# MySQL

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# 1 Introduction.

MySQL is a open source relational database management system(RDBMS) and it is based on structured query language(SQL). Also it is developed by oracle. which means MySQL databases can stores and give access to data points that are related to one another. Relational database each rows in table having unique ID. SQL is a computer language for eliciting information from databases.SQL is help to updating,maintaining and accessing data in database. MySQL is the one who keep the database organized exists data. MySQL is a open source software. MySQL can store large amount of records and easy to manage.
This report is all about the MySQL basic commands. such as creating and deleting databases,tables and users.

## 2 Login to MySQL as a root using Linux machine.

**mysql -u root -p** command line will lead you to log in to MySQL as the root user. Then system will ask about root password. Type your user password and press Enter. Now you are inside of MySQL software.

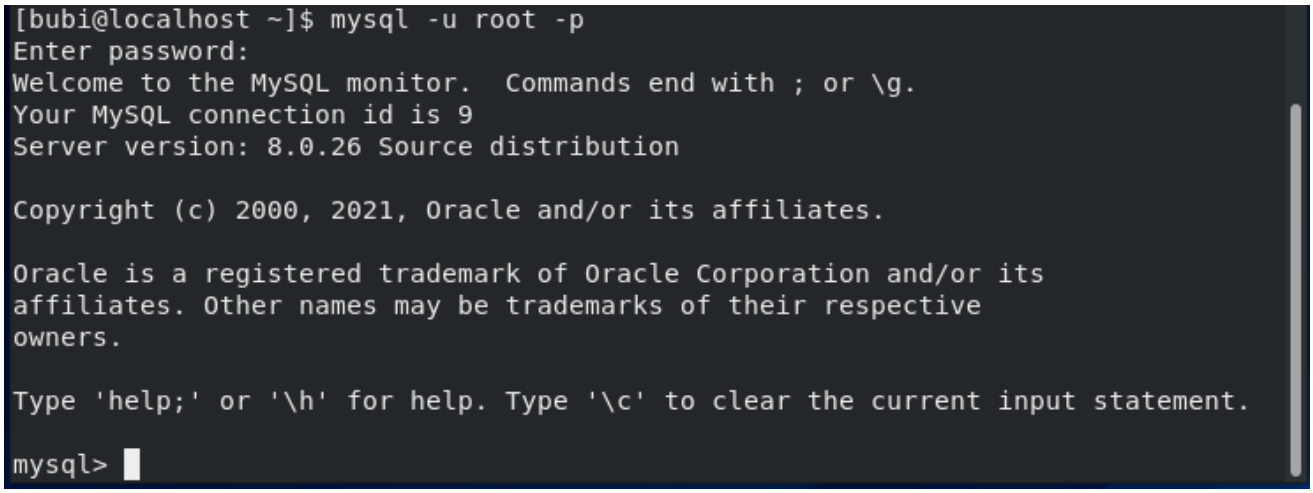


Figure 1: Example of MySQL root login.

## 3 The list of available MySQL databases.

Using **show databases;** command help to see the list of available databases. Before creating the database systerm looks like figure 02. In this report firsttable is the name for the created database. It is showing on figure 03.

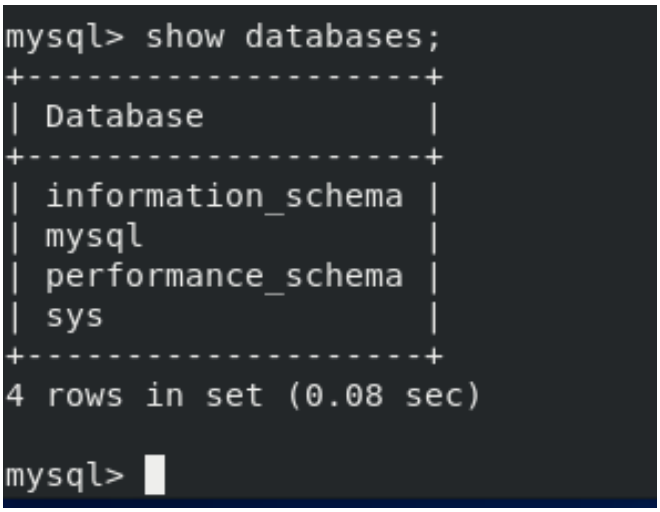


Figure 2: Cheaking the MySQL available databases.

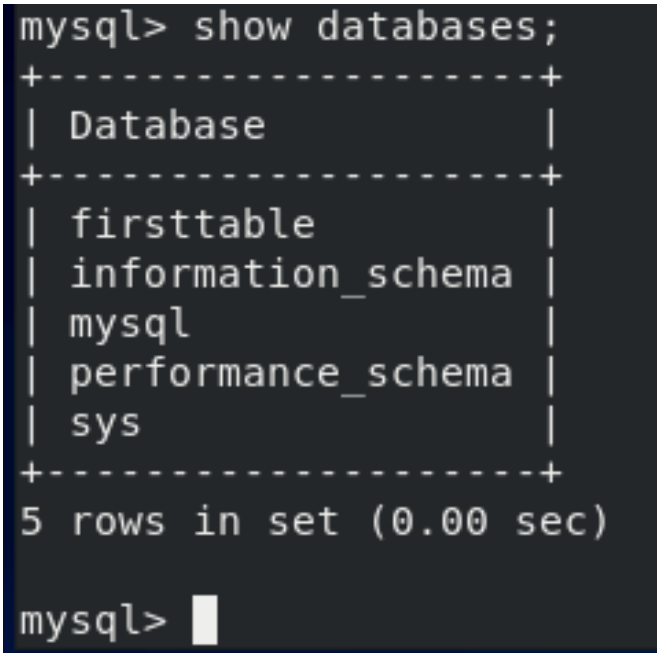


Figure 3: After MySQL database using database name as firsttable.

## 4 Create a new database.

Command for making new database is **create database [databasename];** users can use any name as a databasename. After that using **show database** helps to see the created database.(Figure 3)

```
mysql> create database firsttable;
Query OK, 1 row affected (0.04 sec)
```

Figure 4: Example of MySQL new database.

## 5 Grant access to the database for a non-root user.

To achieve this accomplishment firstly have to create a user and then set the permissions for that user to perform actions on the database. Command for create a user- **create user 'username'@'localhost' identified by 'password';** for grant acess to the new created database is- **grant all privileges on *.* to 'username'@localhost';** after giving the permissions for new user always have to reload all the privilege. for that command line is **flush privileges;** nonroot is the username for the report.

```
[bubi@localhost ~]$ mysql -u nonroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 15
Server version: 8.0.26 Source distribution

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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> show databases;
+--------------------+
| Database           |
+--------------------+
| firsttable         |
| information_schema |
+--------------------+
```

Figure 5: Example of access to database for a non-root user.

## 6 Log as a non-root user, switch to the newly created database and make new table.

using **mysql -u 'username' -p** command give access to log in to user created database. Typing **use firsttable;** command will enter user created database. for make inside database table used
**create table 'tablename'(**
**column 1 definition,**
**column 2 definition,**
**..... );**
To see created database can use **show tables;** command.

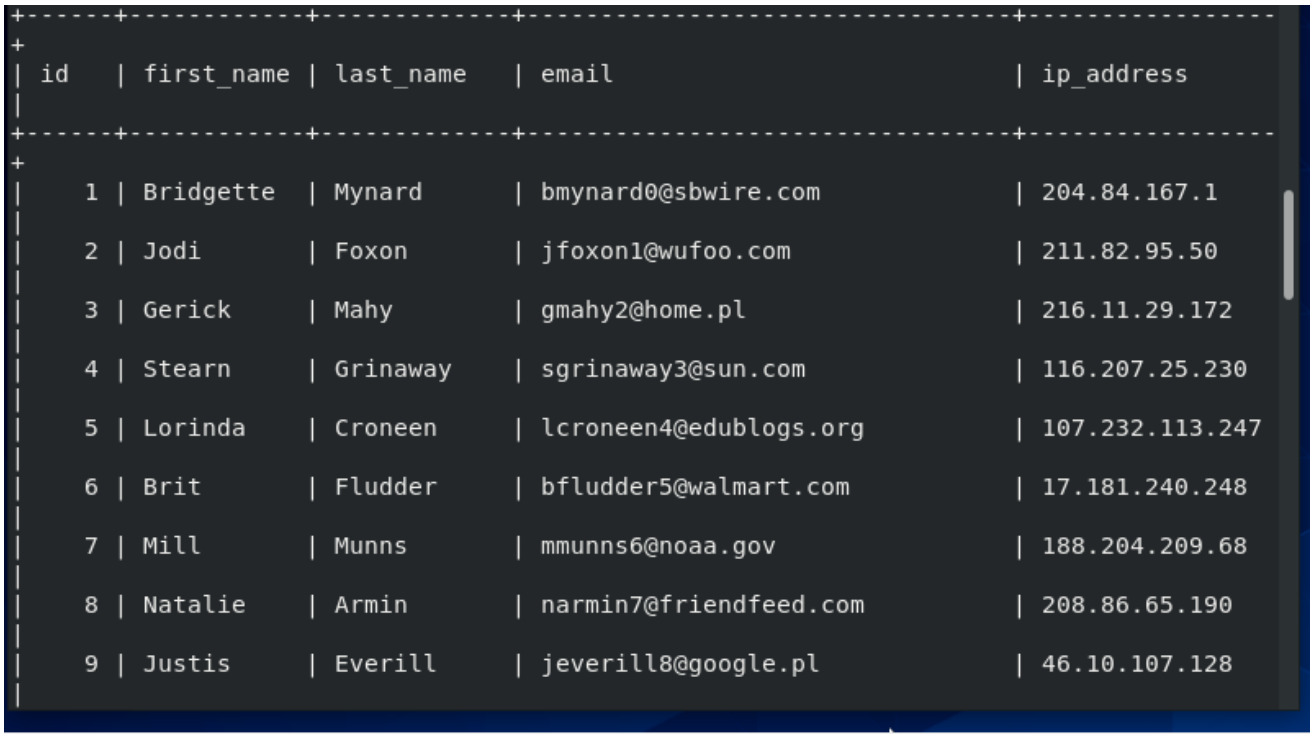
```
mysql> use firsttable;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+----------------------+
| Tables_in_firsttable |
+----------------------+
| first                |
+----------------------+
1 row in set (0.01 sec)

mysql>
```

Figure 6: created table.

Any SQL formats data type can enter created table using **source ./'sql file name'.sql** command. This report used www.mockaroo.com auto generated 50 columns false data.



| id | first_name | last_name | email | ip_address |
|---|---|---|---|---|
| 1 | Bridgette | Mynard | bmynard0@sbwire.com | 204.84.167.1 |
| 2 | Jodi | Foxon | jfoxon1@wufoo.com | 211.82.95.50 |
| 3 | Gerick | Mahy | gmahy2@home.pl | 216.11.29.172 |
| 4 | Stearn | Grinaway | sgrinaway3@sun.com | 116.207.25.230 |
| 5 | Lorinda | Croneen | lcroneen4@edublogs.org | 107.232.113.247 |
| 6 | Brit | Fludder | bfludder5@walmart.com | 17.181.240.248 |
| 7 | Mill | Munns | mmunns6@noaa.gov | 188.204.209.68 |
| 8 | Natalie | Armin | narmin7@friendfeed.com | 208.86.65.190 |
| 9 | Justis | Everill | jeverill8@google.pl | 46.10.107.128 |

Figure 7: 50 columns false data.

## 7 Data filtering.

Most common MySQL databases filtering options are **where, group by, like and limit.** These filters allows you to get users interested specific datas.

### 7.1 Group by filter.

This filter mainly used to filter results by representing multiple results with a single row. command is **select'column name' from group by 'columns to group';**

```
mysql> select first_name, id from first group by id,first_name;
+------------+------+
| first_name | id   |
+------------+------+
| Bridgette  |    1 |
| Jodi       |    2 |
| Gerick     |    3 |
| Stearn     |    4 |
| Lorinda    |    5 |
| Brit       |    6 |
| Mill       |    7 |
| Natalie    |    8 |
| Justis     |    9 |
| Cammie     |   10 |
| Ciro       |   11 |
| Beryle     |   12 |
| Tobiah     |   13 |
| Jerry      |   14 |
| Angelico   |   15 |
| Dale       |   16 |
```

Figure 8: 50 columns with first name and id only.

### 7.2 Where filter.

The where filter is most common and flexible command. It is use to to get exactly wanted data. The basic command is **select * from 'table name' where 'condition';**

```
|   47 | Othella    | Wallbridge  | owallbridge1a@w3.org            | 198.14.185.157
|
|   48 | Doug       | Segebrecht  | dsegebrecht1b@sina.com.cn       | 227.114.156.17
|
|   49 | Cornall    | Braban      | cbraban1c@census.gov            | 121.54.117.200
|
|   50 | Duke       | Sjostrom    | dsjostrom1d@studiopress.com     | 23.253.147.247
|
+------+------------+-------------+---------------------------------+-----------------
+
50 rows in set (0.08 sec)

mysql> select* from first where id='50';
+------+------------+-----------+-----------------------------+----------------+
| id   | first_name | last_name | email                       | ip_address     |
+------+------------+-----------+-----------------------------+----------------+
|   50 | Duke       | Sjostrom  | dsjostrom1d@studiopress.com | 23.253.147.247 |
+------+------------+-----------+-----------------------------+----------------+
1 row in set (0.11 sec)

mysql>
```

Figure 9: id 50 data.

### 7.3 Limit filter.

The limit filter use for get different approach to paring down the data users query returns. Command is **select * from 'table name'limit 'number of rows'[offset 'number of rows to skip'];**

```
mysql> select*from first where id ='50' limit 1;
+------+------------+-----------+-----------------------------+----------------+
| id   | first_name | last_name | email                       | ip_address     |
+------+------------+-----------+-----------------------------+----------------+
|   50 | Duke       | Sjostrom  | dsjostrom1d@studiopress.com | 23.253.147.247 |
+------+------------+-----------+-----------------------------+----------------+
1 row in set (0.00 sec)

mysql>
```

Figure 10: id 50 data.

### 7.4 Like filter.

Command for like filter is **select 'user wanted columns' where 'wanted row' like 'condition';**

```
mysql> select id,first_name,last_name from first where id like '50';
+------+------------+-----------+
| id   | first_name | last_name |
+------+------------+-----------+
|   50 | Duke       | Sjostrom  |
+------+------------+-----------+
1 row in set (0.00 sec)

mysql>
```

Figure 11: id 50 data.

# 8 MySQL data editing.

## 8.1 updating data.

8.1.1 using figure 12 command is the one who can change specific data inside of one column.

```
mysql> update  first
    -> set first_name ='abc'
    -> where id = '1';
Query OK, 1 row affected (0.20 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

Figure 12: updating id number 01.

```
mysql> select*from first order by id limit 10;
+------+------------+-----------+-----------------------+-----------------+
| id   | first_name | last_name | email                 | ip_address      |
+------+------------+-----------+-----------------------+-----------------+
|    1 | Bridgette  | Mynard    | bmynard0@sbwire.com   | 204.84.167.1    |
|    2 | Jodi       | Foxon     | jfoxon1@wufoo.com     | 211.82.95.50    |
|    3 | Gerick     | Mahy      | gmahy2@home.pl        | 216.11.29.172   |
|    4 | Stearn     | Grinaway  | sgrinaway3@sun.com    | 116.207.25.230  |
|    5 | Lorinda    | Croneen   | lcroneen4@edublogs.org | 107.232.113.247 |
|    6 | Brit       | Fludder   | bfludder5@walmart.com | 17.181.240.248  |
|    7 | Mill       | Munns     | mmunns6@noaa.gov      | 188.204.209.68  |
|    8 | Natalie    | Armin     | narmin7@friendfeed.com | 208.86.65.190   |
|    9 | Justis     | Everill   | jeverill8@google.pl   | 46.10.107.128   |
|   10 | Cammie     | More      | cmore9@google.nl      | 237.81.81.85    |
+------+------------+-----------+-----------------------+-----------------+
10 rows in set (0.00 sec)
```

Figure 13: id 1 before change first name.

```
mysql> select*from first order by id limit 10;
+------+------------+-----------+-----------------------+-----------------+
| id   | first_name | last_name | email                 | ip_address      |
+------+------------+-----------+-----------------------+-----------------+
|    1 | abc        | Mynard    | bmynard0@sbwire.com   | 204.84.167.1    |
|    2 | Jodi       | Foxon     | jfoxon1@wufoo.com     | 211.82.95.50    |
|    3 | Gerick     | Mahy      | gmahy2@home.pl        | 216.11.29.172   |
|    4 | Stearn     | Grinaway  | sgrinaway3@sun.com    | 116.207.25.230  |
|    5 | Lorinda    | Croneen   | lcroneen4@edublogs.org | 107.232.113.247 |
|    6 | Brit       | Fludder   | bfludder5@walmart.com | 17.181.240.248  |
|    7 | Mill       | Munns     | mmunns6@noaa.gov      | 188.204.209.68  |
|    8 | Natalie    | Armin     | narmin7@friendfeed.com | 208.86.65.190   |
|    9 | Justis     | Everill   | jeverill8@google.pl   | 46.10.107.128   |
|   10 | Cammie     | More      | cmore9@google.nl      | 237.81.81.85    |
+------+------------+-----------+-----------------------+-----------------+
10 rows in set (0.00 sec)

mysql>
```

Figure 14: id 1 first name changed table.

8.1.2 figure 15 command used for change two column records same id using only one command line

```
mysql> update first
    -> set first_name ='bbb',
    -> last_name='aba'
    -> where id=2;
Query OK, 1 row affected (0.11 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql>
```

Figure 15: command for change two column records.

```
mysql> select *from first;
+------+------------+-------------+---------------------------------+-----------------
+
| id   | first_name | last_name   | email                           | ip_address
|
+------+------------+-------------+---------------------------------+-----------------
+
|    1 | abc        | Mynard      | bmynard0@sbwire.com             | 204.84.167.1
|
|    2 | bbb        | aba         | jfoxon1@wufoo.com               | 211.82.95.50
|
|    3 | Gerick     | Mahy        | gmahy2@home.pl                  | 216.11.29.172
|
|    4 | Stearn     | Grinaway    | sgrinaway3@sun.com              | 116.207.25.230
|
|    5 | Lorinda    | Croneen     | lcroneen4@edublogs.org          | 107.232.113.247
|
|    6 | Brit       | Fludder     | bfludder5@walmart.com           | 17.181.240.248
|
|    7 | Mill       | Munns       | mmunns6@noaa.gov                | 188.204.209.68
|
|    8 | Natalie    | Armin       | narmin7@friendfeed.com          | 208.86.65.190
```

Figure 16: id 2 first name and last name changed table.

### 8.1.3 multiple commands for change first 10 records.

```
Query OK, 1 row affected (0.10 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update first set first_name ='ggg' where id='6';
Query OK, 1 row affected (0.22 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update first set first_name ='hhh' where id='7';
Query OK, 1 row affected (0.35 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update first set first_name ='jjj' where id='8';
Query OK, 1 row affected (0.64 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update first set first_name ='kkk' where id='9';
Query OK, 1 row affected (0.35 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update first set first_name ='lll' where id='10';
Query OK, 1 row affected (0.10 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql>
```

Figure 17: commands for change first 10 records.

```
mysql> select *from first order by id limit 15;
+------+------------+------------+-------------------------+-----------------+
| id   | first_name | last_name  | email                   | ip_address      |
+------+------------+------------+-------------------------+-----------------+
|    1 | abc        | Mynard     | bmynard0@sbwire.com     | 204.84.167.1    |
|    2 | bbb        | aba        | jfoxon1@wufoo.com       | 211.82.95.50    |
|    3 | sss        | Mahy       | gmahy2@home.pl          | 216.11.29.172   |
|    4 | ddd        | Grinaway   | sgrinaway3@sun.com      | 116.207.25.230  |
|    5 | fff        | Croneen    | lcroneen4@edublogs.org  | 107.232.113.247 |
|    6 | ggg        | Fludder    | bfludder5@walmart.com   | 17.181.240.248  |
|    7 | hhh        | Munns      | mmunns6@noaa.gov        | 188.204.209.68  |
|    8 | jjj        | Armin      | narmin7@friendfeed.com  | 208.86.65.190   |
|    9 | kkk        | Everill    | jeverill8@google.pl     | 46.10.107.128   |
|   10 | lll        | More       | cmore9@google.nl        | 237.81.81.85    |
|   11 | Ciro       | Slessar    | cslessara@go.com        | 34.194.2.23     |
|   12 | Beryle     | Pattington | bpattingtonb@sbwire.com | 236.174.146.239 |
|   13 | Tobiah     | Wheatley   | twheatleyc@time.com     | 248.142.147.206 |
|   14 | Jerry      | Osan       | josand@scribd.com       | 251.32.30.222   |
|   15 | Angelico   | Pridham    | apridhame@salon.com     | 213.217.5.22    |
+------+------------+------------+-------------------------+-----------------+
15 rows in set (0.00 sec)

mysql>
```

Figure 18: first 10 records first name changed table.

8.1.4 change records only using one command. figure 20 shows the commands for change records using only one command.

```
mysql> select * from first where id between '24' and '36';
+------+------------+-------------+-----------------------------+-----------------+
| id   | first_name | last_name   | email                       | ip_address      |
+------+------------+-------------+-----------------------------+-----------------+
|   24 | Laurena    | Hovy        | lhovyn@dropbox.com          | 61.177.169.10   |
|   25 | Lenna      | Cossem      | lcossemo@bigcartel.com      | 187.59.15.155   |
|   26 | Savina     | Grishechkin | sgrishechkinp@sitemeter.com | 143.160.27.146  |
|   27 | Mabelle    | Hefforde    | mheffordeq@wiley.com        | 137.151.119.240 |
|   28 | Ancell     | Udie        | audier@list-manage.com      | 52.116.159.21   |
|   29 | Norah      | Devey       | ndeveys@nymag.com           | 3.34.16.222     |
|   30 | Selina     | Sloyan      | ssloyant@about.com          | 183.45.217.191  |
|   31 | Sharona    | Stellino    | sstellinou@cam.ac.uk        | 211.11.236.177  |
|   32 | Hube       | Meadway     | hmeadwayv@adobe.com         | 198.21.240.85   |
|   33 | Barbey     | Milsted     | bmilstedw@ustream.tv        | 202.208.8.77    |
|   34 | Gustie     | Noakes      | gnoakesx@usa.gov            | 247.3.70.187    |
|   35 | Bobbie     | Perree      | bperreey@slashdot.org       | 129.67.206.126  |
|   36 | Kev        | Reasce      | kreascez@i2i.jp             | 166.195.245.200 |
+------+------------+-------------+-----------------------------+-----------------+
13 rows in set (0.00 sec)

mysql>
```

Figure 19: before change records.

```
mysql> update first
    -> set first_name='e'
    -> where 24<id<36;
Query OK, 50 rows affected (0.15 sec)
Rows matched: 50  Changed: 50  Warnings: 0

mysql> select * from first where id between '24' and '36';
+------+------------+-------------+-----------------------------+-----------------+
| id   | first_name | last_name   | email                       | ip_address      |
+------+------------+-------------+-----------------------------+-----------------+
|   24 | e          | Hovy        | lhovyn@dropbox.com          | 61.177.169.10   |
|   25 | e          | Cossem      | lcossemo@bigcartel.com      | 187.59.15.155   |
|   26 | e          | Grishechkin | sgrishechkinp@sitemeter.com | 143.160.27.146  |
|   27 | e          | Hefforde    | mheffordeq@wiley.com        | 137.151.119.240 |
|   28 | e          | Udie        | audier@list-manage.com      | 52.116.159.21   |
|   29 | e          | Devey       | ndeveys@nymag.com           | 3.34.16.222     |
|   30 | e          | Sloyan      | ssloyant@about.com          | 183.45.217.191  |
|   31 | e          | Stellino    | sstellinou@cam.ac.uk        | 211.11.236.177  |
|   32 | e          | Meadway     | hmeadwayv@adobe.com         | 198.21.240.85   |
|   33 | e          | Milsted     | bmilstedw@ustream.tv        | 202.208.8.77    |
|   34 | e          | Noakes      | gnoakesx@usa.gov            | 247.3.70.187    |
|   35 | e          | Perree      | bperreey@slashdot.org       | 129.67.206.126  |
|   36 | e          | Reasce      | kreascez@i2i.jp             | 166.195.245.200 |
+------+------------+-------------+-----------------------------+-----------------+
13 rows in set (0.00 sec)

mysql>
```

Figure 20: after changed records.

### 8.2 Deleting data.

Figure 21 command use to delete rows.

```
mysql> delete from first where 4<id>11;
Query OK, 0 rows affected (0.10 sec)

mysql>
```

Figure 21: command for change the records.

```
mysql> select *from first order by id limit 15;
+------+------------+------------+-------------------------+-----------------+
| id   | first_name | last_name  | email                   | ip_address      |
+------+------------+------------+-------------------------+-----------------+
|    1 | abc        | Mynard     | bmynard0@sbwire.com     | 204.84.167.1    |
|    2 | bbb        | aba        | jfoxon1@wufoo.com       | 211.82.95.50    |
|    3 | sss        | Mahy       | gmahy2@home.pl          | 216.11.29.172   |
|    4 | ddd        | Grinaway   | sgrinaway3@sun.com      | 116.207.25.230  |
|    5 | fff        | Croneen    | lcroneen4@edublogs.org  | 107.232.113.247 |
|    6 | ggg        | Fludder    | bfludder5@walmart.com   | 17.181.240.248  |
|    7 | hhh        | Munns      | mmunns6@noaa.gov        | 188.204.209.68  |
|    8 | jjj        | Armin      | narmin7@friendfeed.com  | 208.86.65.190   |
|    9 | kkk        | Everill    | jeverill8@google.pl     | 46.10.107.128   |
|   10 | lll        | More       | cmore9@google.nl        | 237.81.81.85    |
|   11 | Ciro       | Slessar    | cslessara@go.com        | 34.194.2.23     |
|   12 | Beryle     | Pattington | bpattingtonb@sbwire.com | 236.174.146.239 |
|   13 | Tobiah     | Wheatley   | twheatleyc@time.com     | 248.142.147.206 |
|   14 | Jerry      | Osan       | josand@scribd.com       | 251.32.30.222   |
|   15 | Angelico   | Pridham    | apridhame@salon.com     | 213.217.5.22    |
+------+------------+------------+-------------------------+-----------------+
15 rows in set (0.00 sec)

mysql>
```

Figure 22: after changed the records.

## 9 Conclusions.

After considering MySQL commands proved the flexibility,high performance and data protection. The most important fact is MySQL is very easy to use. To get one specific data, users can use different types of filters. All the important commands are include on this report. Which is helps to make and maintained the MySQL database.