

# MONGODB Assignments

## Query/find docs

1.

```
> db.movies.find().pretty()
{
  "_id" : ObjectId("6104dbb674798a277eaaa94e"),
  "title" : "Fight Club",
  "writer" : "Chuck Palahniuko",
  "year" : 1999,
  "actors" : [
    "Brad Pitt",
    "Edward Norton"
  ]
}
{
  "_id" : ObjectId("6104dc4374798a277eaaa94f"),
  "title" : "Pulp Fiction",
  "writer" : "Quentin Tarantino",
  "year" : 1994,
  "actors" : [
    "John Travolta",
    "Uma Thurman"
  ]
}
{
  "_id" : ObjectId("6104dc9674798a277eaaa950"),
  "title" : "Inglorious Basterds",
  "writer" : "Quentin Tarantino",
  "year" : 2009,
  "actors" : [
    "Brad Pitt",
    "Diane Kruger",
    "Eli Roth"
  ]
}
{
  "_id" : ObjectId("6104dd1874798a277eaaa951"),
  "title" : "The Hobbit: An Unexpected Journey",
  "writer" : "J.R.R.Tolkein",
  "year" : 2012,
  "franchise" : "The Hobbit"
}
{
  "_id" : ObjectId("6104dd4974798a277eaaa952"),
  "title" : "The Hobbit: The Desolation of Smaug",
  "writer" : "J.R.R.Tolkein",
  "year" : 2013,
```

```

{
  "_id" : ObjectId("6104dd4974798a277eaaa952"),
  "title" : "The Hobbit: The Desolation of Smaug",
  "writer" : "J.R.R.Tolkein",
  "year" : 2013,
  "franchise" : "The Hobbit"
}
{
  "_id" : ObjectId("6104dde874798a277eaaa953"),
  "title" : "The Hobbit: The Battle of Five Armies ",
  "writer" : "J.R.R.Tolkein",
  "year" : 2012,
  "franchise" : "The Hobbit",
  "synopsis" : "Bilbo and Company are forced to engage in a war against an array of combatants and keep the Lonely Mountain from falling into the hands of a rising darkness"
}
{
  "_id" : ObjectId("6104de1c74798a277eaaa954"),
  "title" : "Pee Wee Herman's Big Adventure"
}
{ "_id" : ObjectId("6104de2c74798a277eaaa955"), "title" : "Avatar" }
}

```

2.

```

> db.movies.find({"writer":'Quentin Tarantino'})
{ "_id" : ObjectId("6104dc4374798a277eaaa94f"), "title" : "Pulp Fiction", "writer" : "Quentin Tarantino", "year" : 1994, "actors" : [ "John Travolta", "Uma Thurman" ] }
{ "_id" : ObjectId("6104dc9674798a277eaaa950"), "title" : "Inglorious Basterds", "writer" : "Quentin Tarantino", "year" : 2009, "actors" : [ "Brad Pitt", "Diane Kruger", "Eli Roth" ] }

```

3.

```
> db.movies.find({"actors": 'Brad Pitt'})
{ "_id" : ObjectId("6104dbb674798a277eaaa94e"), "title" : "Fight Club", "writer" : "Chuck Palahniuko", "year" : 1999, "actors" : [ "Brad Pitt", "Edward Norton" ] }
{ "_id" : ObjectId("6104dc9674798a277eaaa950"), "title" : "Inglorious Basterds", "writer" : "Quentin Tarantino", "year" : 2009, "actors" : [ "Brad Pitt", "Diane Kruger", "Eli Roth" ] }
```

4.

```
@(shell):1:42
> db.movies.find({"franchise": 'The Hobbit'})
{ "_id" : ObjectId("6104dd1874798a277eaaa951"), "title" : "The Hobbit: An Unexpected Journey", "writer" : "J.R.R.Tolkein", "year" : 2012, "franchise" : "The Hobbit" }
{ "_id" : ObjectId("6104dd4974798a277eaaa952"), "title" : "The Hobbit: The Desolation of Smaug", "writer" : "J.R.R.Tolkein", "year" : 2013, "franchise" : "The Hobbit" }
{ "_id" : ObjectId("6104dde874798a277eaaa953"), "title" : "The Hobbit: The Battle of Five Armies ", "writer" : "J.R.R.Tolkein", "year" : 2012, "franchise" : "The Hobbit", "synopsis" : "Bilbo and Company are forced to engage in a war against an array of combatants and keep the Lonely Mountain from falling into the hands of a rising darkness" }
>
```

5.

```
> db.movies.find({year:{$gt:1990,$lt:2000}})
{ "_id" : ObjectId("6104dbb674798a277eaaa94e"), "title" : "Fight Club", "writer" : "Chuck Palahniuko", "year" : 1999, "actors" : [ "Brad Pitt", "Edward Norton" ] }
{ "_id" : ObjectId("6104dc4374798a277eaaa94f"), "title" : "Pulp Fiction", "writer" : "Quentin Tarantino", "year" : 1994, "actors" : [ "John Travolta", "Uma Thurman" ] }
```

6.

```
> db.movies.find({$or:[{year:{$lt:2000}},{year:{$gt:2010}}]})
{ "_id" : ObjectId("6104dbb674798a277eaaa94e"), "title" : "Fight Club", "writer" : "Chuck Palahniuko", "year" : 1999, "actors" : [ "Brad Pitt", "Edward Norton" ] }
{ "_id" : ObjectId("6104dc4374798a277eaaa94f"), "title" : "Pulp Fiction", "writer" : "Quentin Tarantino", "year" : 1994, "actors" : [ "John Travolta", "Uma Thurman" ] }
{ "_id" : ObjectId("6104dd1874798a277eaaa951"), "title" : "The Hobbit: An Unexpected Journey", "writer" : "J.R.R.Tolkien", "year" : 2012, "franchise" : "The Hobbit" }
{ "_id" : ObjectId("6104dd4974798a277eaaa952"), "title" : "The Hobbit: The Desolation of Smaug", "writer" : "J.R.R.Tolkien", "year" : 2013, "franchise" : "The Hobbit" }
{ "_id" : ObjectId("6104dde874798a277eaaa953"), "title" : "The Hobbit: The Battle of Five Armies ", "writer" : "J.R.R.Tolkien", "year" : 2012, "franchise" : "The Hobbit", "synopsis" : "Bilbo and Company are forced to engage in a war against an array of combatants and keep the Lonely Mountain from falling into the hands of a rising darkness" }
```

Update:

1.



```
> db.movies.update({title:"The Hobbit: An Unexpected Journey"},{$set:{synopsis:"A reluctant hobbit,Bilbo Baggins, sets out to the lonely Mountain with a spirited group of dwarves to reclaim their mountain home- and the gold within it - from the dragon Smaug"}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

```
  "_id" : ObjectId("6104dd1874798a277eaaa951"),
  "title" : "The Hobbit: An Unexpected Journey",
  "writer" : "J.R.R.Tolkein",
  "year" : 2012,
  "franchise" : "The Hobbit",
  "synopsis" : "A reluctant hobbit,Bilbo Baggins, sets out to the lonely Mountain with a spirited group of dwarves to reclaim their mountain home- and the gold within it - from the dragon Smaug"
}
```

2.

```
> db.movies.update({title:"The Hobbit: The Desolation of Smaug"},{$set:{synopsis:"The dwarves,along with Bilbo Baggins and Gandalf the Grey, continue their quest to reclaim Erebor, their homeland, from Smaug. Bilbo Baggins is in possession of a mysterious and magical ring."}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
>
```

3.

```
> db.movies.update({title:"Pulp Fiction"},{$push:{actor:"Samuel L. Jackson"}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

Text search:

1.

```

> db.movies.find({ synopsis: /Bilbo/g }).pretty();
{
  "_id" : ObjectId("6104dd1874798a277eaaa951"),
  "title" : "The Hobbit: An Unexpected Journey",
  "writer" : "J.R.R.Tolkein",
  "year" : 2012,
  "franchise" : "The Hobbit",
  "synopsis" : "A reluctant hobbit,Bilbo Baggins, sets out to the lonely Mountain with a spirited group of dwarves to reclaim their mountain home- and the gold within it - from the dragon Smaug"
}
{
  "_id" : ObjectId("6104dd4974798a277eaaa952"),
  "title" : "The Hobbit: The Desolation of Smaug",
  "writer" : "J.R.R.Tolkein",
  "year" : 2013,
  "franchise" : "The Hobbit",
  "synopsis" : "The dwarves,along with Bilbo Baggins and Gandalf the Grey, continue their quest to reclaim Erebor, their homeland, from Smaug. Bilbo Baggins is in possession of a mysterious and magical ring."
}
{
  "_id" : ObjectId("6104dde874798a277eaaa953"),
  "title" : "The Hobbit: The Battle of Five Armies ",
  "writer" : "J.R.R.Tolkein",
  "year" : 2012,
  "franchise" : "The Hobbit",
  "synopsis" : "Bilbo and Company are forced to engage in a war against an array of combatants and keep the Lonely Mountain from falling into the hands of a rising darkness"
}

```

2.

```

> db.movies.find({ synopsis: /Gandalf/g})
{ "_id" : ObjectId("6104dd4974798a277eaaa952"), "title" : "The Hobbit: The Desolation of Smaug", "writer" : "J.R.R.Tolkein", "year" : 2013, "franchise" : "The Hobbit", "synopsis" : "The dwarves,along with Bilbo Baggins and Gandalf the Grey, continue their quest to reclaim Erebor, their homeland, from Smaug. Bilbo Baggins is in possession of a mysterious and magical ring." }
>

```

3.

```
> db.movies.find({ $and: [{ synopsis: /Bilbo/g }, { synopsis: { $not: /Gandalf/g } }] })
{ "_id" : ObjectId("6104dd1874798a277eaaa951"), "title" : "The Hobbit: An Unexpected Journey", "writer" : "J.R.R.Tolkein", "year" : 2012, "franchise" : "The Hobbit", "synopsis" : "A reluctant hobbit,Bilbo Baggins, sets out to the lonely Mountain with a spirited group of dwarves to reclaim their mountain home- and the gold within it - from the dragon Smaug" }
{ "_id" : ObjectId("6104dde874798a277eaaa953"), "title" : "The Hobbit: The Battle of Five Armies ", "writer" : "J.R.R.Tolkein", "year" : 2012, "franchise" : "The Hobbit", "synopsis" : "Bilbo and Company are forced to engage in a war against an array of combatants and keep the Lonely Mountain from falling into the hands of a rising darkness" }
>
```

4.

```
> db.movies.find({ synopsis: /(dwarves|hobbit)/g })
{ "_id" : ObjectId("6104dd1874798a277eaaa951"), "title" : "The Hobbit: An Unexpected Journey", "writer" : "J.R.R.Tolkein", "year" : 2012, "franchise" : "The Hobbit", "synopsis" : "A reluctant hobbit,Bilbo Baggins, sets out to the lonely Mountain with a spirited group of dwarves to reclaim their mountain home- and the gold within it - from the dragon Smaug" }
{ "_id" : ObjectId("6104dd4974798a277eaaa952"), "title" : "The Hobbit: The Desolation of Smaug", "writer" : "J.R.R.Tolkein", "year" : 2013, "franchise" : "The Hobbit", "synopsis" : "The dwarves,along with Bilbo Baggins and Gandalf the Grey, continue their quest to reclaim Erebor, their homeland, from Smaug. Bilbo Baggins is in possession of a mysterious and magical ring." }
>
```

5.

```
> db.movies.find({ synopsis: /(gold.*dragon|dragon.*gold)/g }).pretty();
{
  "_id" : ObjectId("6104dd1874798a277eaaa951"),
  "title" : "The Hobbit: An Unexpected Journey",
  "writer" : "J.R.R.Tolkein",
  "year" : 2012,
  "franchise" : "The Hobbit",
  "synopsis" : "A reluctant hobbit,Bilbo Baggins, sets out to the lonely Mountain with a spirited group of dwarves to reclaim their mountain home- and the gold within it - from the dragon Smaug"
}
```

Delete:

1.



```
> db.movies.remove({title:"Pee Wee Herman's Big Adventure"})
WriteResult({ "nRemoved" : 1 })
> db.movies.find().pretty()
```

2.

```
> db.movies.remove({title:"Avatar"})
WriteResult({ "nRemoved" : 1 })
```

## Relationships:

1.

```
> db.users.find()
{ "_id" : ObjectId("610565e11a96039ac742c1f4"), "username" : "GoodGuyGreg", "first_name" : "Good Gu", "last_name" : "Greg" }
{ "_id" : ObjectId("610567721a96039ac742c1f5"), "username" : "ScumbagSteve", "fullname" : [ { "first" : "Scumbag", "last" : "Steve" } ] }
>
```

2.



```

> db.posts.find()
{ "_id" : ObjectId("610568091a96039ac742c1f6"), "username" : "GoodGuyGrea", "title" : "Passes our at party", "body" : "Wakes up early and cleans house" }
{ "_id" : ObjectId("610568421a96039ac742c1f7"), "username" : "GoodGuyGrea", "title" : "Steals your identity", "body" : "Raises your credit score" }
{ "_id" : ObjectId("610568771a96039ac742c1f8"), "username" : "GoodGuyGrea", "title" : "Reports a bug in your code", "body" : "Sends you a Pull Request" }
{ "_id" : ObjectId("610568af1a96039ac742c1f9"), "username" : "ScumbagSteve", "title" : "Borrows something", "body" : "Sells it" }
{ "_id" : ObjectId("610568bf1a96039ac742c1fa"), "username" : "ScumbagSteve", "title" : "Borrows something", "body" : "The end" }
{ "_id" : ObjectId("610568eb1a96039ac742c1fb"), "username" : "ScumbagSteve", "title" : "Forks your repo on github", "body" : "Sets to private" }
>

```

3.

```

> db.posts.find({username:"GoodGuyGreg"})
{ "_id" : ObjectId("610568091a96039ac742c1f6"), "username" : "GoodGuyGreg", "title" : "Passes our at party", "body" : "Wakes up early and cleans house" }
{ "_id" : ObjectId("610568421a96039ac742c1f7"), "username" : "GoodGuyGreg", "title" : "Steals your identity", "body" : "Raises your credit score" }
{ "_id" : ObjectId("610568771a96039ac742c1f8"), "username" : "GoodGuyGreg", "title" : "Reports a bug in your code", "body" : "Sends you a Pull Request" }
>

```

4.

```

> db.posts.find({username:"ScumbagSteve"})
{ "_id" : ObjectId("610568af1a96039ac742c1f9"), "username" : "ScumbagSteve", "title" : "Borrows something", "body" : "Sells it" }
{ "_id" : ObjectId("610568bf1a96039ac742c1fa"), "username" : "ScumbagSteve", "title" : "Borrows something", "body" : "The end" }
{ "_id" : ObjectId("610568eb1a96039ac742c1fb"), "username" : "ScumbagSteve", "title" : "Forks your repo on github", "body" : "Sets to private" }
>

```

5.

```

> db.comments.find()
{ "_id" : ObjectId("61058335eb73a0cd9bdbe114"), "username" : "GoodGuyGreg", "comment" : "Hope you got a good deal!", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Borrows something" }
{ "_id" : ObjectId("61058564df39e7d34ef4829c"), "username" : "GoodGuyGreg", "comment" : "Hope you got a good deal!", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Borrows something" }
{ "_id" : ObjectId("6105857ddf39e7d34ef4829d"), "username" : "GoodGuyGreg", "comment" : "What's mine is yours!", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Borrows something" }
{ "_id" : ObjectId("6105858cdf39e7d34ef4829e"), "username" : "GoodGuyGreg", "comment" : "Don't violate the licensing agreement!", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Forks your repo on github" }
{ "_id" : ObjectId("6105859bdf39e7d34ef4829f"), "username" : "ScumbagSteve", "comment" : "It still isn't clean", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Passes out at party" }
{ "_id" : ObjectId("610585a5df39e7d34ef482a0"), "username" : "ScumbagSteve", "comment" : "Denied your PR cause I found a hack", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Reports a bug in your code" }
>

```

6.

```

> db.comments.find({username:"GoodGuyGreg"})
{ "_id" : ObjectId("61058335eb73a0cd9bdbe114"), "username" : "GoodGuyGreg", "comment" : "Hope you got a good deal!", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Borrows something" }
{ "_id" : ObjectId("61058564df39e7d34ef4829c"), "username" : "GoodGuyGreg", "comment" : "Hope you got a good deal!", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Borrows something" }
{ "_id" : ObjectId("6105857ddf39e7d34ef4829d"), "username" : "GoodGuyGreg", "comment" : "What's mine is yours!", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Borrows something" }
{ "_id" : ObjectId("6105858cdf39e7d34ef4829e"), "username" : "GoodGuyGreg", "comment" : "Don't violate the licensing agreement!", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Forks your repo on github" }
>

```

7.

```

> db.comments.find({username:"ScumbagSteve"})
{ "_id" : ObjectId("6105859bdf39e7d34ef4829f"), "username" : "ScumbagSteve", "comment" : "It still isn't clean", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Passes out at party" }
{ "_id" : ObjectId("610585a5df39e7d34ef482a0"), "username" : "ScumbagSteve", "comment" : "Denied your PR cause I found a hack", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Reports a bug in your code" }
>

```

8.

```

> db.comments.find({wherepost_obj_idistheObjectIdofthepostsdocument : "Reports a bug in your code"})
{ "_id" : ObjectId("610585a5df39e7d34ef482a0"), "username" : "ScumbagSteve", "comment" : "Denied your PR cause I found a hack", "post" : "[post_obj_id]", "wherepost_obj_idistheObjectIdofthepostsdocument" : "Reports a bug in your code" }
>

```

Assignment 2:

Atlanta population:



1.

```
> 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": "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": "30308", "city": "ATLANTA", "loc": [ -84.375744, 33.771839 ], "pop": 8549, "state": "GA" }
{"_id": "30313", "city": "ATLANTA", "loc": [ -84.39352, 33.76825 ], "pop": 8038, "state": "GA" }
{"_id": "30312", "city": "ATLANTA", "loc": [ -84.378125, 33.746749 ], "pop": 17683, "state": "GA" }
{"_id": "30315", "city": "ATLANTA", "loc": [ -84.380771, 33.705062 ], "pop": 41061, "state": "GA" }
{"_id": "30309", "city": "ATLANTA", "loc": [ -84.388338, 33.798407 ], "pop": 14766, "state": "GA" }
{"_id": "30314", "city": "ATLANTA", "loc": [ -84.425546, 33.756103 ], "pop": 26649, "state": "GA" }
{"_id": "30319", "city": "ATLANTA", "loc": [ -84.335091, 33.868728 ], "pop": 32138, "state": "GA" }
{"_id": "30318", "city": "ATLANTA", "loc": [ -84.445432, 33.786454 ], "pop": 53894, "state": "GA" }
{"_id": "30326", "city": "ATLANTA", "loc": [ -84.358232, 33.848168 ], "pop": 125, "state": "GA" }
{"_id": "30324", "city": "ATLANTA", "loc": [ -84.354867, 33.820609 ], "pop": 15044, "state": "GA" }
{"_id": "30327", "city": "ATLANTA", "loc": [ -84.419966, 33.862723 ], "pop": 18467, "state": "GA" }
{"_id": "30317", "city": "ATLANTA", "loc": [ -84.31685, 33.749788 ], "pop": 16395, "state": "GA" }
{"_id": "30331", "city": "ATLANTA", "loc": [ -84.520468, 33.72241 ], "pop": 38185, "state": "GA" }
{"_id": "30330", "city": "ATLANTA", "loc": [ -84.434735, 33.70645 ], "pop": 643, "state": "GA" }
Type "it" for more
```

2.

```
> 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": "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": "30308", "city": "ATLANTA", "loc": [ -84.375744, 33.771839 ], "pop": 8549, "state": "GA" }
{"_id": "30313", "city": "ATLANTA", "loc": [ -84.39352, 33.76825 ], "pop": 8038, "state": "GA" }
{"_id": "30312", "city": "ATLANTA", "loc": [ -84.378125, 33.746749 ], "pop": 17683, "state": "GA" }
{"_id": "30315", "city": "ATLANTA", "loc": [ -84.380771, 33.705062 ], "pop": 41061, "state": "GA" }
{"_id": "30309", "city": "ATLANTA", "loc": [ -84.388338, 33.798407 ], "pop": 14766, "state": "GA" }
{"_id": "30314", "city": "ATLANTA", "loc": [ -84.425546, 33.756103 ], "pop": 26649, "state": "GA" }
{"_id": "30319", "city": "ATLANTA", "loc": [ -84.335091, 33.868728 ], "pop": 32138, "state": "GA" }
{"_id": "30318", "city": "ATLANTA", "loc": [ -84.445432, 33.786454 ], "pop": 53894, "state": "GA" }
{"_id": "30326", "city": "ATLANTA", "loc": [ -84.358232, 33.848168 ], "pop": 125, "state": "GA" }
{"_id": "30324", "city": "ATLANTA", "loc": [ -84.354867, 33.820609 ], "pop": 15044, "state": "GA" }
{"_id": "30327", "city": "ATLANTA", "loc": [ -84.419966, 33.862723 ], "pop": 18467, "state": "GA" }
{"_id": "30317", "city": "ATLANTA", "loc": [ -84.31685, 33.749788 ], "pop": 16395, "state": "GA" }
{"_id": "30331", "city": "ATLANTA", "loc": [ -84.520468, 33.72241 ], "pop": 38185, "state": "GA" }
{"_id": "30330", "city": "ATLANTA", "loc": [ -84.434735, 33.70645 ], "pop": 643, "state": "GA" }
Type "it" for more
>
```

3.



```
@(shell):1:1
> db.zipcodes.aggregate([{$group:{_id:"ATLANTA",zipcoeds:{$count:{}}}}])
{ "_id" : "ATLANTA", "zipcoeds" : 29353 }
>
```

4.

```
...
> db.zipcodes.aggregate([{$group:{_id:"ATLANTA",population:{$sum:"$pop"}}}])
{ "_id" : "ATLANTA", "population" : 248408400 }
```

State:

1.

```
> db.zipcodes.aggregate([{$group:{_id:"$state",population:{$sum:"$pop"}}}])
{ "_id" : "DE", "population" : 666168 }
{ "_id" : "NY", "population" : 17990402 }
{ "_id" : "MT", "population" : 798948 }
{ "_id" : "NE", "population" : 1578139 }
{ "_id" : "UT", "population" : 1722850 }
{ "_id" : "AK", "population" : 544698 }
{ "_id" : "AL", "population" : 4040587 }
{ "_id" : "RI", "population" : 1003218 }
{ "_id" : "GA", "population" : 6478216 }
{ "_id" : "MD", "population" : 4781379 }
{ "_id" : "CO", "population" : 3293755 }
{ "_id" : "HI", "population" : 1108229 }
{ "_id" : "WA", "population" : 4866692 }
{ "_id" : "AZ", "population" : 3665228 }
{ "_id" : "TX", "population" : 16984601 }
{ "_id" : "WY", "population" : 453528 }
{ "_id" : "MO", "population" : 5110648 }
{ "_id" : "MI", "population" : 9295297 }
{ "_id" : "KY", "population" : 3675484 }
{ "_id" : "MA", "population" : 6016425 }
Type "it" for more
>
```

2.

```

@($shell):1:1
> db.zipcodes.aggregate([{$sort:{pop:-1}}])
{ "_id" : "60623", "city" : "CHICAGO", "loc" : [ -87.7157, 41.849015 ], "pop" : 112047, "state" : "IL" }
{ "_id" : "11226", "city" : "BROOKLYN", "loc" : [ -73.956985, 40.646694 ], "pop" : 111396, "state" : "NY" }
{ "_id" : "10021", "city" : "NEW YORK", "loc" : [ -73.958805, 40.768476 ], "pop" : 106564, "state" : "NY" }
{ "_id" : "10025", "city" : "NEW YORK", "loc" : [ -73.968312, 40.797466 ], "pop" : 100027, "state" : "NY" }
{ "_id" : "90201", "city" : "BELL GARDENS", "loc" : [ -118.17205, 33.969177 ], "pop" : 99568, "state" : "CA" }
{ "_id" : "60617", "city" : "CHICAGO", "loc" : [ -87.556012, 41.725743 ], "pop" : 98612, "state" : "IL" }
{ "_id" : "90011", "city" : "LOS ANGELES", "loc" : [ -118.258189, 34.007856 ], "pop" : 96074, "state" : "CA" }
{ "_id" : "60647", "city" : "CHICAGO", "loc" : [ -87.704322, 41.920903 ], "pop" : 95971, "state" : "IL" }
{ "_id" : "60628", "city" : "CHICAGO", "loc" : [ -87.624277, 41.693443 ], "pop" : 94317, "state" : "IL" }
{ "_id" : "90650", "city" : "NORWALK", "loc" : [ -118.081767, 33.90564 ], "pop" : 94188, "state" : "CA" }
{ "_id" : "60620", "city" : "CHICAGO", "loc" : [ -87.654251, 41.741119 ], "pop" : 92005, "state" : "IL" }
{ "_id" : "60629", "city" : "CHICAGO", "loc" : [ -87.706936, 41.778149 ], "pop" : 91814, "state" : "IL" }
{ "_id" : "60609", "city" : "CHICAGO", "loc" : [ -87.653279, 41.809721 ], "pop" : 89762, "state" : "IL" }
{ "_id" : "60618", "city" : "CHICAGO", "loc" : [ -87.704214, 41.946401 ], "pop" : 88377, "state" : "IL" }
{ "_id" : "11373", "city" : "JACKSON HEIGHTS", "loc" : [ -73.878551, 40.740388 ], "pop" : 88241, "state" : "NY" }
{ "_id" : "91331", "city" : "ARLETA", "loc" : [ -118.420692, 34.258081 ], "pop" : 88114, "state" : "CA" }
{ "_id" : "11212", "city" : "BROOKLYN", "loc" : [ -73.914483, 40.662474 ], "pop" : 87079, "state" : "NY" }
{ "_id" : "90280", "city" : "SOUTH GATE", "loc" : [ -118.201349, 33.94617 ], "pop" : 87026, "state" : "CA" }
{ "_id" : "11385", "city" : "RIDGEWOOD", "loc" : [ -73.896122, 40.703613 ], "pop" : 85732, "state" : "NY" }
{ "_id" : "10467", "city" : "BRONX", "loc" : [ -73.871242, 40.873671 ], "pop" : 85710, "state" : "NY" }
Type "it" for more
> db.zipcodes.aggregate([{$sort:{pop:-1}}]).pretty()

```

3.

```

Type "it" for more
> db.zipcodes.aggregate([{$group:{_id:"$state",population:{$sum:"$pop"}}},{ $limit:3}])
{ "_id" : "SC", "population" : 3486703 }
{ "_id" : "CT", "population" : 3287116 }
{ "_id" : "NY", "population" : 17990402 }
>

```

City:

1.

```
Command Prompt - mongo
> db.zipcodes.aggregate([{$group:{_id:{city:"$city",state:"$state"},population:{$sum:"$pop"}}}])
{"_id":{"city":"COLD SPRINGS","state":"CA"},"population":201}
{"_id":{"city":"CARSON","state":"VA"},"population":1343}
{"_id":{"city":"GALENA","state":"AK"},"population":847}
{"_id":{"city":"OAKS","state":"OK"},"population":327}
{"_id":{"city":"THREE SPRINGS","state":"PA"},"population":2197}
{"_id":{"city":"BARKER","state":"NY"},"population":2441}
{"_id":{"city":"HAZLETON","state":"IN"},"population":1214}
{"_id":{"city":"LODI","state":"WI"},"population":5765}
{"_id":{"city":"GREENMOUNTAIN","state":"NC"},"population":1471}
{"_id":{"city":"SMYRNA","state":"GA"},"population":54816}
{"_id":{"city":"EIDSON","state":"TN"},"population":901}
{"_id":{"city":"HIGHLAND","state":"IN"},"population":24029}
{"_id":{"city":"CARLOCK","state":"IL"},"population":1066}
{"_id":{"city":"FULTS","state":"IL"},"population":635}
{"_id":{"city":"GREENLAND","state":"NH"},"population":2450}
{"_id":{"city":"GRANBY","state":"CO"},"population":4839}
{"_id":{"city":"CLEAR","state":"AK"},"population":440}
{"_id":{"city":"MC CORMICK","state":"SC"},"population":5426}
{"_id":{"city":"DAVISPORT","state":"KY"},"population":1923}
{"_id":{"city":"NEW CANTON","state":"IL"},"population":658}
Type "it" for more
```

2.

```
> db.zipcodes.aggregate([{$sort:{pop:-1}}])
{"_id":"60623","city":"CHICAGO","loc":[-87.7157,41.849015],"pop":112047,"state":"IL"}
{"_id":"11226","city":"BROOKLYN","loc":[-73.956985,40.646694],"pop":111396,"state":"NY"}
{"_id":"10021","city":"NEW YORK","loc":[-73.958805,40.768476],"pop":106564,"state":"NY"}
{"_id":"10025","city":"NEW YORK","loc":[-73.968312,40.797466],"pop":100027,"state":"NY"}
{"_id":"90201","city":"BELL GARDENS","loc":[-118.17205,33.969177],"pop":99568,"state":"CA"}
{"_id":"60617","city":"CHICAGO","loc":[-87.556012,41.725743],"pop":98612,"state":"IL"}
{"_id":"90011","city":"LOS ANGELES","loc":[-118.258189,34.007856],"pop":96074,"state":"CA"}
{"_id":"60647","city":"CHICAGO","loc":[-87.704322,41.920903],"pop":95971,"state":"IL"}
{"_id":"60628","city":"CHICAGO","loc":[-87.624277,41.693443],"pop":94317,"state":"IL"}
{"_id":"90650","city":"NORWALK","loc":[-118.081767,33.90564],"pop":94188,"state":"CA"}
{"_id":"60620","city":"CHICAGO","loc":[-87.654251,41.741119],"pop":92005,"state":"IL"}
{"_id":"60629","city":"CHICAGO","loc":[-87.706936,41.778149],"pop":91814,"state":"IL"}
{"_id":"60609","city":"CHICAGO","loc":[-87.653279,41.809721],"pop":89762,"state":"IL"}
{"_id":"60618","city":"CHICAGO","loc":[-87.704214,41.946401],"pop":88377,"state":"IL"}
{"_id":"11373","city":"JACKSON HEIGHTS","loc":[-73.878551,40.740388],"pop":88241,"state":"NY"}
{"_id":"91331","city":"ARLETA","loc":[-118.420692,34.258081],"pop":88114,"state":"CA"}
{"_id":"11212","city":"BROOKLYN","loc":[-73.914483,40.662474],"pop":87079,"state":"NY"}
{"_id":"90280","city":"SOUTH GATE","loc":[-118.201349,33.94617],"pop":87026,"state":"CA"}
{"_id":"11385","city":"RIDGEWOOD","loc":[-73.896122,40.703613],"pop":85732,"state":"NY"}
{"_id":"10467","city":"BRONX","loc":[-73.871242,40.873671],"pop":85710,"state":"NY"}
Type "it" for more
```

3.



```

> db.zipcodes.aggregate([{$group:{_id:"$city",population:{$sum:"$pop"}}},{$limit:3}])
{ "_id" : "MALAD CITY", "population" : 3110 }
{ "_id" : "ELSMERE", "population" : 132 }
{ "_id" : "NORTH SYRACUSE", "population" : 22829 }
>

```

4.

```

> db.zipcodes.aggregate([{$group:{_id:{city:"Texas",State:"$state"},population:{$sum:"$pop"}}},{$sort:{_id.state":1,population":1}},{$limit:3}])
{ "_id" : { "city" : "Texas", "State" : "NY" }, "population" : 17990402 }
{ "_id" : { "city" : "Texas", "State" : "WI" }, "population" : 4891769 }
{ "_id" : { "city" : "Texas", "State" : "OK" }, "population" : 3145585 }

```

Bonus:

1.

```

> db.zipcodes.aggregate([{$group:{_id:{state:"$state",city:"$city"},pop:{$sum:"$pop"}}},{$group:{_id:"$_id.state",avgCitypop:{$avg:"$pop"}}}])
{ "_id" : "PA", "avgCitypop" : 8679.067202337472 }
{ "_id" : "NY", "avgCitypop" : 13131.680291970803 }
{ "_id" : "OH", "avgCitypop" : 12700.839578454332 }
{ "_id" : "WI", "avgCitypop" : 7323.00748502994 }
{ "_id" : "NH", "avgCitypop" : 5232.320754716981 }
{ "_id" : "CT", "avgCitypop" : 14674.625 }
{ "_id" : "NE", "avgCitypop" : 3034.882692307692 }
{ "_id" : "ME", "avgCitypop" : 3006.4901960784314 }
{ "_id" : "MT", "avgCitypop" : 2593.987012987013 }
{ "_id" : "UT", "avgCitypop" : 9518.508287292818 }
{ "_id" : "DE", "avgCitypop" : 14481.91304347826 }
{ "_id" : "WA", "avgCitypop" : 12258.670025188916 }
{ "_id" : "MD", "avgCitypop" : 12615.775725593667 }
{ "_id" : "AL", "avgCitypop" : 7907.2152641878665 }
{ "_id" : "GA", "avgCitypop" : 11547.62210338681 }
{ "_id" : "HI", "avgCitypop" : 15831.842857142858 }
{ "_id" : "IN", "avgCitypop" : 9271.130434782608 }
{ "_id" : "RI", "avgCitypop" : 19292.653846153848 }
{ "_id" : "WY", "avgCitypop" : 3384.5373134328356 }
{ "_id" : "NV", "avgCitypop" : 18209.590909090908 }
Type "it" for more

```



2.

```
type it for more
> db.zipcodes.aggregate([{$group:{_id:{state:"$state",city:"$city"},pop:{$sum:"$pop"}}},{ $sort:{pop:1}},{ $group:{_id:"$_id.state",avgCitypop:{$avg:"$pop"}}},{ $limit:3}])
{ "_id" : "ND", "avgCitypop" : 1645.0309278350514 }
{ "_id" : "RI", "avgCitypop" : 19292.653846153848 }
{ "_id" : "AK", "avgCitypop" : 2976.4918032786886 }
>
```