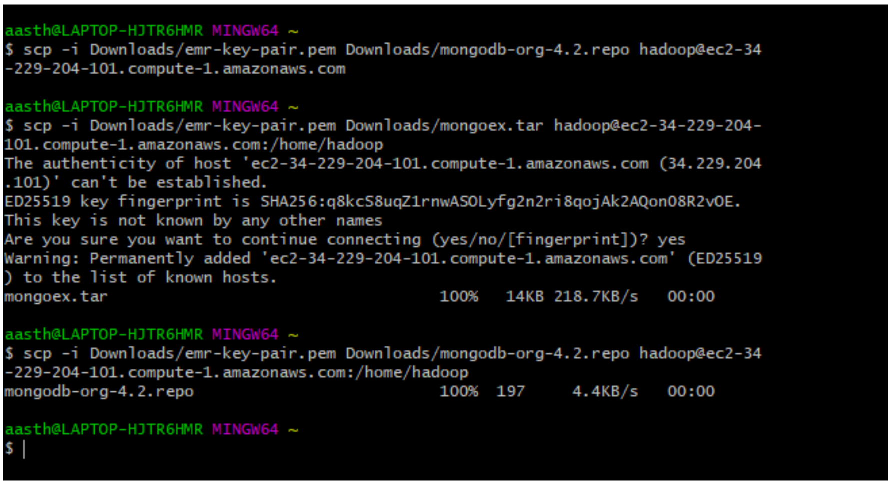
Big Data Technologies-CSP554

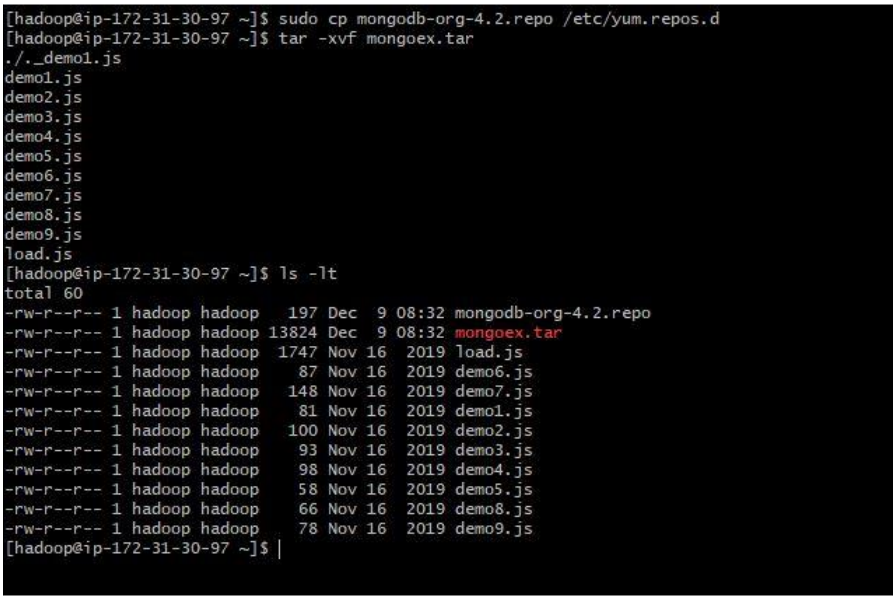
Assignment-13

Step B -Downloading (mongoex.tar, mongodb-org-4.2.repo) to master node



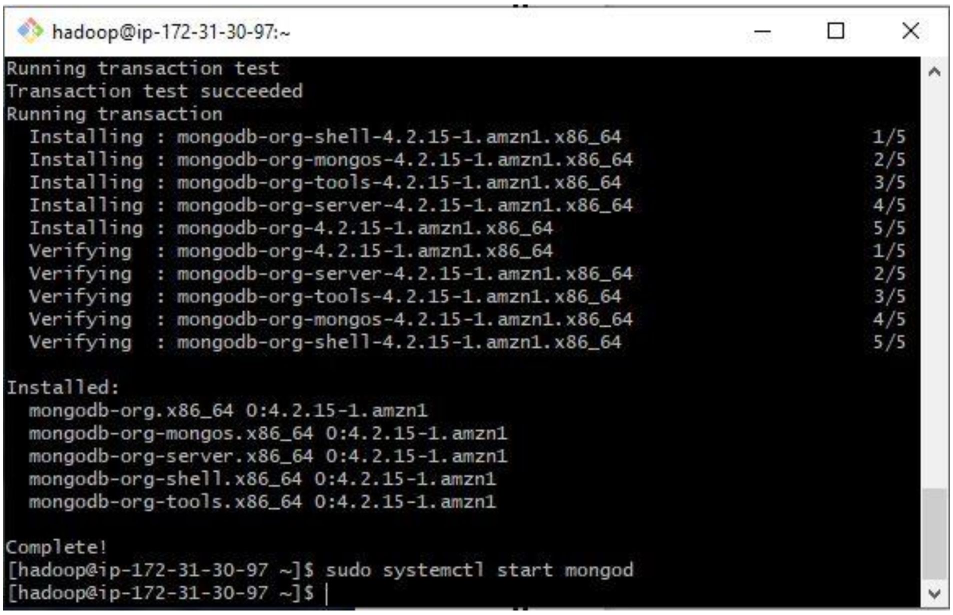
```
aasth@LAPTOP-HJTR6HMR MINGW64 ~
$ scp -i Downloads/emr-key-pair.pem Downloads/mongodb-org-4.2.repo hadoop@ec2-34
-229-204-101.compute-1.amazonaws.com

aasth@LAPTOP-HJTR6HMR MINGW64 ~
$ scp -i Downloads/emr-key-pair.pem Downloads/mongoex.tar hadoop@ec2-34-229-204-
101.compute-1.amazonaws.com:/home/hadoop
The authenticity of host 'ec2-34-229-204-101.compute-1.amazonaws.com (34.229.204
.101)' can't be established.
ED25519 key fingerprint is SHA256:q8kcS8uqZ1rnwASOLyfg2n2ri8qojAk2AQon08R2vOE.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-34-229-204-101.compute-1.amazonaws.com' (ED25519
) to the list of known hosts.
mongoex.tar                                   100%   14KB 218.7KB/s   00:00

aasth@LAPTOP-HJTR6HMR MINGW64 ~
$ scp -i Downloads/emr-key-pair.pem Downloads/mongodb-org-4.2.repo hadoop@ec2-34
-229-204-101.compute-1.amazonaws.com:/home/hadoop
mongodb-org-4.2.repo                          100%  197     4.4KB/s   00:00

aasth@LAPTOP-HJTR6HMR MINGW64 ~
$ |
```

Step C – Install assignment software (mongoex.zip, mongodb-org-4.2.repo)



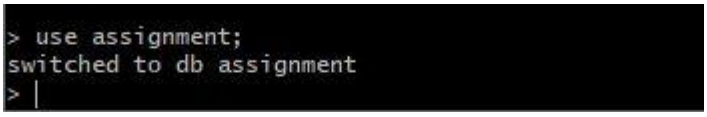
```
[hadoop@ip-172-31-30-97 ~]$ sudo cp mongodb-org-4.2.repo /etc/yum.repos.d
[hadoop@ip-172-31-30-97 ~]$ tar -xvf mongoex.tar
./._demo1.js
demo1.js
demo2.js
demo3.js
demo4.js
demo5.js
demo6.js
demo7.js
demo8.js
demo9.js
load.js
[hadoop@ip-172-31-30-97 ~]$ ls -lt
total 60
-rw-r--r-- 1 hadoop hadoop   197 Dec  9 08:32 mongodb-org-4.2.repo
-rw-r--r-- 1 hadoop hadoop 13824 Dec  9 08:32 mongoex.tar
-rw-r--r-- 1 hadoop hadoop  1747 Nov 16  2019 load.js
-rw-r--r-- 1 hadoop hadoop    87 Nov 16  2019 demo6.js
-rw-r--r-- 1 hadoop hadoop   148 Nov 16  2019 demo7.js
-rw-r--r-- 1 hadoop hadoop    81 Nov 16  2019 demo1.js
-rw-r--r-- 1 hadoop hadoop   100 Nov 16  2019 demo2.js
-rw-r--r-- 1 hadoop hadoop    93 Nov 16  2019 demo3.js
-rw-r--r-- 1 hadoop hadoop    98 Nov 16  2019 demo4.js
-rw-r--r-- 1 hadoop hadoop    58 Nov 16  2019 demo5.js
-rw-r--r-- 1 hadoop hadoop    66 Nov 16  2019 demo8.js
-rw-r--r-- 1 hadoop hadoop    78 Nov 16  2019 demo9.js
[hadoop@ip-172-31-30-97 ~]$ |
```

Step D – Install and start MongoDB



```
Running transaction test
Transaction test succeeded
Running transaction
  Installing : mongodb-org-shell-4.2.15-1.amzn1.x86_64                 1/5
  Installing : mongodb-org-mongos-4.2.15-1.amzn1.x86_64                2/5
  Installing : mongodb-org-tools-4.2.15-1.amzn1.x86_64                 3/5
  Installing : mongodb-org-server-4.2.15-1.amzn1.x86_64                4/5
  Installing : mongodb-org-4.2.15-1.amzn1.x86_64                       5/5
  Verifying  : mongodb-org-4.2.15-1.amzn1.x86_64                       1/5
  Verifying  : mongodb-org-server-4.2.15-1.amzn1.x86_64                2/5
  Verifying  : mongodb-org-tools-4.2.15-1.amzn1.x86_64                 3/5
  Verifying  : mongodb-org-mongos-4.2.15-1.amzn1.x86_64                4/5
  Verifying  : mongodb-org-shell-4.2.15-1.amzn1.x86_64                 5/5

Installed:
  mongodb-org.x86_64 0:4.2.15-1.amzn1
  mongodb-org-mongos.x86_64 0:4.2.15-1.amzn1
  mongodb-org-server.x86_64 0:4.2.15-1.amzn1
  mongodb-org-shell.x86_64 0:4.2.15-1.amzn1
  mongodb-org-tools.x86_64 0:4.2.15-1.amzn1

Complete!
[hadoop@ip-172-31-30-97 ~]$ sudo systemctl start mongod
[hadoop@ip-172-31-30-97 ~]$ |
```

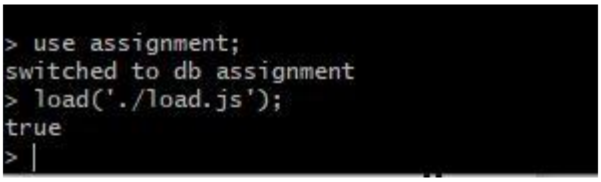
Step G – Setting up the assignment database



```
> use assignment;
switched to db assignment
> |
```

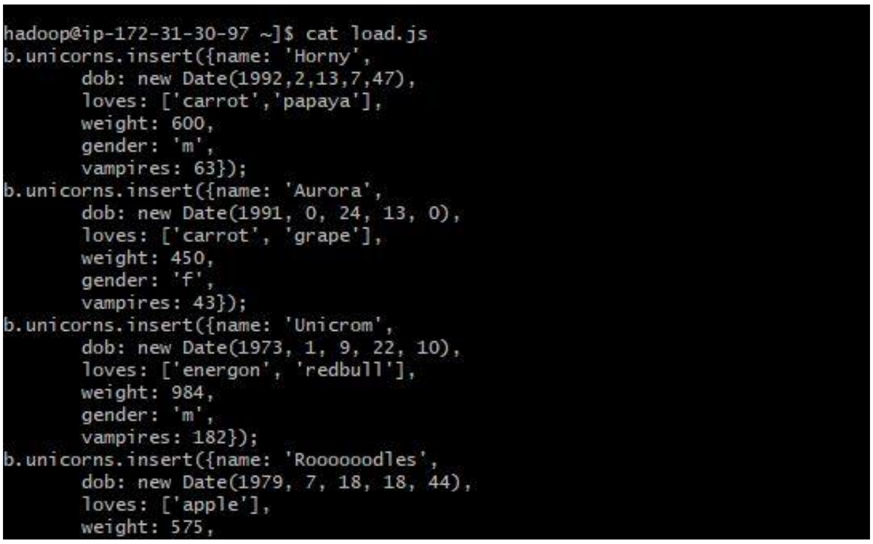
Load a collection called ‘unicorns’ with sample data by executing the script load.js in the MongoDB shell as follows (don’t cut and paste this, type it in manually):

Command used - load(‘./load.js’);



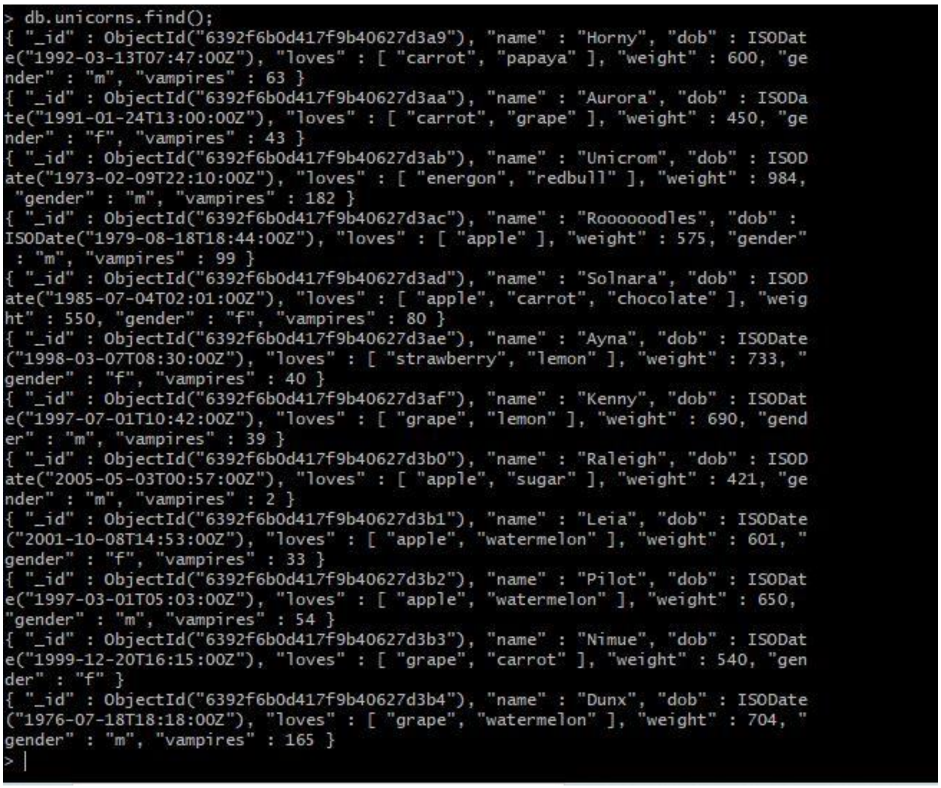
```
> use assignment;
switched to db assignment
> load('./load.js');
true
> |
```

Note, look at the content of the script file (via the other terminal window you have opened to the EC2 instance) to see how each unicorn is described.



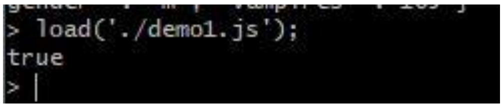
```
hadoop@ip-172-31-30-97 ~]$ cat load.js
b.unicorns.insert({name: 'Horny',
        dob: new Date(1992,2,13,7,47),
        loves: ['carrot','papaya'],
        weight: 600,
        gender: 'm',
        vampires: 63});
b.unicorns.insert({name: 'Aurora',
        dob: new Date(1991, 0, 24, 13, 0),
        loves: ['carrot', 'grape'],
        weight: 450,
        gender: 'f',
        vampires: 43});
b.unicorns.insert({name: 'Unicrom',
        dob: new Date(1973, 1, 9, 22, 10),
        loves: ['energon', 'redbull'],
        weight: 984,
        gender: 'm',
        vampires: 182});
b.unicorns.insert({name: 'Roooooodles',
        dob: new Date(1979, 7, 18, 18, 44),
        loves: ['apple'],
        weight: 575,
```

Confirm this has all worked by executing the following command in the MongoDB shell: db.unicorns.find();



```
> db.unicorns.find();
{ "_id" : ObjectId("6392f6b0d417f9b40627d3a9"), "name" : "Horny", "dob" : ISODat
e("1992-03-13T07:47:00Z"), "loves" : [ "carrot", "papaya" ], "weight" : 600, "ge
nder" : "m", "vampires" : 63 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3aa"), "name" : "Aurora", "dob" : ISODa
te("1991-01-24T13:00:00Z"), "loves" : [ "carrot", "grape" ], "weight" : 450, "ge
nder" : "f", "vampires" : 43 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3ab"), "name" : "Unicrom", "dob" : ISOD
ate("1973-02-09T22:10:00Z"), "loves" : [ "energon", "redbull" ], "weight" : 984,
 "gender" : "m", "vampires" : 182 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3ac"), "name" : "Roooooodles", "dob" :
ISODate("1979-08-18T18:44:00Z"), "loves" : [ "apple" ], "weight" : 575, "gender"
 : "m", "vampires" : 99 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3ad"), "name" : "Solnara", "dob" : ISOD
ate("1985-07-04T02:01:00Z"), "loves" : [ "apple", "carrot", "chocolate" ], "weig
ht" : 550, "gender" : "f", "vampires" : 80 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3ae"), "name" : "Ayna", "dob" : ISODate
("1998-03-07T08:30:00Z"), "loves" : [ "strawberry", "lemon" ], "weight" : 733, "
gender" : "f", "vampires" : 40 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3af"), "name" : "Kenny", "dob" : ISODat
e("1997-07-01T10:42:00Z"), "loves" : [ "grape", "lemon" ], "weight" : 690, "gend
er" : "m", "vampires" : 39 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3b0"), "name" : "Raleigh", "dob" : ISOD
ate("2005-05-03T00:57:00Z"), "loves" : [ "apple", "sugar" ], "weight" : 421, "ge
nder" : "m", "vampires" : 2 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3b1"), "name" : "Leia", "dob" : ISODate
("2001-10-08T14:53:00Z"), "loves" : [ "apple", "watermelon" ], "weight" : 601, "
gender" : "f", "vampires" : 33 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3b2"), "name" : "Pilot", "dob" : ISODat
e("1997-03-01T05:03:00Z"), "loves" : [ "apple", "watermelon" ], "weight" : 650,
"gender" : "m", "vampires" : 54 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3b3"), "name" : "Nimue", "dob" : ISODat
e("1999-12-20T16:15:00Z"), "loves" : [ "grape", "carrot" ], "weight" : 540, "gen
der" : "f" }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3b4"), "name" : "Dunx", "dob" : ISODate
("1976-07-18T18:18:00Z"), "loves" : [ "grape", "watermelon" ], "weight" : 704, "
gender" : "m", "vampires" : 165 }
> |
```

Note, the files named “demo*.js” (also included in the mongoex.tar file) provide examples of how to operate in the unicorn collection. These are a VERY good idea to review and understand and will present you with information helpful in completing the assignment. Also, try them out by typing something like load(./demo1.js’);

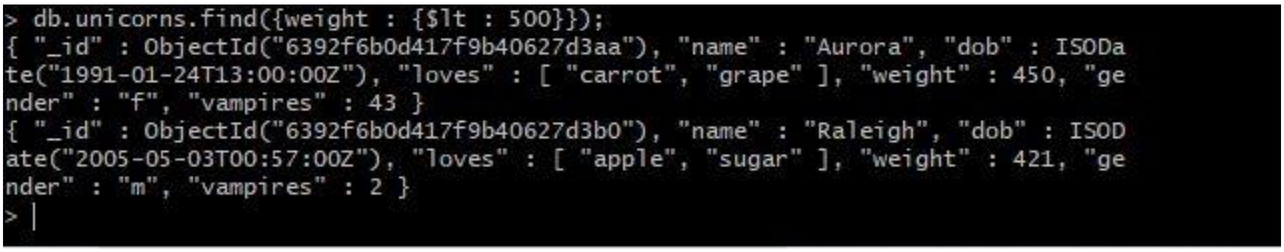


```
> load('./demo1.js');
true
> |
```

Exercise 1) (1 point)

Write a command that finds all unicorns having weight less than 500 pounds. Include the code you executed and some sample output as the result of this exercise. Recall you can place the command, if you choose, into a file, say ‘ex1.js’ and execute it with the load command as above and similarly for the following exercises.

Command used:- “db.unicorns.find({weight : {$lt : 500}});”

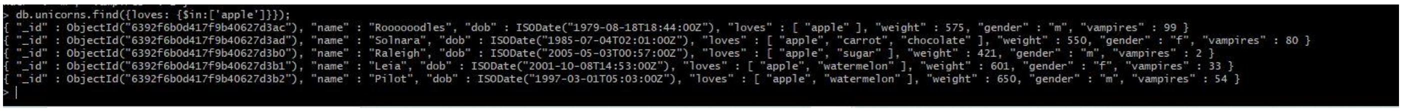


```
> db.unicorns.find({weight : {$lt : 500}});
{ "_id" : ObjectId("6392f6b0d417f9b40627d3aa"), "name" : "Aurora", "dob" : ISODa
te("1991-01-24T13:00:00Z"), "loves" : [ "carrot", "grape" ], "weight" : 450, "ge
nder" : "f", "vampires" : 43 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3b0"), "name" : "Raleigh", "dob" : ISOD
ate("2005-05-03T00:57:00Z"), "loves" : [ "apple", "sugar" ], "weight" : 421, "ge
nder" : "m", "vampires" : 2 }
> |
```

Exercise 2) (1 point)

Write a command that finds all unicorns who love apples. Hint, search for “apple”. Include the code you executed and some sample output as the result of this exercise.

Sol) Command used: - “db.unicorns.find({loves: {$in:['apple']}});”



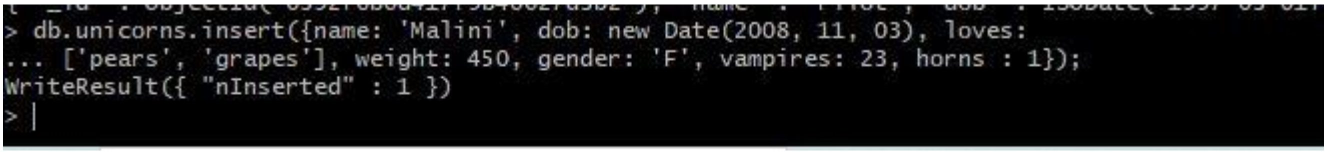
```
> db.unicorns.find({loves: {$in:['apple']}});
{ "_id" : ObjectId("6392f6b0d417f9b40627d3ac"), "name" : "Roooooodles", "dob" : ISODate("1979-08-18T18:44:00Z"), "loves" : [ "apple" ], "weight" : 575, "gender" : "m", "vampires" : 99 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3ad"), "name" : "Solnara", "dob" : ISODate("1985-07-04T02:01:00Z"), "loves" : [ "apple", "carrot", "chocolate" ], "weight" : 550, "gender" : "f", "vampires" : 80 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3b0"), "name" : "Raleigh", "dob" : ISODate("2005-05-03T00:57:00Z"), "loves" : [ "apple", "sugar" ], "weight" : 421, "gender" : "m", "vampires" : 2 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3b1"), "name" : "Leia", "dob" : ISODate("2001-10-08T14:53:00Z"), "loves" : [ "apple", "watermelon" ], "weight" : 601, "gender" : "f", "vampires" : 33 }
{ "_id" : ObjectId("6392f6b0d417f9b40627d3b2"), "name" : "Pilot", "dob" : ISODate("1997-03-01T05:03:00Z"), "loves" : [ "apple", "watermelon" ], "weight" : 650, "gender" : "m", "vampires" : 54 }
> |
```

Exercise 3) (1 point)

Write a command that adds a unicorn with the following attributes to the collection. Note dob means “Date of Birth.”

Attribute	Value(s)
name	Malini
dob	11/03/2008
loves	pears, grapes
weight	450
gender	F
vampires	23

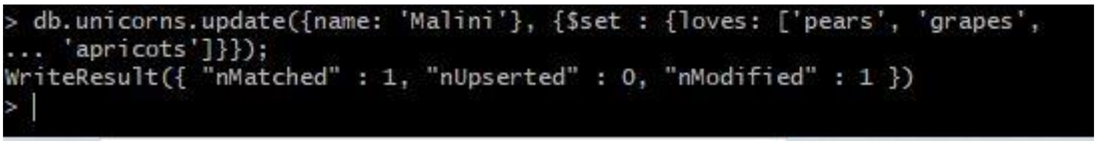
Command used: - “db.unicorns.insert({name: 'Malini', dob: new Date(2008, 11, 03), loves: ['pears', 'grapes'], weight: 450, gender: 'F', vampires: 23, horns : 1});”



```
> db.unicorns.insert({name: 'Malini', dob: new Date(2008, 11, 03), loves:
... ['pears', 'grapes'], weight: 450, gender: 'F', vampires: 23, horns : 1});
WriteResult({ "nInserted" : 1 })
> |
```

Exercise 4) (1 point) Write a command that updates the above record to add apricots to the list of things Malini loves. Include the code you executed and some sample output showing the addition.

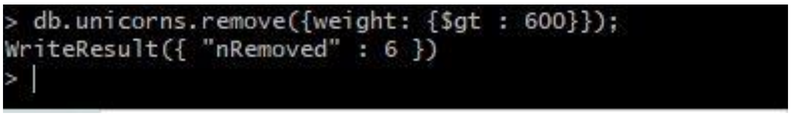
Sol) Command used: - “db.unicorns.update({name: 'Malini'}, {$set : {loves: ['pears', 'grapes', 'apricots']}});”



```
> db.unicorns.update({name: 'Malini'}, {$set : {loves: ['pears', 'grapes',
... 'apricots']}});
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> |
```

Exercise 5) (1 point) Write a command that deletes all unicorns with weight more than 600 pounds. Include the code you executed and some sample output as the result of this exercise.

Sol) Command used: - “db.unicorns.remove({weight: {$gt : 600}});”



```
> db.unicorns.remove({weight: {$gt : 600}});
WriteResult({ "nRemoved" : 6 })
> |
```

Submitted By: -

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