

Lab Report: 05

Title: Connecting a database (MySQL) with Linux

Course code: ICT-3110

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SUBMITTED BY

Name: Shakhera khanom

ID: IT-18033

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Department of ICT,

MBSTU.

SUBMITTED TO

Nazrul Islam

Assistant Professor

Department of ICT,

MBSTU.

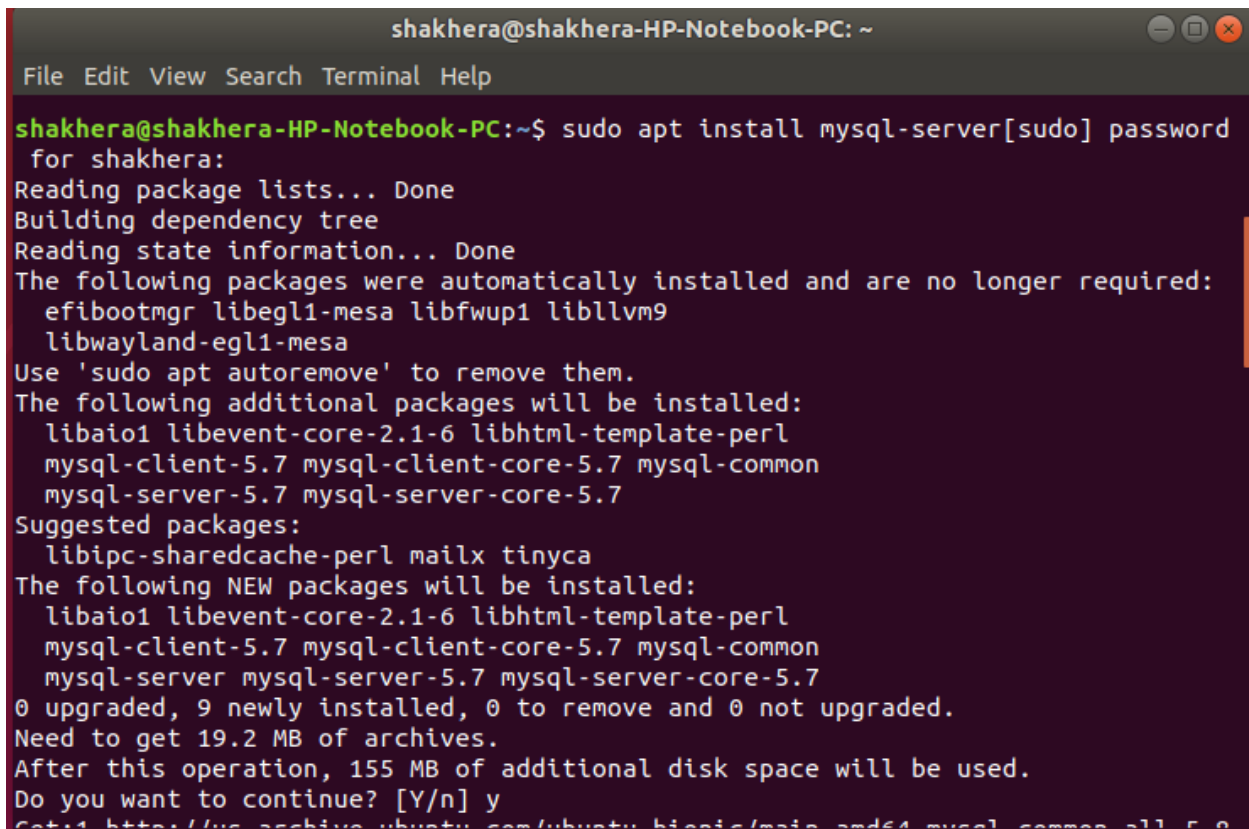
Experiment No: 05

Experiment Name: Connecting a database (MySQL) with Linux.

Objectives:

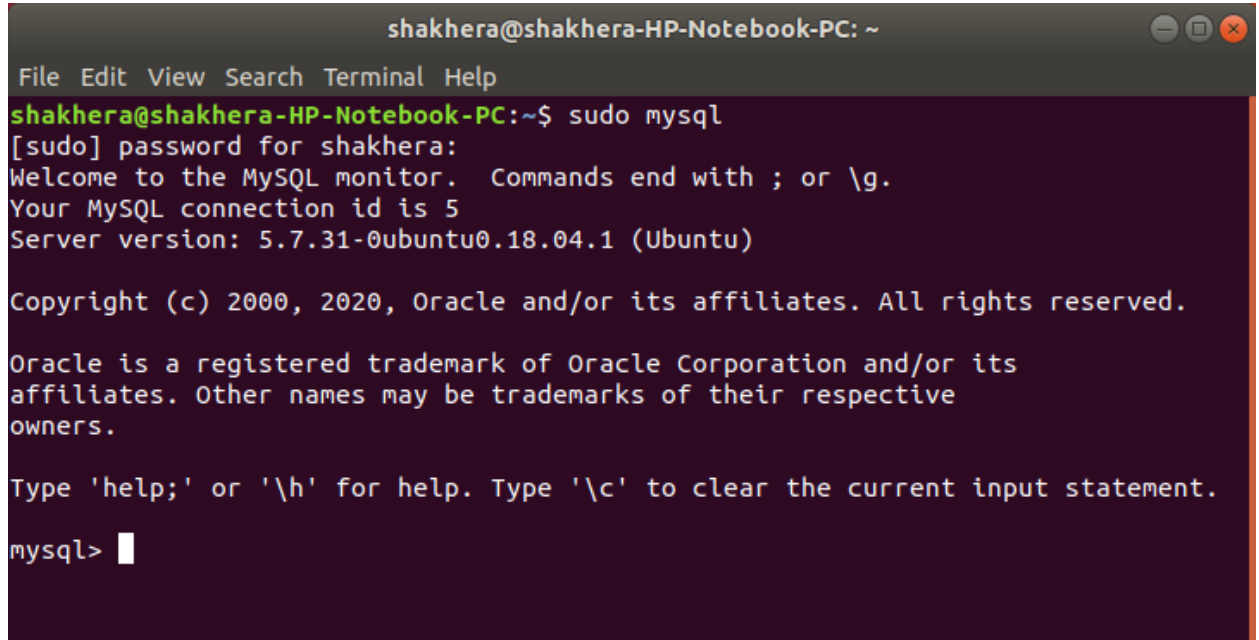
- Install MySQL on Ubuntu
- Log into MySQL by Linux.
- Create database table.
- Insert data into table.
- Describe table.
- Alter table.
- Modify table.
- Drop data from table.
- Update data of table.
- Where and delete operation.

Install MySQL on Ubuntu: `sudo apt-get install mysql-server`.



```
shakhera@shakhera-HP-Notebook-PC: ~  
File Edit View Search Terminal Help  
shakhera@shakhera-HP-Notebook-PC:~$ sudo apt install mysql-server[sudo] password  
for shakhera:  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following packages were automatically installed and are no longer required:  
  efibootmgr libegl1-mesa libfwup1 libllvm9  
  libwayland-egl1-mesa  
Use 'sudo apt autoremove' to remove them.  
The following additional packages will be installed:  
  libaio1 libevent-core-2.1-6 libhtml-template-perl  
  mysql-client-5.7 mysql-client-core-5.7 mysql-common  
  mysql-server-5.7 mysql-server-core-5.7  
Suggested packages:  
  libipc-sharedcache-perl mailx tinycd  
The following NEW packages will be installed:  
  libaio1 libevent-core-2.1-6 libhtml-template-perl  
  mysql-client-5.7 mysql-client-core-5.7 mysql-common  
  mysql-server mysql-server-5.7 mysql-server-core-5.7  
0 upgraded, 9 newly installed, 0 to remove and 0 not upgraded.  
Need to get 19.2 MB of archives.  
After this operation, 155 MB of additional disk space will be used.  
Do you want to continue? [Y/n] y  
Get:1 http://us.archive.ubuntu.com/ubuntu/bionic/main amd64 mysql-common all 5.7
```

Log into MySQL by Linux:

A terminal window titled 'shakhera@shakhera-HP-Notebook-PC: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the command 'sudo mysql' being executed. It prompts for a password, then displays the MySQL welcome message, connection ID (5), and server version (5.7.31-0ubuntu0.18.04.1). It also shows copyright information and instructions on how to use help and clear commands. The prompt 'mysql>' is visible at the bottom.

```
shakhera@shakhera-HP-Notebook-PC: ~  
File Edit View Search Terminal Help  
shakhera@shakhera-HP-Notebook-PC:~$ sudo mysql  
[sudo] password for shakhera:  
Welcome to the MySQL monitor.  Commands end with ; or \g.  
Your MySQL connection id is 5  
Server version: 5.7.31-0ubuntu0.18.04.1 (Ubuntu)  
  
Copyright (c) 2000, 2020, Oracle and/or its affiliates. All rights reserved.  
  
Oracle is a registered trademark of Oracle Corporation and/or its  
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 table: specify the name of the database in which the table is created.

```
shakhera@shakhera-HP-Notebook-PC: ~
File Edit View Search Terminal Help
+-----+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+-----+
4 rows in set (0.10 sec)

mysql> create database students;
Query OK, 1 row affected (0.05 sec)

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

mysql> 
```

Insert data into table: The INSERT INTO statement is used to add new data to a database.

```
shakhera@shakhera-HP-Notebook-PC: ~
File Edit View Search Terminal Help
mysql> insert into Students values('IT_18033','shakhera',22,'3.50');
Query OK, 1 row affected (0.14 sec)

mysql> select * from Students;
+-----+-----+-----+-----+
| ID      | Name    | age  | cgpa |
+-----+-----+-----+-----+
| IT_18033 | shakhera | 22   | 3.50 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> insert into Students values('IT_18000','shifa',20,'3.00');
Query OK, 1 row affected (0.13 sec)

mysql> select * from Students;
+-----+-----+-----+-----+
| ID      | Name    | age  | cgpa |
+-----+-----+-----+-----+
| IT_18033 | shakhera | 22   | 3.50 |
| IT_18000 | shifa    | 20   | 3.00 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> 
```

Describe table: We use DESCRIBE or DESC (both are same) command to describe the structure of a table.

```
mysql> describe Students;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| ID    | varchar(30)   | YES  |     | NULL    |       |
| Name  | varchar(30)   | YES  |     | NULL    |       |
| age   | int(10)       | YES  |     | NULL    |       |
| cgpa  | varchar(10)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

Alter table: The ALTER TABLE statement is used to add, delete, or modify columns in an existing table.

```
shakhera@shakhera-HP-Notebook-PC: ~
File Edit View Search Terminal Help

mysql> alter table Students add gender varchar(30);
Query OK, 0 rows affected (0.23 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> describe Students;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| ID    | varchar(30)   | YES  |     | NULL    |       |
| Name  | varchar(30)   | YES  |     | NULL    |       |
| age   | int(10)       | YES  |     | NULL    |       |
| cgpa  | varchar(10)   | YES  |     | NULL    |       |
| gender| varchar(30)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> alter table Students drop column gender;
Query OK, 0 rows affected (0.18 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

Modify table: The alter command is used when we want to MODIFY a database or any object contained in the database.

```
shakhera@shakhera-HP-Notebook-PC: ~
File Edit View Search Terminal Help

mysql> alter table Students modify age varchar(10);
Query OK, 2 rows affected (0.12 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql> describe Students;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| ID    | varchar(30)   | YES  |     | NULL    |       |
| Name  | varchar(30)   | YES  |     | NULL    |       |
| age   | varchar(10)   | YES  |     | NULL    |       |
| cgpa  | varchar(10)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

Drop data from table: The DROP database statement is used to drop or delete a database.

```
shakhera@shakhera-HP-Notebook-PC: ~
File Edit View Search Terminal Help
+-----+-----+-----+-----+
| ID      | Name    | age  | cgpa | gender |
+-----+-----+-----+-----+
| IT_18033 | shakhera | 22   | 3.50 | NULL   |
| IT_18000 | shifa   | 20   | 3.00 | NULL   |
| IT_18032 | syma    | 30   | 3.70 | NULL   |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> alter table Students drop column gender;
Query OK, 0 rows affected (0.20 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> select * from Students;
+-----+-----+-----+-----+
| ID      | Name    | age  | cgpa |
+-----+-----+-----+-----+
| IT_18033 | shakhera | 22   | 3.50 |
| IT_18000 | shifa   | 20   | 3.00 |
| IT_18032 | syma    | 30   | 3.70 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> 
```

Update data of table: An SQL UPDATE statement changes the data of one or more records in a table.

```
shakhera@shakhera-HP-Notebook-PC: ~
File Edit View Search Terminal Help
+-----+-----+-----+-----+
| ID      | Name    | age  | cgpa |
+-----+-----+-----+-----+
| IT_18033 | shakhera | 22   | 3.50 |
| IT_18000 | shifa   | 20   | 3.00 |
| IT_18032 | syama   | 30   | 3.70 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> update Students set cgpa='3.72' where ID='IT_18033';
Query OK, 1 row affected (0.11 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from Students;
+-----+-----+-----+-----+
| ID      | Name    | age  | cgpa |
+-----+-----+-----+-----+
| IT_18033 | shakhera | 22   | 3.72 |
| IT_18000 | shifa   | 20   | 3.00 |
| IT_18032 | syama   | 30   | 3.70 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

Where and delete operation:

```
shakhera@shakhera-HP-Notebook-PC: ~
File Edit View Search Terminal Help

mysql> select * from Students;
+-----+-----+-----+-----+
| ID      | Name    | age  | cgpa |
+-----+-----+-----+-----+
| IT_18033 | shakhera | 22   | 3.72 |
| IT_18000 | shifa   | 20   | 3.00 |
| IT_18032 | syama   | 30   | 3.70 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> delete from Students where Name='shifa';
Query OK, 1 row affected (0.01 sec)

mysql> select * from Students;
+-----+-----+-----+-----+
| ID      | Name    | age  | cgpa |
+-----+-----+-----+-----+
| IT_18033 | shakhera | 22   | 3.72 |
| IT_18032 | syama   | 30   | 3.70 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

Discussion: This lab help to create a table, insert data, delete/ drop ta data.