

Q1

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.find(<<$and:[<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" : 20001,
  "state" : "GA"
}
{
  "_id" : "30307",
  "city" : "ATLANTA",
  "loc" : [
    -84.335957,
    33.769138
  ],
  "pop" : 16330,
  "state" : "GA"
}
{
  "_id" : "30308",
  "city" : "ATLANTA",
  "loc" : [
    -84.375744,
    33.771039
  ],
  "pop" : 8549,
  "state" : "GA"
}
{
  "_id" : "30309",
  "city" : "ATLANTA",
  "loc" : [
    -84.380338,
```

Q2

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate(<<$match:<
$and:[<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" : 20001,
  "state" : "GA"
}
{
  "_id" : "30307",
  "city" : "ATLANTA",
  "loc" : [
    -84.335957,
    33.769138
  ],
  "pop" : 16330,
  "state" : "GA"
}
{
  "_id" : "30308",
  "city" : "ATLANTA",
  "loc" : [
    -84.375744,
    33.771039
  ],
  "pop" : 8549,
  "state" : "GA"
}
{
  "_id" : "30309",
  "city" : "ATLANTA",
  "loc" : [
    -84.380330,
```

Q3

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate([{$match:
{$city:"ATLANTA"}},{$group:{$_id:"$city",count:{$sum:1}}}]
{ "_id" : "ATLANTA", "count" : 41 }
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> _
```

Q4

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate([{$match:
{$city:"ATLANTA"}},{$group:{$_id:"$city",count:{$sum:"$pop"}}}]>
{ "_id" : "ATLANTA", "count" : 630046 }
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> _
```

Q5

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate([{$group:
{ "_id": { "state": "$state" }, "pop": { $sum: "$pop" } } } ]).pretty()
{ "_id" : { "state" : "CT" }, "pop" : 3287116 }
{ "_id" : { "state" : "NY" }, "pop" : 17990402 }
{ "_id" : { "state" : "WU" }, "pop" : 1793146 }
{ "_id" : { "state" : "NC" }, "pop" : 6620637 }
{ "_id" : { "state" : "MN" }, "pop" : 4372982 }
{ "_id" : { "state" : "OK" }, "pop" : 3145585 }
{ "_id" : { "state" : "VA" }, "pop" : 6101479 }
{ "_id" : { "state" : "SD" }, "pop" : 695397 }
{ "_id" : { "state" : "NE" }, "pop" : 1578139 }
{ "_id" : { "state" : "PA" }, "pop" : 11001643 }
{ "_id" : { "state" : "NM" }, "pop" : 1515069 }
{ "_id" : { "state" : "NH" }, "pop" : 1109252 }
{ "_id" : { "state" : "AR" }, "pop" : 2350725 }
{ "_id" : { "state" : "AZ" }, "pop" : 3665228 }
{ "_id" : { "state" : "IN" }, "pop" : 5544136 }
{ "_id" : { "state" : "FL" }, "pop" : 12606644 }
{ "_id" : { "state" : "DE" }, "pop" : 666168 }
{ "_id" : { "state" : "ME" }, "pop" : 1226648 }
{ "_id" : { "state" : "ND" }, "pop" : 630272 }
{ "_id" : { "state" : "KS" }, "pop" : 2475285 }
Type "it" for more
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> _
```

Q6

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate([{$group:
<_id:<state:"$state">,pop:<$sum:"$pop">>},<$sort:<pop:-1>>]}.pretty()
{ "_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" : 4091769 }
{ "_id" : { "state" : "TN" }, "pop" : 4876457 }
{ "_id" : { "state" : "WA" }, "pop" : 4866692 }
{ "_id" : { "state" : "MD" }, "pop" : 4781379 }
{ "_id" : { "state" : "MN" }, "pop" : 4372982 }
Type "it" for more
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> _
```

Q7

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> 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 }
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> _
```

```

C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate([{$group:
{$_id:{$city:"$city",state:"$state"},totpop:{$sum:"$pop"}}}]
{ "_id" : { "city" : "SCRANTON", "state" : "PA" }, "totpop" : 88025 }
{ "_id" : { "city" : "PRINCE FREDERICK", "state" : "MD" }, "totpop" : 6802 }
{ "_id" : { "city" : "ROCK CASTLE", "state" : "WV" }, "totpop" : 82 }
{ "_id" : { "city" : "CARROLLTON", "state" : "VA" }, "totpop" : 3990 }
{ "_id" : { "city" : "WHITE BLUFF", "state" : "TN" }, "totpop" : 5230 }
{ "_id" : { "city" : "SHELBYNA", "state" : "MO" }, "totpop" : 2714 }
{ "_id" : { "city" : "FORT POLK", "state" : "LA" }, "totpop" : 27181 }
{ "_id" : { "city" : "WINSLOW", "state" : "AR" }, "totpop" : 2566 }
{ "_id" : { "city" : "GREEN RIDGE", "state" : "MO" }, "totpop" : 1198 }
{ "_id" : { "city" : "NEW HOPE", "state" : "PA" }, "totpop" : 7111 }
{ "_id" : { "city" : "EMPIRE", "state" : "MI" }, "totpop" : 609 }
{ "_id" : { "city" : "HOLYOKE", "state" : "MA" }, "totpop" : 43704 }
{ "_id" : { "city" : "ALDEN", "state" : "MN" }, "totpop" : 1660 }
{ "_id" : { "city" : "FRANKLIN GROVE", "state" : "IL" }, "totpop" : 2070 }
{ "_id" : { "city" : "LACLEDE", "state" : "IL" }, "totpop" : 772 }
{ "_id" : { "city" : "BARKSDALE A F B", "state" : "LA" }, "totpop" : 3510 }
{ "_id" : { "city" : "DARLINGTON", "state" : "ID" }, "totpop" : 12 }
{ "_id" : { "city" : "MONTPELIER", "state" : "OH" }, "totpop" : 7569 }
{ "_id" : { "city" : "GARDEN VALLEY", "state" : "ID" }, "totpop" : 513 }
{ "_id" : { "city" : "BERRYVILLE", "state" : "AR" }, "totpop" : 6821 }
Type "it" for more
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY>

```



```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate([{$group:
{$_id:{$city:"$city"},totpop:{$sum:"$pop"}}},{$sort:{$totpop:-1}}])
{ "_id" : { "city" : "CHICAGO" }, "totpop" : 2452177 }
{ "_id" : { "city" : "BROOKLYN" }, "totpop" : 2341387 }
{ "_id" : { "city" : "HOUSTON" }, "totpop" : 2123053 }
{ "_id" : { "city" : "LOS ANGELES" }, "totpop" : 2102295 }
{ "_id" : { "city" : "PHILADELPHIA" }, "totpop" : 1639862 }
{ "_id" : { "city" : "NEW YORK" }, "totpop" : 1476790 }
{ "_id" : { "city" : "BRONX" }, "totpop" : 1209540 }
{ "_id" : { "city" : "SAN DIEGO" }, "totpop" : 1054316 }
{ "_id" : { "city" : "DALLAS" }, "totpop" : 999042 }
{ "_id" : { "city" : "DETROIT" }, "totpop" : 967460 }
{ "_id" : { "city" : "PHOENIX" }, "totpop" : 902249 }
{ "_id" : { "city" : "MIAMI" }, "totpop" : 848436 }
{ "_id" : { "city" : "COLUMBUS" }, "totpop" : 825440 }
{ "_id" : { "city" : "SAN JOSE" }, "totpop" : 817497 }
{ "_id" : { "city" : "SAN ANTONIO" }, "totpop" : 813188 }
{ "_id" : { "city" : "WASHINGTON" }, "totpop" : 780954 }
{ "_id" : { "city" : "BALTIMORE" }, "totpop" : 738846 }
{ "_id" : { "city" : "JACKSONVILLE" }, "totpop" : 735505 }
{ "_id" : { "city" : "SAN FRANCISCO" }, "totpop" : 723993 }
{ "_id" : { "city" : "CLEVELAND" }, "totpop" : 687451 }
Type "it" for more
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> _
```

Q10

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate([{$group:
{$_id:{city:"$city"},totpop:{$sum:"$pop"}}},{$sort:{$totpop:-1}},{$limit:3}]
{ "_id" : { "city" : "CHICAGO" }, "totpop" : 2452177 }
{ "_id" : { "city" : "BROOKLYN" }, "totpop" : 2341387 }
{ "_id" : { "city" : "HOUSTON" }, "totpop" : 2123053 }
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY>
```

Q11

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate([{$match:
{$state:'TX'}},{$group:{$_id:{$city:"$city"},totpop:{$sum:"$pop"}}},{$sort:{$totpop:
-1}},{$limit:3}]);
{ "_id" : { "city" : "HOUSTON" }, "totpop" : 2095918 }
{ "_id" : { "city" : "DALLAS" }, "totpop" : 940191 }
{ "_id" : { "city" : "SAN ANTONIO" }, "totpop" : 811792 }
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> _
```

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate([{$group:
  { "_id": { "state": "$state" }, "avgpop": { $avg: "$pop" } } } ]).pretty()
{ "_id" : { "state" : "AK" }, "avgpop" : 2793.3230769230768 }
{ "_id" : { "state" : "OH" }, "avgpop" : 10771.119165839125 }
{ "_id" : { "state" : "SC" }, "avgpop" : 9962.00857142857 }
{ "_id" : { "state" : "MI" }, "avgpop" : 10611.069634703197 }
{ "_id" : { "state" : "KY" }, "avgpop" : 4543.243510506799 }
{ "_id" : { "state" : "MA" }, "avgpop" : 12692.879746835442 }
{ "_id" : { "state" : "TN" }, "avgpop" : 8378.792096219931 }
{ "_id" : { "state" : "DC" }, "avgpop" : 25287.5 }
{ "_id" : { "state" : "IL" }, "avgpop" : 9238.137429264349 }
{ "_id" : { "state" : "UT" }, "avgpop" : 8404.146341463415 }
{ "_id" : { "state" : "TX" }, "avgpop" : 10164.333333333334 }
{ "_id" : { "state" : "WY" }, "avgpop" : 3239.4857142857145 }
{ "_id" : { "state" : "MD" }, "avgpop" : 11384.235714285714 }
{ "_id" : { "state" : "CO" }, "avgpop" : 7955.929951690821 }
{ "_id" : { "state" : "ID" }, "avgpop" : 4126.020491803279 }
{ "_id" : { "state" : "NJ" }, "avgpop" : 14315.162962962962 }
{ "_id" : { "state" : "CA" }, "avgpop" : 19627.236147757256 }
{ "_id" : { "state" : "CT" }, "avgpop" : 12498.539923954373 }
{ "_id" : { "state" : "NY" }, "avgpop" : 11279.240902021317 }
{ "_id" : { "state" : "WU" }, "avgpop" : 2733.454268292683 }
Type "it" for more
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> _
```

Q13

```
C:\Windows\System32\cmd.exe - mongo "mongodb+srv://cluster0.i2q1n.mon...
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> db.zipcodes.aggregate([ { $
group: { _id: { state: "$state" }, avgStatePop: { $avg: "$pop" } } },<$sort:<avg
StatePop:-1}}, { $limit: 3 } ] )
{ "_id" : { "state" : "DC" }, "avgStatePop" : 25287.5 }
{ "_id" : { "state" : "CA" }, "avgStatePop" : 19627.236147757256 }
{ "_id" : { "state" : "FL" }, "avgStatePop" : 15779.407960199005 }
MongoDB Enterprise atlas-oac0p2-shard-0:PRIMARY> _
```