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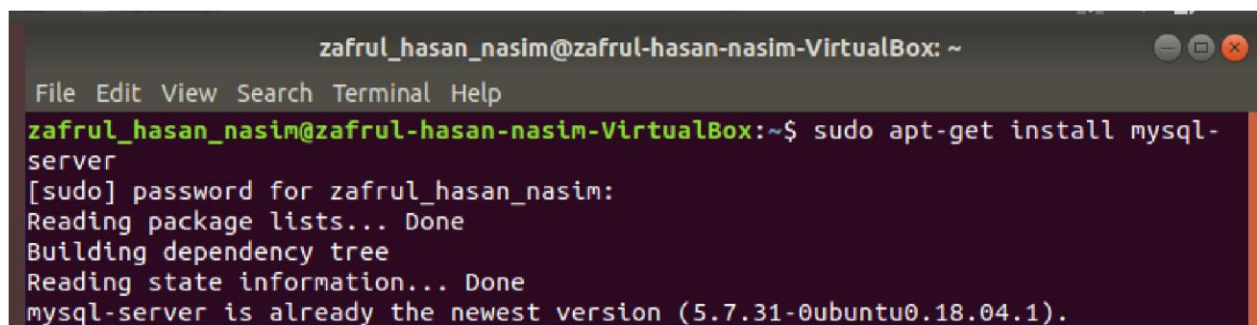
Lab report no. : 05

Lab report name : Connecting database (mysql) in Linux .

Aim and objectives: To know how to install mysql database in Linux and perform various operation of mysql via connecting to it.

Commands:

- i) **Install mysql on ubuntu:** Open the terminal of ubuntu then run the following command step by step , firstly excute 'sudo apt-get update' then 'sudo aptget install mysql-server'.



```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~  
File Edit View Search Terminal Help  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ sudo apt-get install mysql-server  
[sudo] password for zafrul_hasan_nasim:  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
mysql-server is already the newest version (5.7.31-0ubuntu0.18.04.1).
```

After installation we need to set it up , to do so we can type the command /usr/bin/mysql_secure_installation..

The secure installer goes through the process of setting up MySQL including creating a root user password. It will prompt us for some security options, including removing remote access to the root user and setting the root password.

Now we can start out experimenting with mysql database in ubuntu by Logging in.

- ii) **Log into mysql on ubuntu:** For logging into mysql we can run 'sudo mysql -u root -p' command then type ubuntu user password and mysql root password respectively.

```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~  
File Edit View Search Terminal Help  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ sudo mysql -u root -p  
[sudo] password for zafrul_hasan_nasim:  
Enter password:  
Welcome to the MySQL monitor.  Commands end with ; or \g.  
Your MySQL connection id is 16  
Server version: 5.7.31-0ubuntu0.18.04.1 (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> 
```

- iii) **Create database table:** Firstly I will create a database which name is 'lab_05' using 'create database lab_05' then to get list of the database list by running following mysql command 'show databases'.

```
mysql> create database lab_05;  
Query OK, 1 row affected (0.00 sec)  
  
mysql> show databases;  
+-----+  
| Database |  
+-----+  
| information_schema |  
| first |  
| lab_05 |  
| mysql |  
| performance_schema |  
| sys |  
+-----+  
6 rows in set (0.00 sec)  
  
mysql> 
```

Then I will use 'lab_05' database using 'use lab_05' mysql command ,

```
mysql> use lab_05;  
Database changed
```

Now I will create table 'nasim_info' using following command ,

```
mysql> create table nasim_info (Name varchar(50),Department varchar(50),session
  varchar(30));
Query OK, 0 rows affected (0.06 sec)

mysql> describe nasim_info;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Name       | varchar(50)   | YES  |     | NULL    |       |
| Department | varchar(50)   | YES  |     | NULL    |       |
| session    | varchar(30)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> 
```

- iv) **Insert data into table:** To insert data into table using 'insert into tablename values (val1, val2,...)' commands,

```
mysql> insert into nasim_info values('Zafrul Hasan Khan (nasim)','ICT','2017-18
');
Query OK, 1 row affected (0.00 sec)

mysql> 
```

- v) **Describe and explain the table:** Now to see whats in the table after insertion using 'select * from tablename' mysql command ,

```
mysql> select * from nasim_info;
+-----+-----+-----+
| Name                | Department | session |
+-----+-----+-----+
| Zafrul Hasan Khan (nasim) | ICT        | 2017-18 |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql> 
```

And describe the table using 'describe tablename' mysql command,

```
mysql> describe nasim_info;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Name       | varchar(50) | YES  |     | NULL    |       |
| Department | varchar(50) | YES  |     | NULL    |       |
| session    | varchar(30) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> 
```

- vi) **Alter table** : To rename the table using 'alter table tablename rename to new_tablename' mysql command,

```
mysql> alter table nasim_info rename to zafrul_nasim_info;
Query OK, 0 rows affected (0.04 sec)

mysql> select * from zafrul_nasim_info;
+-----+-----+-----+
| Name                | Department | session |
+-----+-----+-----+
| Zafrul Hasan Khan (nasim) | ICT       | 2017-18 |
| Zafrul hasan nasim    | ICT       | 2017-18 |
| nasim khan            | CSE       | 2017-18 |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

- vii) **Modify table** : To modify a table using 'altert table tablename add column_name data_type constraint' mysql command,

```
mysql> alter table zafrul_nasim_info add ID varchar(20);
Query OK, 0 rows affected (0.07 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> select * from zafrul_nasim_info;
```

Name	Department	session	ID
Zafrul Hasan Khan (nasim)	ICT	2017-18	NULL
Zafrul hasan nasim	ICT	2017-18	NULL
nasim khan	CSE	2017-18	NULL

3 rows in set (0.00 sec)

- viii) **Drop table:** To drop or removes a table permanently using 'drop table tablename' mysql command,

```
mysql> show tables;
```

Tables_in_lab_05
student_nasim
zafrul_nasim_info

2 rows in set (0.00 sec)

```
mysql> drop table student_nasim;
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> show tables;
```

Tables_in_lab_05
zafrul_nasim_info

1 row in set (0.00 sec)

```
mysql> 
```

- ix) **Update data of table :** To update data of table using 'update tablename set column_name = value where condition ' mysql command ,

```
mysql> select * from zafrul_nasim_info;
+-----+-----+-----+-----+
| Name                | Department | session | ID    |
+-----+-----+-----+-----+
| Zafrul Hasan Khan (nasim) | ICT       | 2017-18 | NULL  |
| Zafrul hasan nasim      | ICT       | 2017-18 | NULL  |
| nasim khan              | CSE       | 2017-18 | NULL  |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> update zafrul_nasim_info set ID='IT-18003' where Department='CSE';
Query OK, 1 row affected (0.07 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> select * from zafrul_nasim_info;
+-----+-----+-----+-----+
| Name                | Department | session | ID    |
+-----+-----+-----+-----+
| Zafrul Hasan Khan (nasim) | ICT       | 2017-18 | NULL  |
| Zafrul hasan nasim      | ICT       | 2017-18 | NULL  |
| nasim khan              | CSE       | 2017-18 | IT-18003 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> 
```

- x) **Where and delete operation:** The where clause specifies which record or records that should be deleted. If the where clause is not specified, then all records will be deleted from the given table.

To delete record or records of table using 'delete from tablename where condition' mysql command,


```
mysql> select * from zafrul_nasim_info;
+-----+-----+-----+-----+
| Name                | Department | session | ID      |
+-----+-----+-----+-----+
| Zafrul Hasan Khan (nasim) | ICT       | 2017-18 | NULL    |
| Zafrul hasan nasim      | ICT       | 2017-18 | IT-18003 |
| nasim khan              | CSE       | 2017-18 | IT-18003 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> delete from zafrul_nasim_info where Department='CSE';
Query OK, 1 row affected (0.01 sec)

mysql> select * from zafrul_nasim_info;
+-----+-----+-----+-----+
| Name                | Department | session | ID      |
+-----+-----+-----+-----+
| Zafrul Hasan Khan (nasim) | ICT       | 2017-18 | NULL    |
| Zafrul hasan nasim      | ICT       | 2017-18 | IT-18003 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

Conclusion: From this lab I learnt how to install database (mysql) in Linux based operating systems (ubuntu) . I can also learn various operations of mysql by running commands in the terminal. Using a database is a convenient way of saving data in both research and technical fields , so it will be of great help in the near future .