MongoDb
&
MySql

Assessment

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1. **install latest version of MongoDB from apt-get repository**

```
maithely@maithely:~$ sudo apt install -y mongodb
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libboost-program-options1.65.1 libgoogle-perftools4 libpcrecpp0v5 libsnappy1v5 libtcmalloc-minimal4 libyaml-cpp0.
  mongodb-clients mongodb-server mongodb-server-core
The following NEW packages will be installed:
  libboost-program-options1.65.1 libgoogle-perftools4 libpcrecpp0v5 libsnappy1v5 libtcmalloc-minimal4 libyaml-cpp0.
  mongodb-clients mongodb-server mongodb-server-core
0 upgraded, 11 newly installed, 0 to remove and 3 not upgraded.
Need to get 53.4 MB of archives.
After this operation, 217 MB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 libboost-program-options1.65.1 amd64 1.65.1+dfsg-0ubunt
Get:2 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 libtcmalloc-minimal4 amd64 2.5-2.2ubuntu3 [91.6 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 libgoogle-perftools4 amd64 2.5-2.2ubuntu3 [190 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 libpcrecpp0v5 amd64 2:8.39-9 [15.3 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu bionic/universe amd64 libyaml-cpp0.5v5 amd64 0.5.2-4ubuntu1 [150 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu bionic/universe amd64 mongo-tools amd64 3.6.3-0ubuntu1 [12.3 MB]
Get:7 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 libsnappy1v5 amd64 1.1.7-1 [16.0 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 mongodb-clients amd64 1:3.6.3-0ubuntu1.1 [2
Get:9 http://in.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 mongodb-server-core amd64 1:3.6.3-0ubuntu1.
Get:10 http://in.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 mongodb-server all 1:3.6.3-0ubuntu1.1 [12.
Get:11 http://in.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 mongodb amd64 1:3.6.3-0ubuntu1.1 [9,968 B]
Fetched 53.4 MB in 11s (4,839 kB/s)
Selecting previously unselected package libboost-program-options1.65.1:amd64.
(Reading database ... 165884 files and directories currently installed.)
Preparing to unpack .../00-libboost-program-options1.65.1_1.65.1+dfsg-0ubuntu5_amd64.deb ...
Unpacking libboost-program-options1.65.1:amd64 (1.65.1+dfsg-0ubuntu5) ...
Selecting previously unselected package libtcmalloc-minimal4.
Preparing to unpack .../01-libtcmalloc-minimal4_2.5-2.2ubuntu3_amd64.deb ...
```

2. **Create a database student**

```
maithely@maithely:~$ mongo
MongoDB shell version v3.6.3
connecting to: mongodb://127.0.0.1:27017
MongoDB server version: 3.6.3
Welcome to the MongoDB shell.
For interactive help, type "help".
For more comprehensive documentation, see
        http://docs.mongodb.org/
Questions? Try the support group
        http://groups.google.com/group/mongodb-user
Server has startup warnings:
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten]
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] ** WARNING
ge engine
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] **
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten]
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten] ** WARNING
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten] **
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten]
> use student
switched to db student
>
```

3. **Insert operation : 5 students data (Name, Contact, City, Roll No, Branch)**

```
> db.createCollection("stu")
{ "ok" : 1 }
> db.stu.insert({name:'maithely',contact:75686,city:'delhi',_rollno:1,branch:'cs'})
WriteResult({ "nInserted" : 1 })
> db.stu.insert({name:'pooja',contact:56775686,city:'doon',_rollno:2,branch:'ec'})
WriteResult({ "nInserted" : 1 })
> db.stu.insert({name:'garima',contact:48546,city:'doon',_rollno:3,branch:'cc'})
WriteResult({ "nInserted" : 1 })
> db.stu.insert({name:'diksha',contact:112233,city:'uk',_rollno:4,branch:'ps'})
WriteResult({ "nInserted" : 1 })
> db.stu.insert({name:'ishita',contact:4455112233,city:'mussorie',_rollno:5,branch:'ml'})
WriteResult({ "nInserted" : 1 })
```

```
> db.stu.find()
{ "_id" : ObjectId("5e498e415a9029910723ae4f"), "name" : "maithely", "contact" : 75686, "city" : "delhi", "_rollno" : 1, "branch" : "cs" }
{ "_id" : ObjectId("5e498f185a9029910723ae50"), "name" : "pooja", "contact" : 56775686, "city" : "doon", "_rollno" : 2, "branch" : "ec" }
{ "_id" : ObjectId("5e498f465a9029910723ae51"), "name" : "garima", "contact" : 48546, "city" : "doon", "_rollno" : 3, "branch" : "cc" }
{ "_id" : ObjectId("5e498f785a9029910723ae52"), "name" : "diksha", "contact" : 112233, "city" : "uk", "_rollno" : 4, "branch" : "ps" }
{ "_id" : ObjectId("5e498f9e5a9029910723ae53"), "name" : "ishita", "contact" : 4455112233, "city" : "mussorie", "_rollno" : 5, "branch" : "ml" }
}
>
```

4. **Read operation : All the students belong to a particular city**

```
> db.stu.find({city:"doon"}).forEach(printjson);
{
        "_id" : ObjectId("5e498f185a9029910723ae50"),
        "name" : "pooja",
        "contact" : 56775686,
        "city" : "doon",
        "_rollno" : 2,
        "branch" : "ec"
}
{
        "_id" : ObjectId("5e498f465a9029910723ae51"),
        "name" : "garima",
        "contact" : 48546,
        "city" : "doon",
        "_rollno" : 3,
        "branch" : "cc"
}
>
```

5. **Update operation : Update the branch of all the students to CSE**

> **db.stu.update({'branch':'cs'},{$set:{'branch':'CSE'}},{multi:true})**

```
> db.stu.update({}, {$set:{'branch':'CSE'}}, {multi:true})
WriteResult({ "nMatched" : 5, "nUpserted" : 0, "nModified" : 4 })
> db.stu.find()
{ "_id" : ObjectId("5e498e415a9029910723ae4f"), "name" : "maithely", "contact" : 75686, "city" : "delhi", "_rollno" : 1, "branch" : "CSE" }
{ "_id" : ObjectId("5e498f185a9029910723ae50"), "name" : "pooja", "contact" : 56775686, "city" : "doon", "_rollno" : 2, "branch" : "CSE" }
{ "_id" : ObjectId("5e498f465a9029910723ae51"), "name" : "garima", "contact" : 48546, "city" : "doon", "_rollno" : 3, "branch" : "CSE" }
{ "_id" : ObjectId("5e498f785a9029910723ae52"), "name" : "diksha", "contact" : 112233, "city" : "uk", "_rollno" : 4, "branch" : "CSE" }
{ "_id" : ObjectId("5e498f9e5a9029910723ae53"), "name" : "ishita", "contact" : 4455112233, "city" : "mussorie", "_rollno" : 5, "branch" : "CSE
" }
>
```

6. **Take dump of the database**

```
maithely@maithely:~$ mongodump --db student -o /home/maithely/mongodb/
2020-02-17T10:23:02.324+0530      writing student.stu to
2020-02-17T10:23:02.324+0530      writing student.student details to
2020-02-17T10:23:02.324+0530      done dumping student.student details (0 documents)
2020-02-17T10:23:02.325+0530      done dumping student.stu (5 documents)
maithely@maithely:~$
```

7. **Delete operation : Delete the record of last 2 students according to the roll number**

db.stu.remove({ _rollno : { $gt: 3 } })

8. **Drop the database**

use mydb //switched to db mydb
db.dropDatabase()
{ "dropped" : "mydb", "ok" : 1 } //db dropped

9. **Restore the database again to have the full data**

```
maithely@maithely:~$ mongorestore -d student /home/maithely/mongodb
2020-02-17T10:49:36.096+0530    the --db and --collection args should only be used when restoring f
and will not exist in the future; use --nsInclude instead
2020-02-17T10:49:36.097+0530    building a list of collections to restore from /home/maithely/mongo
2020-02-17T10:49:36.097+0530    don't know what to do with subdirectory "mongodb/student", skipping
2020-02-17T10:49:36.097+0530    done
maithely@maithely:~$ mongo
MongoDB shell version v3.6.3
connecting to: mongodb://127.0.0.1:27017
MongoDB server version: 3.6.3
Server has startup warnings:
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten]
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] ** WARNING: Using the XFS filesystem is str
ge engine
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] **        See http://dochub.mongodb.org/c
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten]
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten] ** WARNING: Access control is not enabled f
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten] **        Read and write access to data a
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten]
```

10. **Enable authentication on the Mongo**

```
maithely@maithely:~$ mongo --port 27017
MongoDB shell version v3.6.3
connecting to: mongodb://127.0.0.1:27017/
MongoDB server version: 3.6.3
Server has startup warnings:
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten]
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] ** WARNIN(
ge engine
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] **
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten]
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten] ** WARNIN(
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten] **
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten]
> use admin
switched to db admin
> db.createUser(
...    {
...      user: "myUserAdmin",
...      pwd: "abc123",
...      roles: [ { role: "userAdminAnyDatabase", db: "admin" } ]
...    }
... )
Successfully added user: {
        "user" : "myUserAdmin",
        "roles" : [
                {
                        "role" : "userAdminAnyDatabase",
                        "db" : "admin"
                }
        ]
}
> exit
```

```
maithely@maithely:~$ mongod --auth --port 27017 --dbpath /data/db1
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten] MongoDB star
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten] db version v
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten] git version:
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten] OpenSSL vers
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten] allocator: t
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten] modules: non
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten] build enviro
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten]     distarch
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten]     target_a
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten] options: { n
Path: "/data/db1" } }
2020-02-17T10:56:45.848+0530 I STORAGE  [initandlisten] exception in
inating
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten] now exiting
2020-02-17T10:56:45.848+0530 I CONTROL  [initandlisten] shutting dow
maithely@maithely:~$ mongo
MongoDB shell version v3.6.3
connecting to: mongodb://127.0.0.1:27017
MongoDB server version: 3.6.3
Server has startup warnings:
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten]
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] ** WARNING:
ge engine
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] **
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten]
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten] ** WARNING:
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten] **
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten]
> mongo --port 27017 -u "myUserAdmin" -p "abc123" --authenticationDa
2020-02-17T10:59:27.676+0530 E QUERY    [thread1] SyntaxError: missi
> mongo --port 27017 -u "myUserAdmin" -p "abc123" --authenticationDa
```

```
maithely@maithely:~$ mongo --port 27017 -u "myUserAdmin" -p "abc123" --authenticationDatabase "admin";
MongoDB shell version v3.6.3
connecting to: mongodb://127.0.0.1:27017/
MongoDB server version: 3.6.3
Server has startup warnings:
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten]
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with th
ge engine
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] **         See http://dochub.mongodb.org/core/prodnotes-filesystem
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten]
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten] ** WARNING: Access control is not enabled for the database.
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten] **         Read and write access to data and configuration is unres
2020-02-16T15:13:15.395+0530 I CONTROL  [initandlisten]
> mongo --port 27017
2020-02-17T10:59:57.397+0530 E QUERY    [thread1] SyntaxError: missing ; before statement @(shell):1:8
> mongo --port 27017;
2020-02-17T11:00:00.961+0530 E QUERY    [thread1] SyntaxError: missing ; before statement @(shell):1:8
> exit
bye
maithely@maithely:~$ mongo --port 27017
MongoDB shell version v3.6.3
connecting to: mongodb://127.0.0.1:27017/
MongoDB server version: 3.6.3
Server has startup warnings:
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten]
2020-02-16T15:13:14.741+0530 I STORAGE  [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with th
```

11. **Install another version of MongoDB from source (Version 2.6.3) and run it on port 27009**

Move the mongo file to opt folder

```
root@maithely:~# sudo mv ~/Downloads/mongodb-linux-x86_64-2.6.3 /opt/
root@maithely:~# 
```

Then add it to the bin

```
maithely@maithely:/etc/nginx/sites-enabled$ cd /opt/
maithely@maithely:/opt$ ls
google  lost+found  mongodb-linux-x86_64-2.6.3  tomcat
maithely@maithely:/opt$ cd mongodb-linux-x86_64-2.6.3/
maithely@maithely:/opt/mongodb-linux-x86_64-2.6.3$ l
bin/  GNU-AGPL-3.0  README  THIRD-PARTY-NOTICES
maithely@maithely:/opt/mongodb-linux-x86_64-2.6.3$ cd bin/
maithely@maithely:/opt/mongodb-linux-x86_64-2.6.3/bin$ l
bsondump*  mongod*      mongoexport*  mongoimport*  mongoperf*   mongos*      mongotop*
mongo*     mongodump*   mongofiles*   mongooplog*   mongorestore* mongostat*
maithely@maithely:/opt/mongodb-linux-x86_64-2.6.3/bin$ mkdir -p ~/data/db
maithely@maithely:/opt/mongodb-linux-x86_64-2.6.3/bin$ mon
mongo           mongodump       mongofiles      mongoperf       mongorestore    mongostat       monitor-sensor   montage-im6
mongod          mongoexport     mongoimport     mongoreplay     mongos          mongotop        montage          montage-im6.q16
maithely@maithely:/opt/mongodb-linux-x86_64-2.6.3/bin$ mongod --port 27009 --dbpath ~/data/db/
2020-02-26T13:04:41.745+0530 I CONTROL  [initandlisten] MongoDB starting : pid=26750 port=27009 dbpath=/home/maithely/data/db/ 64-bit host=mai
thely
2020-02-26T13:04:41.745+0530 I CONTROL  [initandlisten] db version v3.6.3
2020-02-26T13:04:41.745+0530 I CONTROL  [initandlisten] git version: 9586e557d54ef70f9ca4b43c26892cd55257e1a5
2020-02-26T13:04:41.745+0530 I CONTROL  [initandlisten] OpenSSL version: OpenSSL 1.1.1  11 Sep 2018
```

While the above daemon process is running in the terminal and then we netstat to check the port on another terminal

```
root@maithely:/var/www/html# sudo netstat -tulnp | grep mongo
tcp        0      0 127.0.0.1:27009         0.0.0.0:*               LISTEN      26750/mongod
tcp        0      0 127.0.0.1:27017         0.0.0.0:*               LISTEN      985/mongod
root@maithely:/var/www/html# 
```

12. **Create init service of Mongo installed later***

Make a file

```
maithely@maithely:~$ cd /lib/systemd/system
maithely@maithely:/lib/systemd/system$ sudo vim mongomaithely.service
```

File Edit View Search Terminal Tabs Help

maithely@maithely: /etc/systemd/system ×   maithely@maithely: /etc/systemd/system ×

```
[Unit1]
Description=second mongo service

[Service]
Type=simple
ExecStart=/opt/mongodb-linux-x86_64-2.6.3/bin/mongod --port 27009 --dbpath /home
/maithely/data/db

[Install]
WantedBy=multi--user.target
~
~
~
~
```

```
maithely@maithely:/lib/systemd/system$ sudo cp /lib/systemd/system/mongomaithely.service /etc/systemd/system/
maithely@maithely:/lib/systemd/system$ sudo chmod 644 /etc/systemd/system/mongomaithely.service
maithely@maithely:/lib/systemd/system$ sudo systemctl enable mongomaithely.service
Created symlink /etc/systemd/system/multi--user.target.wants/mongomaithely.service → /etc/systemd/system/mongomaithely.service.
maithely@maithely:/lib/systemd/system$ sudo systemctl start mongomaithely.service
```

```
maithely@maithely:/etc/systemd/system$ sudo systemctl status mongomaithely.service
● mongomaithely.service
   Loaded: loaded (/etc/systemd/system/mongomaithely.service; enabled;
   Active: active (running) since Wed 2020-02-26 13:35:19 IST; 4s ago
 Main PID: 28114 (mongod)
    Tasks: 4 (limit: 4915)
   CGroup: /system.slice/mongomaithely.service
           └─28114 /opt/mongodb-linux-x86_64-2.6.3/bin/mongod --port 2

Feb 26 13:35:19 maithely systemd[1]: Started mongomaithely.service.
Feb 26 13:35:19 maithely mongod[28114]: 2020-02-26T13:35:19.490+0530 [
Feb 26 13:35:19 maithely mongod[28114]: 2020-02-26T13:35:19.490+0530 [
Feb 26 13:35:19 maithely mongod[28114]: 2020-02-26T13:35:19.490+0530 [
Feb 26 13:35:19 maithely mongod[28114]: 2020-02-26T13:35:19.490+0530 [
Feb 26 13:35:19 maithely mongod[28114]: 2020-02-26T13:35:19.490+0530 [
Feb 26 13:35:19 maithely mongod[28114]: 2020-02-26T13:35:19.490+0530 [
Feb 26 13:35:19 maithely mongod[28114]: 2020-02-26T13:35:19.635+0530 [
Feb 26 13:35:19 maithely mongod[28114]: 2020-02-26T13:35:19.635+0530 [
Feb 26 13:35:23 maithely mongod[28114]: 2020-02-26T13:35:23.514+0530 [
lines 1-18/18 (END)
```

MySQL

13. **Install latest version of mysql from apt-get repository**

```
maithely@maithely:/tmp$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  galera-4 libdbd-mysql-perl libdbi-perl libmysqlclient20 libterm-readkey-perl socat
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  libevent-core-2.1-6 mysql-client-5.7 mysql-server-5.7 mysql-server-core-5.7
Suggested packages:
  mailx tinyca
The following packages will be REMOVED:
  mariadb-client mariadb-client-10.4 mariadb-server mariadb-server-10.4 mariadb-server-core-10.4
The following NEW packages will be installed:
  libevent-core-2.1-6 mysql-client-5.7 mysql-server mysql-server-5.7 mysql-server-core-5.7
0 upgraded, 5 newly installed, 5 to remove and 44 not upgraded.
Need to get 0 B/12.4 MB of archives.
After this operation, 11.2 MB disk space will be freed.
Do you want to continue? [Y/n] y
Preconfiguring packages ...
(Reading database ... 166031 files and directories currently installed.)
Removing mariadb-client (1:10.4.12+maria~bionic) ...
Removing mariadb-server (1:10.4.12+maria~bionic)
```

14. **Create a database student**

```
mysql> create database student;
Query OK, 1 row affected (0.00 sec)

mysql>
```

15. **Insert operation : 5 students data (Name, Contact, City, Roll No, Branch)**

```
mysql> use student
Database changed
mysql> create table student ( name varchar(25) ,contact int, city varchar(25), rollno int primary key, branch varchar(25));
Query OK, 0 rows affected (0.04 sec)

mysql> insert into student values ('maithely' , 7579287559, 'delhi', 1, ms);
ERROR 1054 (42S22): Unknown column 'ms' in 'field list'
mysql> insert into student values ('maithely' , 7579287559, 'delhi', 1,'ms');
ERROR 1264 (22003): Out of range value for column 'contact' at row 1
mysql> insert into student values ('maithely' , 75559, 'delhi', 1,'ms');
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values ('pooja' , 88639, 'doon', 2,'ca');
Query OK, 1 row affected (0.01 sec)

mysql> insert into student values ('garima' , 45389, 'doon', 3,'df');
Query OK, 1 row affected (0.01 sec)

mysql> insert into student values ('diksha' , 12345, 'uk', 4,'pu');
Query OK, 1 row affected (0.01 sec)

mysql> insert into student values ('ishita' ,98765, 'mussorie', 5,'ts');
Query OK, 1 row affected (0.02 sec)
```

```
mysql> select * from student;
+-----------+----------+----------+--------+--------+
| name      | contact  | city     | rollno | branch |
+-----------+----------+----------+--------+--------+
| maithely  |    75559 | delhi    |      1 | ms     |
| pooja     |    88639 | doon     |      2 | ca     |
| garima    |    45389 | doon     |      3 | df     |
| diksha    |    12345 | uk       |      4 | pu     |
| ishita    |    98765 | mussorie |      5 | ts     |
+-----------+----------+----------+--------+--------+
5 rows in set (0.00 sec)
```

16. **Read operation : All the students belong to a particular city**

```
mysql> select name from student where city='doon';
+--------+
| name   |
+--------+
| pooja  |
| garima |
+--------+
2 rows in set (0.00 sec)

mysql>
```

17. **Update operation : Update the branch of all the students to CSE**

```
mysql> update student set branch='CSE';
Query OK, 5 rows affected (0.01 sec)
Rows matched: 5  Changed: 5  Warnings: 0

mysql> select * from student;
+-----------+----------+----------+--------+--------+
| name      | contact  | city     | rollno | branch |
+-----------+----------+----------+--------+--------+
| maithely  |    75559 | delhi    |      1 | CSE    |
| pooja     |    88639 | doon     |      2 | CSE    |
| garima    |    45389 | doon     |      3 | CSE    |
| diksha    |    12345 | uk       |      4 | CSE    |
| ishita    |    98765 | mussorie |      5 | CSE    |
+-----------+----------+----------+--------+--------+
5 rows in set (0.00 sec)

mysql>
```

18. **Take dump of the database**

```
maithely@maithely:~$ mysqldump -u root -p student > dump.sql
Enter password:
maithely@maithely:~$ ls
assignment  Documents                mongodb       Pictures
bootcamp    Downloads                mongorestore  practice
dbase       dump.sql                 Music         Public
demo        examples.desktop mysqldump            sudo
demo1       file1.txt                mystartup.sh  Templates
Desktop     file.txt                 out.txt       Videos
```

```
maithely@maithely:~$ cat dump.sql
-- MySQL dump 10.13  Distrib 5.7.21, for Linux (x86_64)
--
-- Host: localhost    Database: student
-- -------------------------------------------------------
-- Server version        5.7.21-1ubuntu1

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!40101 SET NAMES utf8 */;
/*!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;
/*!40103 SET TIME_ZONE='+00:00' */;
/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;
/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0 */;
/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;
/*!40111 SET @OLD_SQL_NOTES=@@SQL_NOTES, SQL_NOTES=0 */;


--
-- Table structure for table `student`
--

DROP TABLE IF EXISTS `student`;
```

19. **Delete operation : Delete the record of last 2 students according to the roll number**

```
Database changed
mysql> delete from student order by rollno desc limit 2;
Query OK, 2 rows affected (0.02 sec)
```

```
mysql> select * from student;
+-----------+---------+--------+--------+--------+
| name      | contact | city   | rollno | branch |
+-----------+---------+--------+--------+--------+
| maithely  |   75559 | delhi  |      1 | CSE    |
| pooja     |   88639 | doon   |      2 | CSE    |
| garima    |   45389 | doon   |      3 | CSE    |
+-----------+---------+--------+--------+--------+
3 rows in set (0.00 sec)

mysql>
```

20. **Drop the database**

```
mysql> drop database student;
Query OK, 1 row affected (0.02 sec)

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
4 rows in set (0.00 sec)

mysql>
```

21. **Restore the database again to have the full data**

```
maithely@maithely:~$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 31
Server version: 5.7.21-1ubuntu1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database student;
Query OK, 1 row affected (0.00 sec)

mysql> exit
Bye
```

```
maithely@maithely:~$ mysql -u root -p student < dump.sql
Enter password:
```

```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| student            |
| sys                |
+--------------------+
5 rows in set (0.00 sec)

mysql>
```

22. **Enable authentication on the Mysql**

```
mysql> create user 'mack'@'localhost' identified by 'ttn1';
Query OK, 0 rows affected (0.00 sec)

mysql> grant select,insert on student.* to 'mack'@'localhost';
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> use student;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> select * from student;
+-----------+----------+-----------+--------+--------+
| name      | contact  | city      | rollno | branch |
+-----------+----------+-----------+--------+--------+
| maithely  |    75559 | delhi     |      1 | CSE    |
| pooja     |    88639 | doon      |      2 | CSE    |
| garima    |    45389 | doon      |      3 | CSE    |
| diksha    |    12345 | uk        |      4 | CSE    |
| ishita    |    98765 | mussorie  |      5 | CSE    |
+-----------+----------+-----------+--------+--------+
5 rows in set (0.00 sec)
```

```
maithely@maithely:~$ mysql -u mack -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 37
Server version: 5.7.21-1ubuntu1 (Ubuntu)
```

```
mysql> use student;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> delete from student where rollno=1;
ERROR 1142 (42000): DELETE command denied to user 'mack'@'localhost' for table 'student'
mysql>
```