "OK" }, "totalPopulation" : 436 }

{ "\_id" : { "city" : "FARNHAM", "state" : "VA" }, "totalPopulation" : 1356 }

{ "\_id" : { "city" : "GONZALES", "state" : "TX" }, "totalPopulation" : 11297 }

{ "\_id" : { "city" : "GLEASON", "state" : "TN" }, "totalPopulation" : 3307 }

**2.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$group: {\_id: {city: "$city", state: "$state"}, totalPopulation: {$sum: "$pop"}}}, {$sort: {totalPopulation: -1}}])

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**3.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$group: {\_id: {city: "$city", state: "$state"}, totalPopulation: {$sum: "$pop"}}}, {$sort: {totalPopulation: -1}}, {$limit: 3}])

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

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

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

**4.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$match: {state: "TX"}}, {$group: {\_id: "$city", totalPopulation: {$sum: "$pop"}}}, {$sort: {totalPopulation: -1}}, {$limit: 3}])

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

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

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

**BONUS**

**1.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$group: {\_id: "$state", avgCityPopulation: {$avg: "$pop"}}}])

{ "\_id" : "AZ", "avgCityPopulation" : 13574.918518518518 }

{ "\_id" : "TX", "avgCityPopulation" : 10164.333333333334 }

{ "\_id" : "MO", "avgCityPopulation" : 5141.496981891348 }

{ "\_id" : "WY", "avgCityPopulation" : 3239.4857142857145 }

{ "\_id" : "NV", "avgCityPopulation" : 11556.086538461539 }

{ "\_id" : "MA", "avgCityPopulation" : 12692.879746835442 }

{ "\_id" : "ME", "avgCityPopulation" : 2991.8243902439026 }

{ "\_id" : "ID", "avgCityPopulation" : 4126.020491803279 }

{ "\_id" : "KY", "avgCityPopulation" : 4543.243510506799 }

{ "\_id" : "NJ", "avgCityPopulation" : 14315.162962962962 }

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

{ "\_id" : "MI", "avgCityPopulation" : 10611.069634703197 }

{ "\_id" : "CT", "avgCityPopulation" : 12498.539923954373 }

{ "\_id" : "NE", "avgCityPopulation" : 2749.3710801393727 }

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

{ "\_id" : "NY", "avgCityPopulation" : 11279.248902821317 }

{ "\_id" : "MT", "avgCityPopulation" : 2544.420382165605 }

{ "\_id" : "UT", "avgCityPopulation" : 8404.146341463415 }

{ "\_id" : "CO", "avgCityPopulation" : 7955.929951690821 }

{ "\_id" : "GA", "avgCityPopulation" : 10201.914960629922 }

**2.** MongoDB Enterprise atlas-18tcwy-shard-0:PRIMARY> db.zipcodes.aggregate([{$group: {\_id: "$state", avgCityPopulation: {$avg: "$pop"}}}, {$sort: {avgCityPopulation: -1}}, {$limit: 3}])

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

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

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