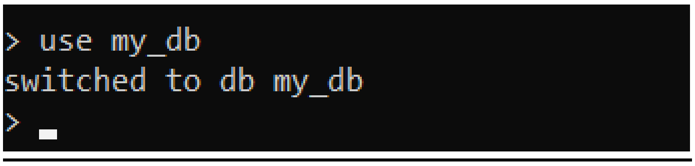
BIBD Mini Project

Q1. Implementation of NOSQL database – MognoDB.

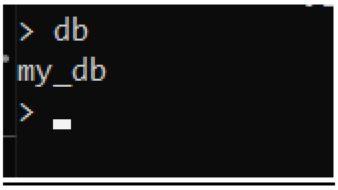
Commands:

- To use a database with name **<mydb>**, then **use DATABASE** statement would be as follows



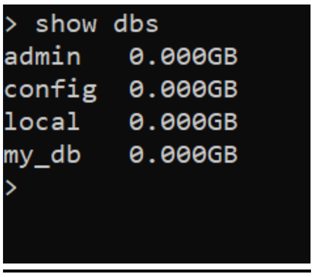
```
> use my_db
switched to db my_db
> _
```

- To check your currently selected database, use the command **db.**



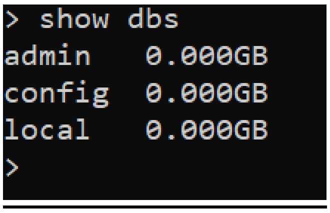
```
> db
my_db
> _
```

- To check your databases list, use the command **show dbs**.



```
> show dbs
admin   0.000GB
config  0.000GB
local   0.000GB
my_db   0.000GB
>
```

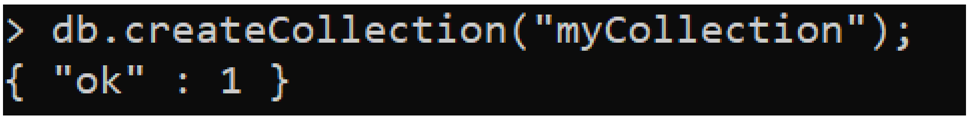
- To drop a existing database. Use command **db.dropDatabase()**



```
> show dbs
admin   0.000GB
config  0.000GB
local   0.000GB
>
```

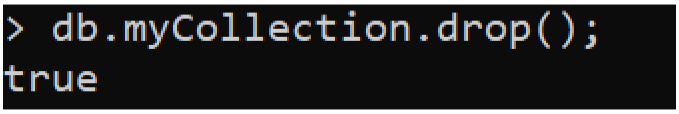
We can see that the the database 'my_db' has been deleted.

- To create Collection i.e Table in mongo db use command **db.createCollection('Collection_Name');**



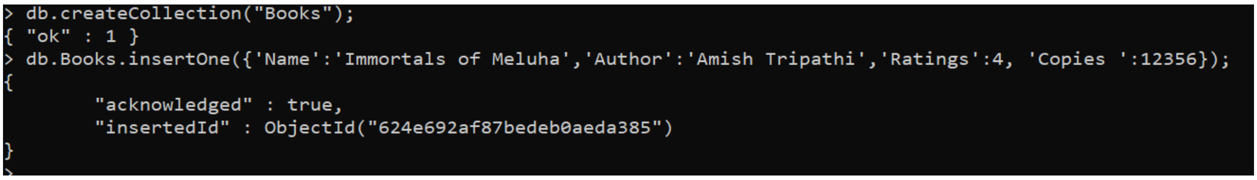
```
> db.createCollection("myCollection");
{ "ok" : 1 }
```

- To drop a Collection from database use command:

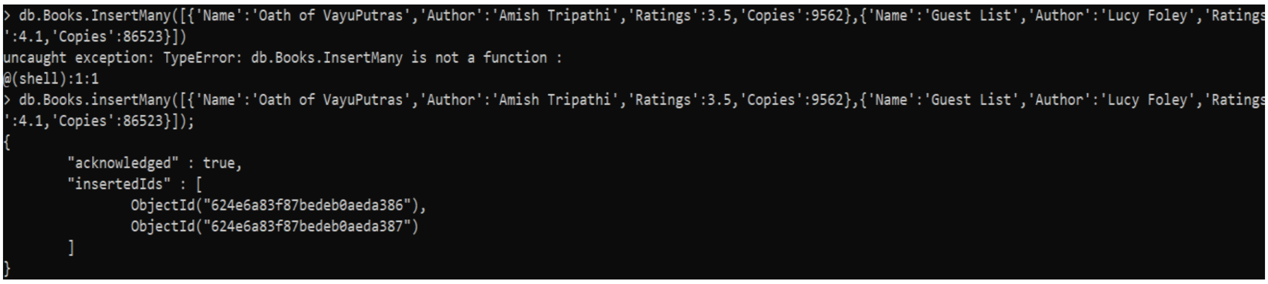


```
> db.myCollection.drop();
true
```

- To insert data into MongoDB collection we use insertOne() or insertMany() commands.

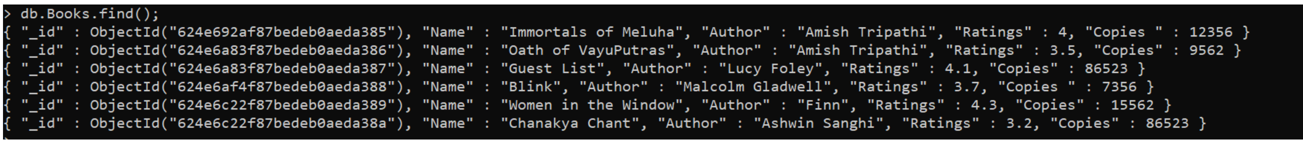


```
> db.createCollection("Books");
{ "ok" : 1 }
> db.Books.insertOne({'Name':'Immortals of Meluha','Author':'Amish Tripathi','Ratings':4, 'Copies ':12356});
{
        "acknowledged" : true,
        "insertedId" : ObjectId("624e692af87bedeb0aeda385")
}
>
```



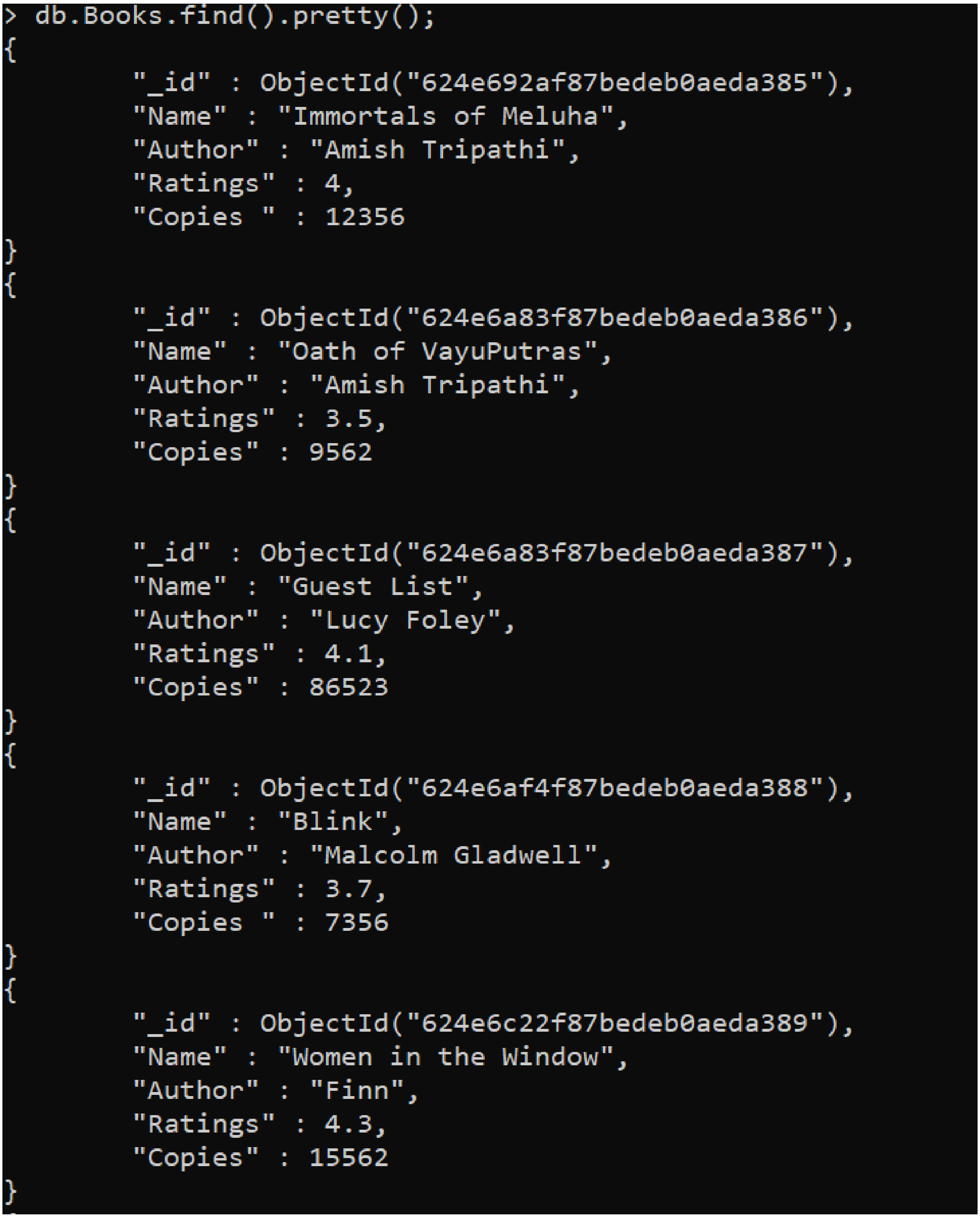
```
> db.Books.InsertMany([{'Name':'Oath of VayuPutras','Author':'Amish Tripathi','Ratings':3.5,'Copies':9562},{'Name':'Guest List','Author':'Lucy Foley','Ratings
':4.1,'Copies':86523}])
uncaught exception: TypeError: db.Books.InsertMany is not a function :
@(shell):1:1
> db.Books.insertMany([{'Name':'Oath of VayuPutras','Author':'Amish Tripathi','Ratings':3.5,'Copies':9562},{'Name':'Guest List','Author':'Lucy Foley','Ratings
':4.1,'Copies':86523}]);
{
        "acknowledged" : true,
        "insertedIds" : [
                ObjectId("624e6a83f87bedeb0aeda386"),
                ObjectId("624e6a83f87bedeb0aeda387")
        ]
}
```

- To Display the records



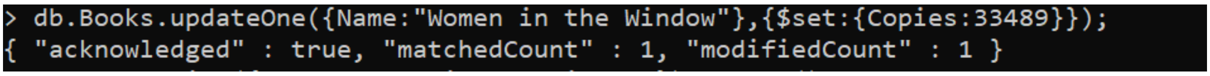
```
> db.Books.find();
{ "_id" : ObjectId("624e692af87bedeb0aeda385"), "Name" : "Immortals of Meluha", "Author" : "Amish Tripathi", "Ratings" : 4, "Copies " : 12356 }
{ "_id" : ObjectId("624e6a83f87bedeb0aeda386"), "Name" : "Oath of VayuPutras", "Author" : "Amish Tripathi", "Ratings" : 3.5, "Copies" : 9562 }
{ "_id" : ObjectId("624e6a83f87bedeb0aeda387"), "Name" : "Guest List", "Author" : "Lucy Foley", "Ratings" : 4.1, "Copies" : 86523 }
{ "_id" : ObjectId("624e6af4f87bedeb0aeda388"), "Name" : "Blink", "Author" : "Malcolm Gladwell", "Ratings" : 3.7, "Copies " : 7356 }
{ "_id" : ObjectId("624e6c22f87bedeb0aeda389"), "Name" : "Women in the Window", "Author" : "Finn", "Ratings" : 4.3, "Copies" : 15562 }
{ "_id" : ObjectId("624e6c22f87bedeb0aeda38a"), "Name" : "Chanakya Chant", "Author" : "Ashwin Sanghi", "Ratings" : 3.2, "Copies" : 86523 }
```

- To display the record in proper format use pretty



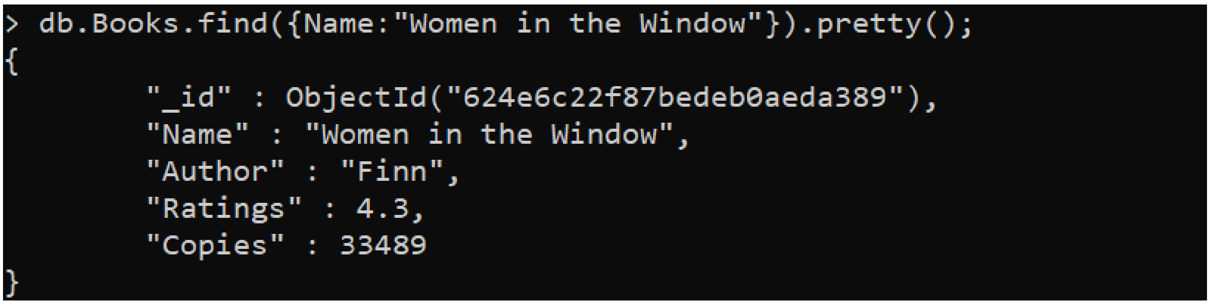
```
> db.Books.find().pretty();
{
        "_id" : ObjectId("624e692af87bedeb0aeda385"),
        "Name" : "Immortals of Meluha",
        "Author" : "Amish Tripathi",
        "Ratings" : 4,
        "Copies " : 12356
}
{
        "_id" : ObjectId("624e6a83f87bedeb0aeda386"),
        "Name" : "Oath of VayuPutras",
        "Author" : "Amish Tripathi",
        "Ratings" : 3.5,
        "Copies" : 9562
}
{
        "_id" : ObjectId("624e6a83f87bedeb0aeda387"),
        "Name" : "Guest List",
        "Author" : "Lucy Foley",
        "Ratings" : 4.1,
        "Copies" : 86523
}
{
        "_id" : ObjectId("624e6af4f87bedeb0aeda388"),
        "Name" : "Blink",
        "Author" : "Malcolm Gladwell",
        "Ratings" : 3.7,
        "Copies " : 7356
}
{
        "_id" : ObjectId("624e6c22f87bedeb0aeda389"),
        "Name" : "Women in the Window",
        "Author" : "Finn",
        "Ratings" : 4.3,
        "Copies" : 15562
}
```

- As we can see from above screenshot that the copies of book ‘Women in the window’ is 15562 we will update it to 33489 using below command.



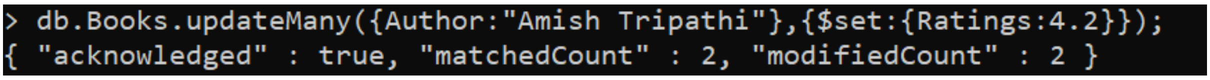
```
> db.Books.updateOne({Name:"Women in the Window"},{$set:{Copies:33489}});
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
```

Let’s See the Updated Record:



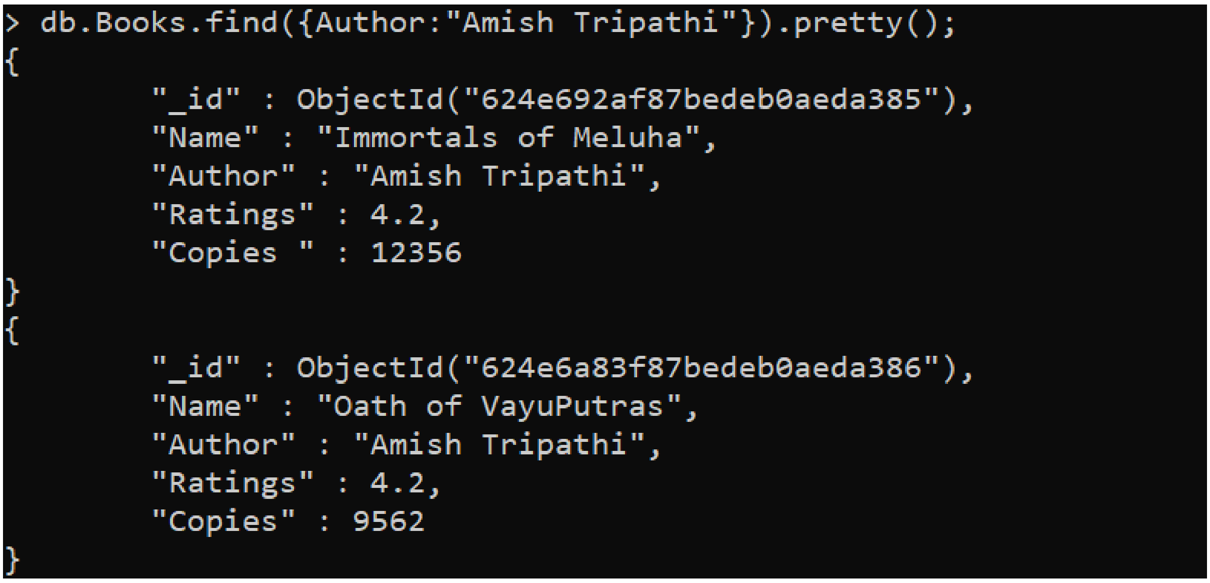
```
> db.Books.find({Name:"Women in the Window"}).pretty();
{
        "_id" : ObjectId("624e6c22f87bedeb0aeda389"),
        "Name" : "Women in the Window",
        "Author" : "Finn",
        "Ratings" : 4.3,
        "Copies" : 33489
}
```

- We can see that, there are 2 records in collections for Amish Tripathi, so we update the ratings of both the records at once.



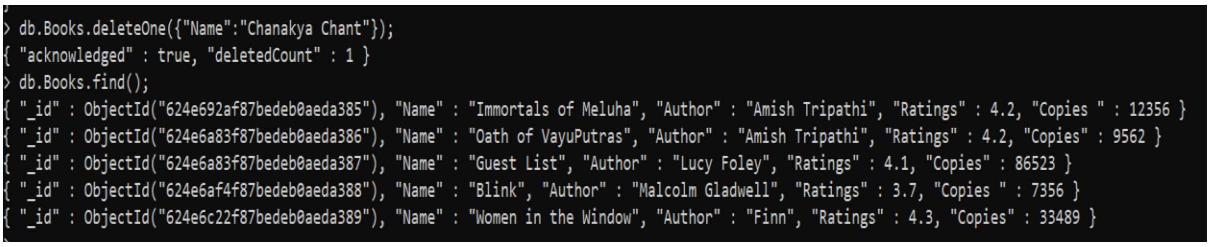
```
> db.Books.updateMany({Author:"Amish Tripathi"},{$set:{Ratings:4.2}});
{ "acknowledged" : true, "matchedCount" : 2, "modifiedCount" : 2 }
```

- We can see that the ratings is been changes to 4.2 for both records in below screenshot:



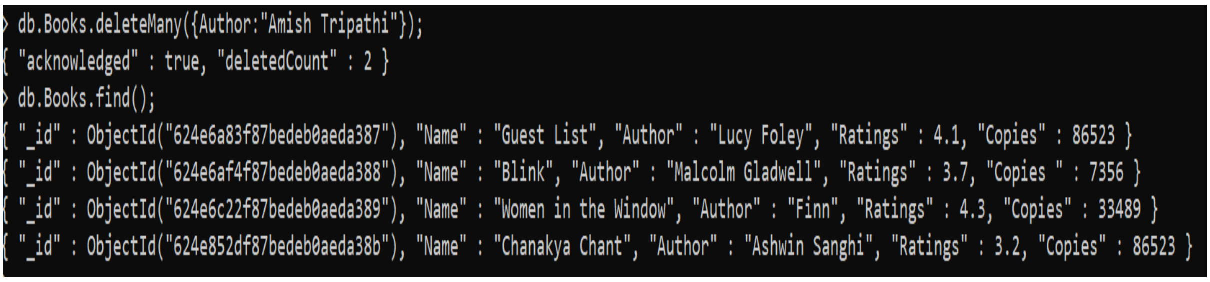
```
> db.Books.find({Author:"Amish Tripathi"}).pretty();
{
        "_id" : ObjectId("624e692af87bedeb0aeda385"),
        "Name" : "Immortals of Meluha",
        "Author" : "Amish Tripathi",
        "Ratings" : 4.2,
        "Copies " : 12356
}
{
        "_id" : ObjectId("624e6a83f87bedeb0aeda386"),
        "Name" : "Oath of VayuPutras",
        "Author" : "Amish Tripathi",
        "Ratings" : 4.2,
        "Copies" : 9562
}
```

- To delete a single record:



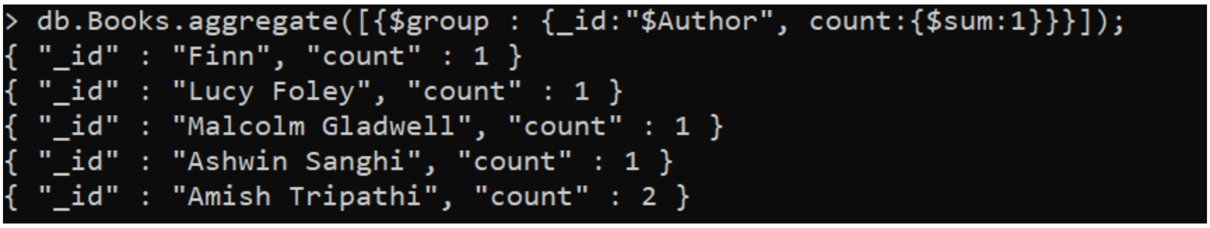
```
> db.Books.deleteOne({"Name":"Chanakya Chant"});
{ "acknowledged" : true, "deletedCount" : 1 }
> db.Books.find();
{ "_id" : ObjectId("624e692af87bedeb0aeda385"), "Name" : "Immortals of Meluha", "Author" : "Amish Tripathi", "Ratings" : 4.2, "Copies " : 12356 }
{ "_id" : ObjectId("624e6a83f87bedeb0aeda386"), "Name" : "Oath of VayuPutras", "Author" : "Amish Tripathi", "Ratings" : 4.2, "Copies" : 9562 }
{ "_id" : ObjectId("624e6a83f87bedeb0aeda387"), "Name" : "Guest List", "Author" : "Lucy Foley", "Ratings" : 4.1, "Copies" : 86523 }
{ "_id" : ObjectId("624e6af4f87bedeb0aeda388"), "Name" : "Blink", "Author" : "Malcolm Gladwell", "Ratings" : 3.7, "Copies " : 7356 }
{ "_id" : ObjectId("624e6c22f87bedeb0aeda389"), "Name" : "Women in the Window", "Author" : "Finn", "Ratings" : 4.3, "Copies" : 33489 }
```

- To delete a multiple record:



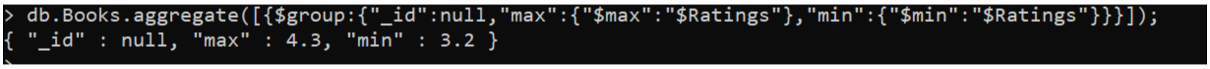
```
> db.Books.deleteMany({Author:"Amish Tripathi"});
{ "acknowledged" : true, "deletedCount" : 2 }
> db.Books.find();
{ "_id" : ObjectId("624e6a83f87bedeb0aeda387"), "Name" : "Guest List", "Author" : "Lucy Foley", "Ratings" : 4.1, "Copies" : 86523 }
{ "_id" : ObjectId("624e6af4f87bedeb0aeda388"), "Name" : "Blink", "Author" : "Malcolm Gladwell", "Ratings" : 3.7, "Copies " : 7356 }
{ "_id" : ObjectId("624e6c22f87bedeb0aeda389"), "Name" : "Women in the Window", "Author" : "Finn", "Ratings" : 4.3, "Copies" : 33489 }
{ "_id" : ObjectId("624e852df87bedeb0aeda38b"), "Name" : "Chanakya Chant", "Author" : "Ashwin Sanghi", "Ratings" : 3.2, "Copies" : 86523 }
```

- Using the aggregate function to get the count by author:



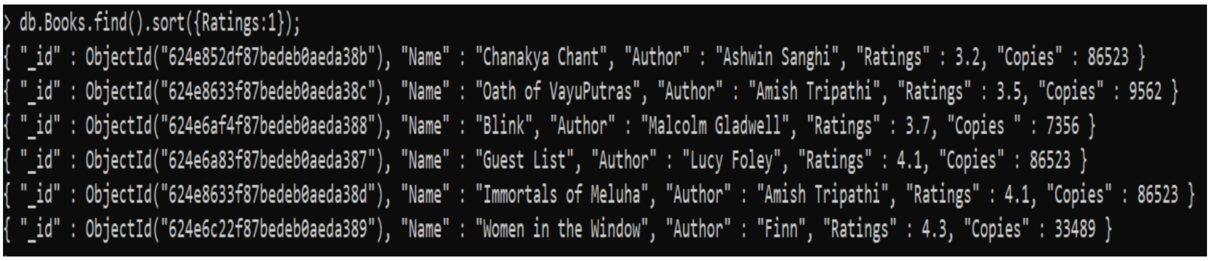
```
> db.Books.aggregate([{$group : {_id:"$Author", count:{$sum:1}}}]);
{ "_id" : "Finn", "count" : 1 }
{ "_id" : "Lucy Foley", "count" : 1 }
{ "_id" : "Malcolm Gladwell", "count" : 1 }
{ "_id" : "Ashwin Sanghi", "count" : 1 }
{ "_id" : "Amish Tripathi", "count" : 2 }
```

- We get max and min records based on ratings:



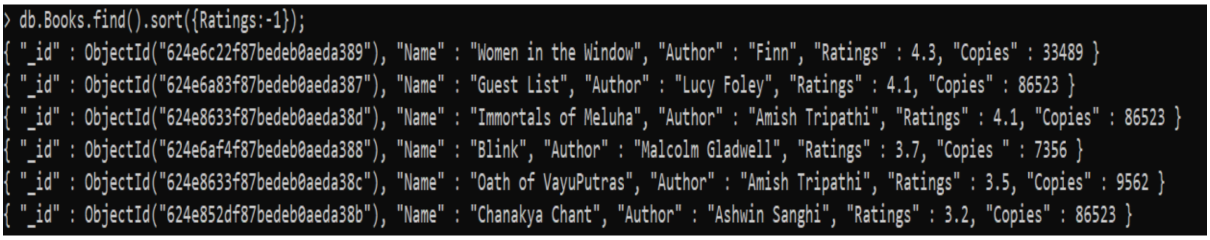
```
> db.Books.aggregate([{$group:{"_id":null,"max":{"$max":"$Ratings"},"min":{"$min":"$Ratings"}}}]);
{ "_id" : null, "max" : 4.3, "min" : 3.2 }
```

- Sorting in ascending order based on ratings:



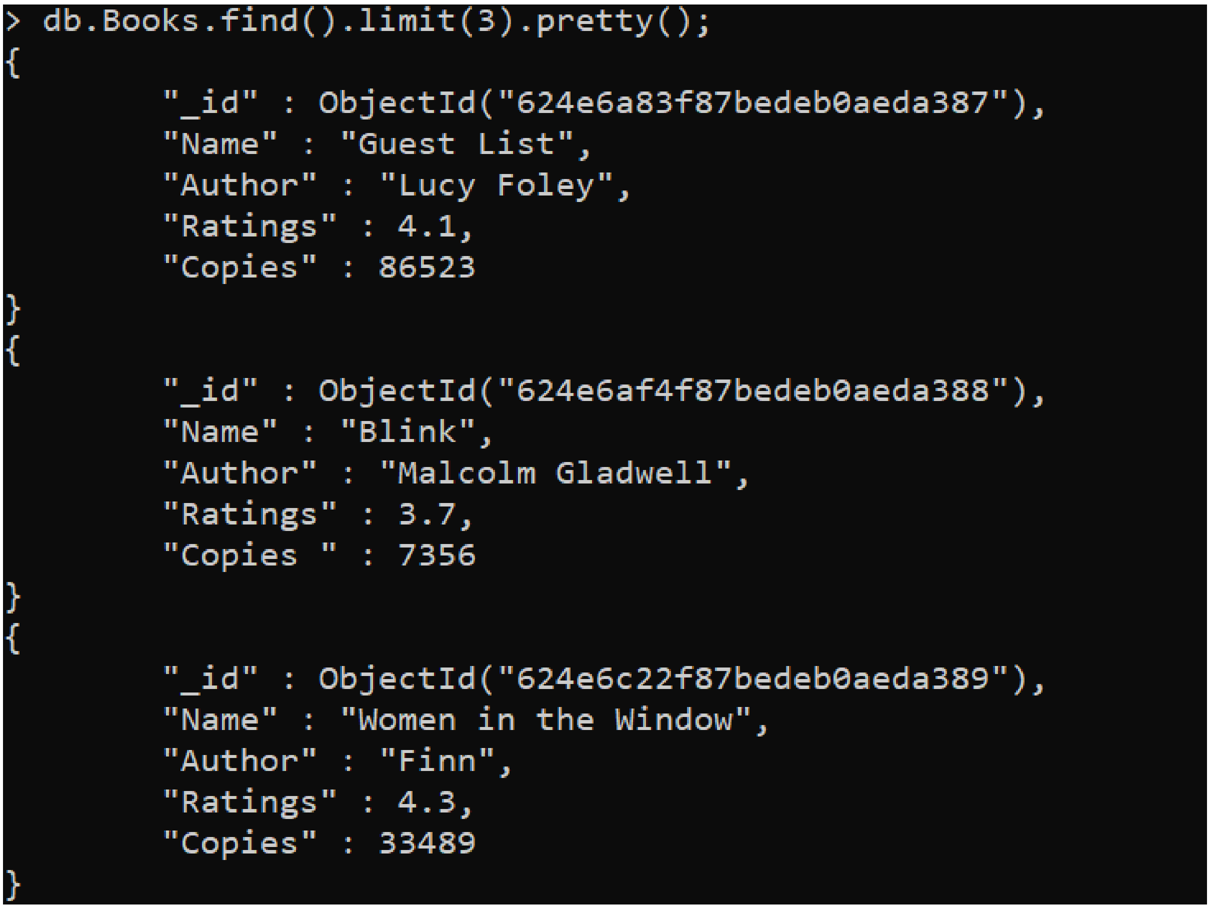
```
> db.Books.find().sort({Ratings:1});
{ "_id" : ObjectId("624e852df87bedeb0aeda38b"), "Name" : "Chanakya Chant", "Author" : "Ashwin Sanghi", "Ratings" : 3.2, "Copies" : 86523 }
{ "_id" : ObjectId("624e8633f87bedeb0aeda38c"), "Name" : "Oath of VayuPutras", "Author" : "Amish Tripathi", "Ratings" : 3.5, "Copies" : 9562 }
{ "_id" : ObjectId("624e6af4f87bedeb0aeda388"), "Name" : "Blink", "Author" : "Malcolm Gladwell", "Ratings" : 3.7, "Copies " : 7356 }
{ "_id" : ObjectId("624e6a83f87bedeb0aeda387"), "Name" : "Guest List", "Author" : "Lucy Foley", "Ratings" : 4.1, "Copies" : 86523 }
{ "_id" : ObjectId("624e8633f87bedeb0aeda38d"), "Name" : "Immortals of Meluha", "Author" : "Amish Tripathi", "Ratings" : 4.1, "Copies" : 86523 }
{ "_id" : ObjectId("624e6c22f87bedeb0aeda389"), "Name" : "Women in the Window", "Author" : "Finn", "Ratings" : 4.3, "Copies" : 33489 }
```

- Sorting in descending order based on ratings:



```
> db.Books.find().sort({Ratings:-1});
{ "_id" : ObjectId("624e6c22f87bedeb0aeda389"), "Name" : "Women in the Window", "Author" : "Finn", "Ratings" : 4.3, "Copies" : 33489 }
{ "_id" : ObjectId("624e6a83f87bedeb0aeda387"), "Name" : "Guest List", "Author" : "Lucy Foley", "Ratings" : 4.1, "Copies" : 86523 }
{ "_id" : ObjectId("624e8633f87bedeb0aeda38d"), "Name" : "Immortals of Meluha", "Author" : "Amish Tripathi", "Ratings" : 4.1, "Copies" : 86523 }
{ "_id" : ObjectId("624e6af4f87bedeb0aeda388"), "Name" : "Blink", "Author" : "Malcolm Gladwell", "Ratings" : 3.7, "Copies " : 7356 }
{ "_id" : ObjectId("624e8633f87bedeb0aeda38c"), "Name" : "Oath of VayuPutras", "Author" : "Amish Tripathi", "Ratings" : 3.5, "Copies" : 9562 }
{ "_id" : ObjectId("624e852df87bedeb0aeda38b"), "Name" : "Chanakya Chant", "Author" : "Ashwin Sanghi", "Ratings" : 3.2, "Copies" : 86523 }
```

- WE can use limit to display specific number of records:
  Here out of 6 only 3 records are displayed



```
> db.Books.find().limit(3).pretty();
{
        "_id" : ObjectId("624e6a83f87bedeb0aeda387"),
        "Name" : "Guest List",
        "Author" : "Lucy Foley",
        "Ratings" : 4.1,
        "Copies" : 86523
}
{
        "_id" : ObjectId("624e6af4f87bedeb0aeda388"),
        "Name" : "Blink",
        "Author" : "Malcolm Gladwell",
        "Ratings" : 3.7,
        "Copies " : 7356
}
{
        "_id" : ObjectId("624e6c22f87bedeb0aeda389"),
        "Name" : "Women in the Window",
        "Author" : "Finn",
        "Ratings" : 4.3,
        "Copies" : 33489
}
```