

MONGODB ASSIGNMENT 2

Name: Shruti Bhosale

1) Atlanta Population:

```
> 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" }
Type "it" for more
>
```

```
> 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" }
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{ "_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
> it
{ "_id" : "30330", "city" : "ATLANTA", "loc" : [ -84.434735, 33.70645 ], "pop" : 643, "state" : "GA" }
{ "_id" : "30331", "city" : "ATLANTA", "loc" : [ -84.520468, 33.72241 ], "pop" : 38185, "state" : "GA" }
{ "_id" : "30334", "city" : "ATLANTA", "loc" : [ -84.388188, 33.74715 ], "pop" : 0, "state" : "GA" }
{ "_id" : "30336", "city" : "ATLANTA", "loc" : [ -84.510028, 33.78534 ], "pop" : 1228, "state" : "GA" }
{ "_id" : "30339", "city" : "ATLANTA", "loc" : [ -84.462879, 33.87125 ], "pop" : 11158, "state" : "GA" }
{ "_id" : "30342", "city" : "ATLANTA", "loc" : [ -84.376091, 33.884245 ], "pop" : 19057, "state" : "GA" }
{ "_id" : "30345", "city" : "ATLANTA", "loc" : [ -84.286961, 33.851347 ], "pop" : 19825, "state" : "GA" }
{ "_id" : "30346", "city" : "ATLANTA", "loc" : [ -84.333354, 33.926717 ], "pop" : 18, "state" : "GA" }
{ "_id" : "30349", "city" : "ATLANTA", "loc" : [ -84.481258, 33.605331 ], "pop" : 48116, "state" : "GA" }
{ "_id" : "30350", "city" : "ATLANTA", "loc" : [ -84.341146, 33.979471 ], "pop" : 24573, "state" : "GA" }
{ "_id" : "30360", "city" : "ATLANTA", "loc" : [ -84.271645, 33.937772 ], "pop" : 16023, "state" : "GA" }
>
```

```
> db.zipcodes.aggregate([{$match:{city:"ATLANTA"}},{$group:{_id:{city:"$city"},zipcode:"$ _id"}},{$count:"zipcode"}])
{ "zipcode" : 41 }
>
```

```
> db.zipcodes.aggregate([{$match:{city:"ATLANTA"}},{$group:{_id:{city:"$city"},pop:{$sum:"$pop"}}}])
{ "_id" : { "city" : "ATLANTA" }, "pop" : 630046 }
>
```

2)Population By State:

```
> db.zipcodes.aggregate({$group:{_id:'$state',population:{$sum:'$pop'}}})
{ "_id" : "IN", "population" : 5544136 }
{ "_id" : "DC", "population" : 606900 }
{ "_id" : "MT", "population" : 798948 }
{ "_id" : "KS", "population" : 2475285 }
{ "_id" : "NE", "population" : 1578139 }
{ "_id" : "AR", "population" : 2350725 }
{ "_id" : "SC", "population" : 3486703 }
{ "_id" : "UT", "population" : 1722850 }
{ "_id" : "WA", "population" : 4866692 }
{ "_id" : "MD", "population" : 4781379 }
{ "_id" : "CO", "population" : 3293755 }
{ "_id" : "HI", "population" : 1108229 }
{ "_id" : "AK", "population" : 544698 }
{ "_id" : "RI", "population" : 1003218 }
{ "_id" : "MO", "population" : 5110648 }
{ "_id" : "TX", "population" : 16984601 }
{ "_id" : "WY", "population" : 453528 }
{ "_id" : "CA", "population" : 29754890 }
{ "_id" : "MI", "population" : 9295297 }
{ "_id" : "NJ", "population" : 7730188 }
Type "it" for more
>
```



```
> db.zipcodes.aggregate([{$group:{_id:{state:"$state"},pop:{$sum:"$pop"}}},{$sort:{pop:-1}}])
{ "_id" : { "state" : "CA" }, "pop" : 29754890 }
{ "_id" : { "state" : "NY" }, "pop" : 17990402 }
{ "_id" : { "state" : "TX" }, "pop" : 16984601 }
{ "_id" : { "state" : "FL" }, "pop" : 12686644 }
{ "_id" : { "state" : "PA" }, "pop" : 11881643 }
{ "_id" : { "state" : "IL" }, "pop" : 11427576 }
{ "_id" : { "state" : "OH" }, "pop" : 10846517 }
{ "_id" : { "state" : "MI" }, "pop" : 9295297 }
{ "_id" : { "state" : "NJ" }, "pop" : 7730188 }
{ "_id" : { "state" : "NC" }, "pop" : 6628637 }
{ "_id" : { "state" : "GA" }, "pop" : 6478216 }
{ "_id" : { "state" : "VA" }, "pop" : 6181479 }
{ "_id" : { "state" : "MA" }, "pop" : 6016425 }
{ "_id" : { "state" : "IN" }, "pop" : 5544136 }
{ "_id" : { "state" : "MO" }, "pop" : 5110648 }
{ "_id" : { "state" : "WI" }, "pop" : 4891769 }
{ "_id" : { "state" : "TN" }, "pop" : 4876457 }
{ "_id" : { "state" : "WA" }, "pop" : 4866692 }
{ "_id" : { "state" : "MD" }, "pop" : 4781379 }
{ "_id" : { "state" : "MN" }, "pop" : 4372982 }
Type "it" for more
>
```

```
> db.zipcodes.aggregate([{$group:{_id:{state:"$state"},pop:{$sum:"$pop"}}},{$sort:{pop:-1}},{$limit:3}])
{ "_id" : { "state" : "CA" }, "pop" : 29754890 }
{ "_id" : { "state" : "NY" }, "pop" : 17990402 }
{ "_id" : { "state" : "TX" }, "pop" : 16984601 }
>
```

3)Populations By City:

```
> db.zipcodes.aggregate([{$group:{_id:{_id:"$_id",city:"$city",state:"$state"},pop:{$sum:"$pop"}}},{$sort:{_id:1}}])
{ "_id" : { "_id" : "01001", "city" : "AGAWAM", "state" : "MA" }, "pop" : 15338 }
{ "_id" : { "_id" : "01002", "city" : "CUSHMAN", "state" : "MA" }, "pop" : 36963 }
{ "_id" : { "_id" : "01005", "city" : "BARRE", "state" : "MA" }, "pop" : 4546 }
{ "_id" : { "_id" : "01007", "city" : "BELCHERTOWN", "state" : "MA" }, "pop" : 10579 }
{ "_id" : { "_id" : "01008", "city" : "BLANDFORD", "state" : "MA" }, "pop" : 1240 }
{ "_id" : { "_id" : "01010", "city" : "BRIMFIELD", "state" : "MA" }, "pop" : 3706 }
{ "_id" : { "_id" : "01011", "city" : "CHESTER", "state" : "MA" }, "pop" : 1688 }
{ "_id" : { "_id" : "01012", "city" : "CHESTERFIELD", "state" : "MA" }, "pop" : 177 }
{ "_id" : { "_id" : "01013", "city" : "CHICOPEE", "state" : "MA" }, "pop" : 23396 }
{ "_id" : { "_id" : "01020", "city" : "CHICOPEE", "state" : "MA" }, "pop" : 31495 }
{ "_id" : { "_id" : "01022", "city" : "WESTOVER AFB", "state" : "MA" }, "pop" : 1764 }
{ "_id" : { "_id" : "01026", "city" : "CUMMINGTON", "state" : "MA" }, "pop" : 1484 }
{ "_id" : { "_id" : "01028", "city" : "MOUNT TOM", "state" : "MA" }, "pop" : 16864 }
{ "_id" : { "_id" : "01028", "city" : "EAST LONGMEADOW", "state" : "MA" }, "pop" : 13367 }
{ "_id" : { "_id" : "01030", "city" : "FEEDING HILLS", "state" : "MA" }, "pop" : 11985 }
{ "_id" : { "_id" : "01031", "city" : "GILBERTVILLE", "state" : "MA" }, "pop" : 2385 }
{ "_id" : { "_id" : "01032", "city" : "GOSHEN", "state" : "MA" }, "pop" : 122 }
{ "_id" : { "_id" : "01033", "city" : "GRANBY", "state" : "MA" }, "pop" : 5526 }
{ "_id" : { "_id" : "01034", "city" : "TOLLAND", "state" : "MA" }, "pop" : 1652 }
{ "_id" : { "_id" : "01035", "city" : "HADLEY", "state" : "MA" }, "pop" : 4231 }
Type "it" for more
>
```

```
> db.zipcodes.aggregate([{$group:{_id:{_id:"$_id",city:"$city",state:"$state"},pop:{sum:"$pop"}}},{ $sort:{pop:-1}}])
{ "_id" : { "_id" : "60623", "city" : "CHICAGO", "state" : "IL" }, "pop" : 112047 }
{ "_id" : { "_id" : "11226", "city" : "BROOKLYN", "state" : "NY" }, "pop" : 111396 }
{ "_id" : { "_id" : "10021", "city" : "NEW YORK", "state" : "NY" }, "pop" : 106564 }
{ "_id" : { "_id" : "10025", "city" : "NEW YORK", "state" : "NY" }, "pop" : 100027 }
{ "_id" : { "_id" : "90201", "city" : "BELL GARDENS", "state" : "CA" }, "pop" : 99568 }
{ "_id" : { "_id" : "60617", "city" : "CHICAGO", "state" : "IL" }, "pop" : 98612 }
{ "_id" : { "_id" : "90011", "city" : "LOS ANGELES", "state" : "CA" }, "pop" : 96074 }
{ "_id" : { "_id" : "60647", "city" : "CHICAGO", "state" : "IL" }, "pop" : 95971 }
{ "_id" : { "_id" : "60628", "city" : "CHICAGO", "state" : "IL" }, "pop" : 94317 }
{ "_id" : { "_id" : "90650", "city" : "NORWALK", "state" : "CA" }, "pop" : 94188 }
{ "_id" : { "_id" : "60620", "city" : "CHICAGO", "state" : "IL" }, "pop" : 92005 }
{ "_id" : { "_id" : "60629", "city" : "CHICAGO", "state" : "IL" }, "pop" : 91814 }
{ "_id" : { "_id" : "60609", "city" : "CHICAGO", "state" : "IL" }, "pop" : 89762 }
{ "_id" : { "_id" : "60618", "city" : "CHICAGO", "state" : "IL" }, "pop" : 88377 }
{ "_id" : { "_id" : "11373", "city" : "JACKSON HEIGHTS", "state" : "NY" }, "pop" : 88241 }
{ "_id" : { "_id" : "91331", "city" : "ARLETA", "state" : "CA" }, "pop" : 88114 }
{ "_id" : { "_id" : "11212", "city" : "BROOKLYN", "state" : "NY" }, "pop" : 87079 }
{ "_id" : { "_id" : "90280", "city" : "SOUTH GATE", "state" : "CA" }, "pop" : 87026 }
{ "_id" : { "_id" : "11385", "city" : "RIDGEWOOD", "state" : "NY" }, "pop" : 85732 }
{ "_id" : { "_id" : "10467", "city" : "BRONX", "state" : "NY" }, "pop" : 85710 }
```

```
> db.zipcodes.aggregate([{$group:{_id:{_id:"$_id",city:"$city",state:"$state"},pop:{sum:"$pop"}},{ $sort:{pop:-1}},{$limit:3}])
{ "_id" : { "_id" : "60623", "city" : "CHICAGO", "state" : "IL" }, "pop" : 112047 }
{ "_id" : { "_id" : "11226", "city" : "BROOKLYN", "state" : "NY" }, "pop" : 111396 }
{ "_id" : { "_id" : "10021", "city" : "NEW YORK", "state" : "NY" }, "pop" : 106564 }
>
```

4) Bonus:

```
> db.zipcodes.aggregate([{$group:{_id:{state:"$state",city:"$city"},AvgPop:{avg:"$pop"}}}])
{ "_id" : { "state" : "VA", "city" : "HIGHLAND SPRINGS" }, "AvgPop" : 9373 }
{ "_id" : { "state" : "MN", "city" : "IONA" }, "AvgPop" : 434 }
{ "_id" : { "state" : "NJ", "city" : "NORTH PLAINFIELD" }, "AvgPop" : 23504 }
{ "_id" : { "state" : "NH", "city" : "WENTWORTH" }, "AvgPop" : 556 }
{ "_id" : { "state" : "WA", "city" : "SEDRO WOOLLEY" }, "AvgPop" : 14902 }
{ "_id" : { "state" : "OH", "city" : "RACINE" }, "AvgPop" : 3774 }
{ "_id" : { "state" : "AK", "city" : "HOLY CROSS" }, "AvgPop" : 277 }
{ "_id" : { "state" : "PA", "city" : "AUBURN" }, "AvgPop" : 2444 }
{ "_id" : { "state" : "NE", "city" : "CRETE" }, "AvgPop" : 6390 }
{ "_id" : { "state" : "OH", "city" : "DENNISON" }, "AvgPop" : 4573 }
{ "_id" : { "state" : "PA", "city" : "THREE SPRINGS" }, "AvgPop" : 2197 }
{ "_id" : { "state" : "IN", "city" : "WHEATLAND" }, "AvgPop" : 885 }
{ "_id" : { "state" : "TX", "city" : "RICHARDS" }, "AvgPop" : 787 }
{ "_id" : { "state" : "TX", "city" : "FORT MC KAVETT" }, "AvgPop" : 47 }
{ "_id" : { "state" : "CA", "city" : "MARINE CORP BASE" }, "AvgPop" : 13643 }
{ "_id" : { "state" : "MA", "city" : "BEVERLY" }, "AvgPop" : 38259 }
{ "_id" : { "state" : "NJ", "city" : "FORDS" }, "AvgPop" : 13568 }
{ "_id" : { "state" : "NY", "city" : "PHILADELPHIA" }, "AvgPop" : 2393 }
{ "_id" : { "state" : "VA", "city" : "CRITZ" }, "AvgPop" : 260 }
{ "_id" : { "state" : "MI", "city" : "ATHENS" }, "AvgPop" : 2436 }
Type "it" for more
>
```

```
> db.zipcodes.aggregate([{$group:{_id:{state:"$state",city:"$city"},AvgPop:{avg:"$pop"}},{ $sort:{AvgPop:-1}},{$limit:3}])
{ "_id" : { "state" : "CA", "city" : "BELL GARDENS" }, "AvgPop" : 99568 }
{ "_id" : { "state" : "CA", "city" : "NORWALK" }, "AvgPop" : 94188 }
{ "_id" : { "state" : "CA", "city" : "ARLETA" }, "AvgPop" : 88114 }
>
```