

Part 6 :

Help commands-

1] to show all data bases

Show dbs

2] to show all the collections

Show Collections

3] to show all the users

show users

4] Display help on DB methods

db.help()

5] Display help on Collection

db.mycol.help()

6] Creates a new collection or view

db.createCollection(name, options)

7] Finds one arbitrary document

db.ships.findOne()

8] Finds all documents and using nice formatting

db.ships.find().pretty()

9] Shows only the names of the ships

db.ships.find({}, {name:true, _id:false})

10] Finds one document by attribute

db.ships.findOne({'name':'USS Defiant'})

11] Replaces the whole document

db.ships.update({name : 'USS Prometheus'}, {name : 'USS Something'})

12] sets / changes certain attributes of a given document

db.ships.update({name : 'USS Something'}, {\$set : {operator : 'Starfleet', class : 'Prometheus'}})

13] removes an attribute from a given document

db.ships.update({name : 'USS Something'}, {\$unset : {operator : 1}})

14] Creating an index

```
db.ships.ensureIndex({name : 1})
```

15] Dropping an index

```
db.ships.dropIndex({name : 1})
```

Aggregation-

16] Counts the number of ships per operator

```
db.ships.aggregate([{$group : {_id : "$operator", num_ships : {$sum : 1}}}]
```

17] Combination of \$project-stage and \$group-stage

```
db.ships.aggregate([{$project : {_id : 0, operator : {$toLowerCase : "$operator"}, crew : {$multiply" :  
["$crew",10]}}}]
```

18] \$sum - Summing up values

```
db.ships.aggregate([{$group : {_id : "$operator", num_ships : {$sum : "$crew"}}}]
```

19] \$avg Calculating average values

```
db.ships.aggregate([{$group : {_id : "$operator", num_ships : {$avg : "$crew"}}}]
```

20] \$min / \$max Finding min/max values

```
db.ships.aggregate([{$group : {_id : "$operator", num_ships : {$min : "$crew"}}}]
```

21] \$push Pushing values to a result array

```
db.ships.aggregate([{$group : {_id : "$operator", classes : {$push: "$class"}}}]
```

22] \$addToSet Pushing values to a result array without duplicates

```
db.ships.aggregate([{$group : {_id : "$operator", classes : {$addToSet : "$class"}}}]
```

23] \$first / \$last Getting the first / last document

```
db.ships.aggregate([{$group : {_id : "$operator", last_class : {$last : "$class"}}}]
```

Screenshots for reference:

```
Select Command Prompt - mongo
> show dbs
AccessLog      0.003GB
JavaMovieLens  0.001GB
admin          0.000GB
config         0.000GB
local          0.000GB
movielens      0.004GB
mydb           0.000GB
nysedb         0.043GB
sayali         0.000GB
test           0.008GB
> use ships
switched to db ships
> db.createCollection("ships")
{ "ok" : 1 }
> show collections
ships
> db.ships.insert({name:'USS Enterprise-D',operator:'Starfleet',type:'Explorer',class:'Galaxy',crew:750,codes:[10,11,12]})
WriteResult({ "nInserted" : 1 })
> db.ships.insert({name:'USS Prometheus',operator:'Starfleet',class:'Prometheus',crew:4,codes:[1,14,17]})
WriteResult({ "nInserted" : 1 })
> db.ships.insert({name:'USS Defiant',operator:'Starfleet',class:'Defiant',crew:50,codes:[10,17,19]})
WriteResult({ "nInserted" : 1 })
> db.ships.insert({name:'IKS Buruk',operator:'Klingon Empire',class:'Warship',crew:40,codes:[100,110,120]})
WriteResult({ "nInserted" : 1 })
> db.ships.insert({name:'IKS Somraw',operator:'Klingon Empire',class:'Raptor',crew:50,codes:[101,111,120]})
WriteResult({ "nInserted" : 1 })
> db.ships.insert({name:'Scimitar',operator:'Romulan Star Empire',type:'Warbird',class:'Warbird',crew:25,codes:[201,211,220]})
WriteResult({ "nInserted" : 1 })
> db.ships.insert({name:'Narada',operator:'Romulan Star Empire',type:'Warbird',class:'Warbird',crew:65,codes:[251,251,220]})
WriteResult({ "nInserted" : 1 })
>
```

```
Command Prompt - mongo
> db.ships.findOne()
{
  "_id" : ObjectId("5d9125c8e693eeb86ce9dfe2"),
  "name" : "USS Enterprise-D",
  "operator" : "Starfleet",
  "type" : "Explorer",
  "class" : "Galaxy",
  "crew" : 750,
  "codes" : [
    10,
    11,
    12
  ]
}
> db.ships.find().pretty()
{
  "_id" : ObjectId("5d9125c8e693eeb86ce9dfe2"),
  "name" : "USS Enterprise-D",
  "operator" : "Starfleet",
  "type" : "Explorer",
  "class" : "Galaxy",
  "crew" : 750,
  "codes" : [
    10,
    11,
    12
  ]
}
{
  "_id" : ObjectId("5d9125c8e693eeb86ce9dfe3"),
  "name" : "USS Prometheus",
  "operator" : "Starfleet",
  "class" : "Prometheus",
  "crew" : 4,
  "codes" : [
    1,

```

64 Command Prompt - mongo

```
> db.ships.find({}, {name:true, _id:false})
{ "name" : "USS Enterprise-D" }
{ "name" : "USS Something" }
{ "name" : "USS Defiant" }
{ "name" : "IKS Buruk" }
{ "name" : "IKS Somraw" }
{ "name" : "Scimitar" }
{ "name" : "Narada" }
> db.ships.update({name : 'USS Prometheus'}, {name : 'USS Something'})
WriteResult({ "nMatched" : 0, "nUpserted" : 0, "nModified" : 0 })
> db.ships.update({name : 'USS Something'}, {$set : {operator : 'Starfleet', class : 'Prometheus'}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.ships.update({name : 'USS Something'}, {$unset : {operator : 1}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.ships.count()
7
>
```

65 Command Prompt - mongo

```
> db.ships.ensureIndex({name : 1})
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}
> db.ships.dropIndex({name : 1})
{ "nIndexesWas" : 2, "ok" : 1 }
> db.ships.totalIndexSize()
20480
>
```

66 Command Prompt - mongo

```
> db.ships.aggregate([{$group : {_id : "$operator", num_ships :
... {$sum : 1}}}}]
{ "_id" : " Klingon Empire", "num_ships" : 2 }
{ "_id" : null, "num_ships" : 1 }
{ "_id" : "Romulan Star Empire", "num_ships" : 2 }
{ "_id" : "Starfleet", "num_ships" : 2 }
> db.ships.aggregate([{$group : {_id : "$operator", num_ships : {$sum : "$screw"}}}}]
{ "_id" : null, "num_ships" : 0 }
{ "_id" : " Klingon Empire", "num_ships" : 90 }
{ "_id" : "Starfleet", "num_ships" : 800 }
{ "_id" : "Romulan Star Empire", "num_ships" : 90 }
> db.ships.aggregate([{$group : {_id : "$operator", num_ships : {$avg : "$screw"}}}}]
{ "_id" : null, "num_ships" : null }
{ "_id" : " Klingon Empire", "num_ships" : 45 }
{ "_id" : "Starfleet", "num_ships" : 400 }
{ "_id" : "Romulan Star Empire", "num_ships" : 45 }
> db.ships.aggregate([{$group : {_id : "$operator", num_ships : {$min : "$screw"}}}}]
{ "_id" : null, "num_ships" : null }
{ "_id" : " Klingon Empire", "num_ships" : 40 }
{ "_id" : "Starfleet", "num_ships" : 50 }
{ "_id" : "Romulan Star Empire", "num_ships" : 25 }
> db.ships.aggregate([{$group : {_id : "$operator", classes : {$push : "$class"}}}}]
{ "_id" : " Klingon Empire", "classes" : [ "Warship", "Raptor" ] }
{ "_id" : null, "classes" : [ "Prometheus" ] }
{ "_id" : "Romulan Star Empire", "classes" : [ "Warbird", "Warbird" ] }
{ "_id" : "Starfleet", "classes" : [ "Galaxy", "Defiant" ] }
> db.ships.aggregate([{$group : {_id : "$operator", classes : {$addToSet :
... "$class"}}}}]
{ "_id" : null, "classes" : [ "Prometheus" ] }
{ "_id" : " Klingon Empire", "classes" : [ "Warship", "Raptor" ] }
{ "_id" : "Starfleet", "classes" : [ "Galaxy", "Defiant" ] }
{ "_id" : "Romulan Star Empire", "classes" : [ "Warbird" ] }
>
```