

# My SQL Preliminaries

# MySql

- MySQL is an open source software available for Linux, Mac and M\$ Windows workable.
- Client server Architecture
- Need a client on your desktop and server on your desktop or it can be accessed through network

Assuming that mysql is installed and you are in a Comd prompt, your first comd.....

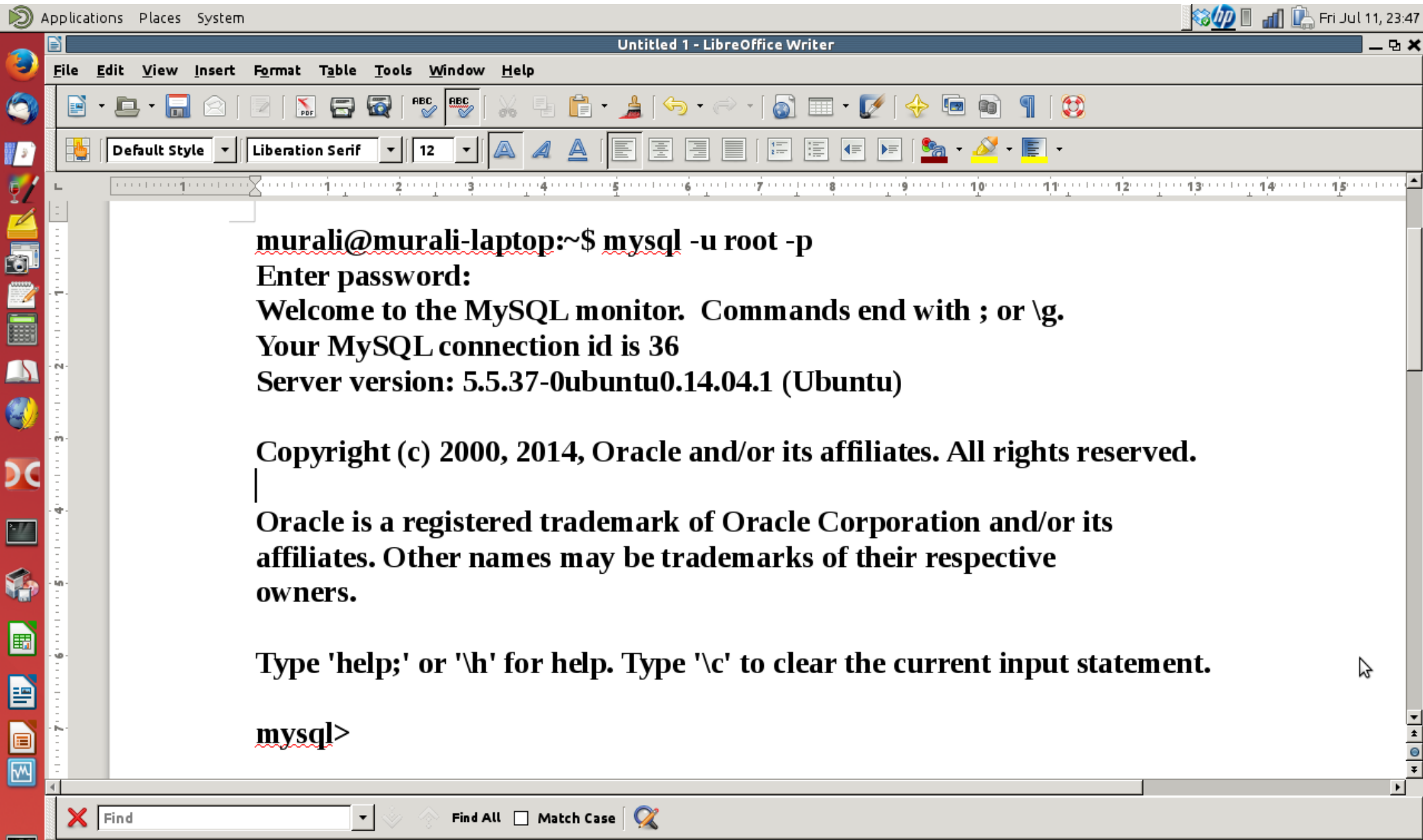
❖ He.....lllllllp !

**mysql> help;**

**mysql>help contents;**

**Note you can learn entire Mysql using the 'help feature' without any other study Material or an Instructor!**

Logging in... (required in linux. Window logs you in as root automatically and does not insist on a password !!!!)



```
murali@murali-laptop:~$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 36
Server version: 5.5.37-0ubuntu0.14.04.1 (Ubuntu)

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owners.

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

mysql>
```

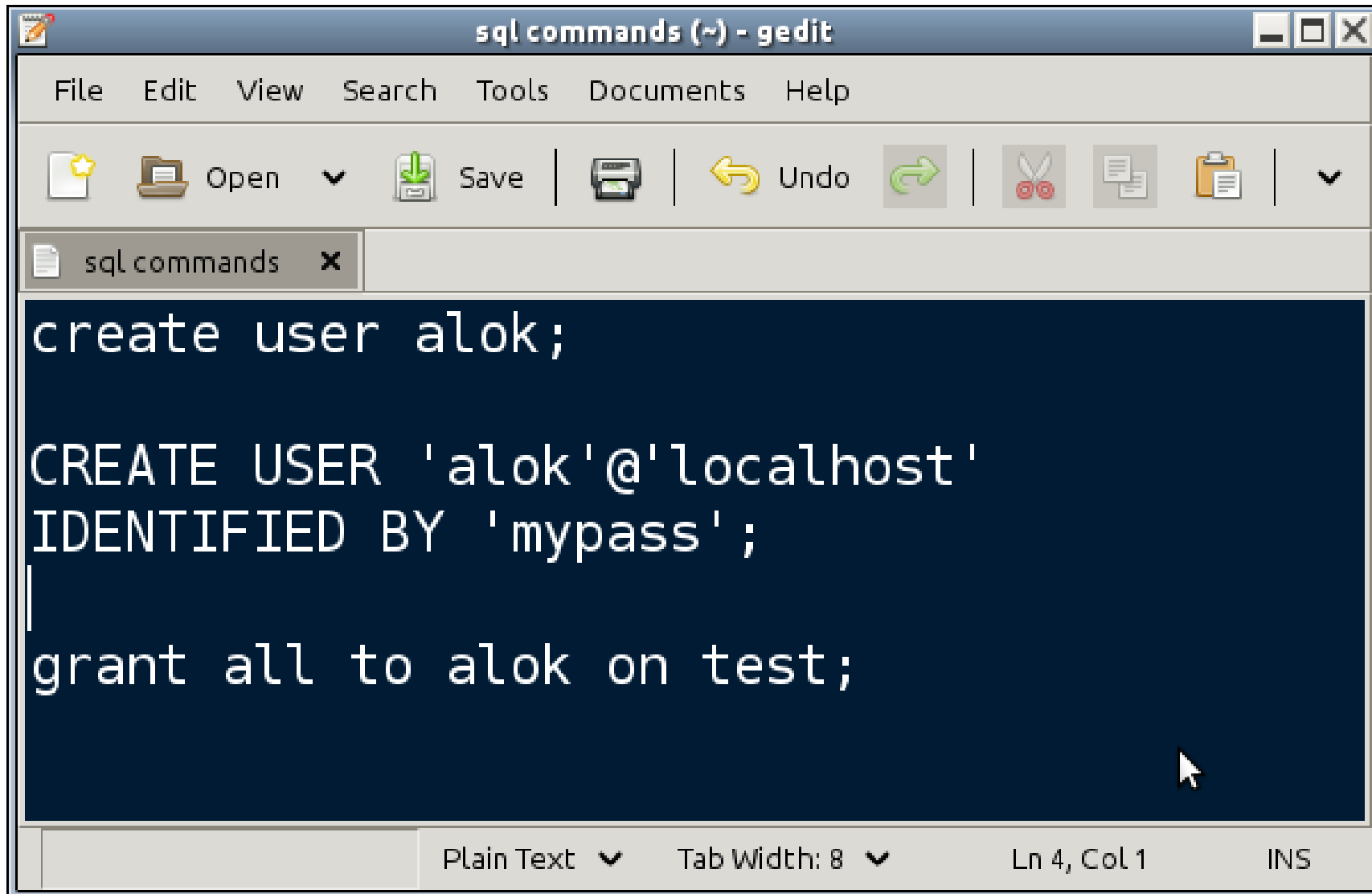
# Granting rights

An ordinary user requires rights to create , modify or update database

The normal procedure is

- create user
- create database as root user (DBA)
- grant rights to user as necessary.

# Adding user and granting rights



The image shows a screenshot of a gedit text editor window titled "sql commands (~) - gedit". The window has a menu bar with "File", "Edit", "View", "Search", "Tools", "Documents", and "Help". Below the menu bar is a toolbar with icons for "Open", "Save", "Undo", "Redo", "Cut", "Copy", and "Paste". The main text area contains the following SQL commands:

```
create user alok;  
  
CREATE USER 'alok'@'localhost'  
IDENTIFIED BY 'mypass';  
  
grant all to alok on test;
```

The status bar at the bottom of the window shows "Plain Text", "Tab Width: 8", "Ln 4, Col 1", and "INS".

# Dropping user and revoking rights

User can be deleted by drop user

Rights once granted can be revoked with revoke command.

Specific rights like insert, update, etc can be given

**Eg mysql> GRANT  
SELECT ,INSERT,UPDATE,DELETE,CREATE,DROP ON  
TESTDB TO ALOK;**

# Some Gen Rules

- \ or help help
- Help contents gives list of contents
- Help [ specific topic] gives help on specific topic for eg  
‘help select’ tells everything about ‘select’ key word.
- All lines end with a semi colon ;



# More gen rules

You can break a line by enter. Command will be executed only on semicolon

```
mysql> select  
-> now();  
+-----+  
| now() |  
+-----+  
| 2015-01-17 17:06:48 |  
+-----+  
1 row in set (0.11 sec)  
  
mysql>
```

# Datatypes

<i>MySQL Data Type</i>	<i>Description</i>
<code>CHAR(<i>length</i>)</code>	Fixed-length character string.
<code>VARCHAR(<i>length</i>)</code>	Variable-length character string. The longest string that can be stored is <i>length</i> , which must be between 1 and 255.
<code>TEXT</code>	Variable-length character string with a maximum length of 64KB of text.
<code>INT(<i>length</i>)</code>	Integer with a range from -2147483648 to +2147483647. The number that can be displayed is limited by <i>length</i> . For example, if <i>length</i> is 4, only numbers from -999 to 9999 can be displayed, even though higher numbers are stored.
<code>INT(<i>length</i>) UNSIGNED</code>	Integer with a range from 0 to 4294967295. <i>Length</i> is the size of the number that can be displayed. For example, if <i>length</i> is 4, only numbers up to 9999 can be displayed, even though higher numbers are stored.
<code>DECIMAL(<i>length</i>,<i>dec</i>)</code>	Decimal number where <i>length</i> is the number of characters that can be used to display the number, including decimal points, signs, and exponents, and <i>dec</i> is the maximum number of decimal places allowed. For example, 12.34 has <i>length</i> of 5 and <i>dec</i> of 2.
<code>DATE</code>	Date value with year, month, and date. Displays the value as YYYY-MM-DD (for example, 2001-04-03).
<code>TIME</code>	Time value with hour, minute, and second. Displays as HH:MM:SS.

# Some simple commands

Show databases;

Show tables;

Create database dbname;

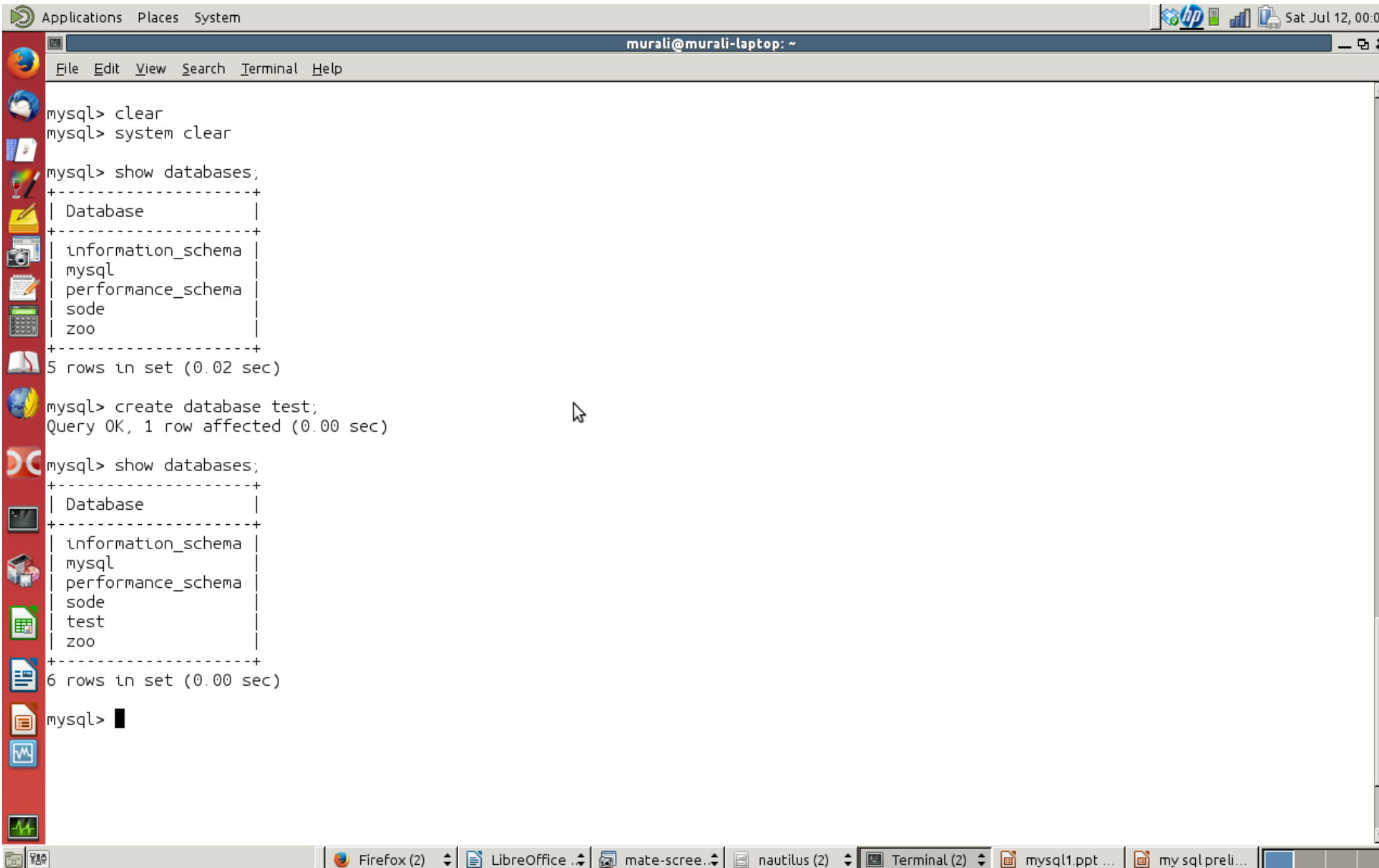
Use dbname;

Create table tablename (name char(20), marks int);

Desc tablename;

Select \* from tablename;

# CREATE DATABASE



The screenshot shows a terminal window titled "murali@murali-laptop: ~" with a menu bar containing "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal displays the following MySQL commands and their outputs:

```
mysql> clear
mysql> system clear

mysql> show databases;
+-----+
| Database                |
+-----+
| information_schema      |
| mysql                   |
| performance_schema      |
| sode                    |
| zoo                     |
+-----+
5 rows in set (0.02 sec)

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

mysql> show databases;
+-----+
| Database                |
+-----+
| information_schema      |
| mysql                   |
| performance_schema      |
| sode                    |
| test                    |
| zoo                     |
+-----+
6 rows in set (0.00 sec)

mysql> █
```

The terminal window also features a vertical sidebar on the left with various application icons and a taskbar at the bottom with icons for Firefox (2), LibreOffice, mate-scre..., nautilus (2), Terminal (2), mysql1.ppt ..., and my sql preli...

# CREATE TABLE

```
murali@murali-laptop: ~
mysql> show tables;
Empty set (0.00 sec)

mysql> create table main(service_no varchar(10), name varchar(20), dsoi_mem_no char(6), tennis_mem_no char(4), lib_card char(3));
Query OK, 0 rows affected (0.31 sec)

mysql> show tables;
+-----+
| Tables_in_test |
+-----+
| main           |
+-----+
1 row in set (0.01 sec)

mysql> describe main;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| service_no | varchar(10) | YES  |     | NULL    |       |
| name       | varchar(20) | YES  |     | NULL    |       |
| dsoi_mem_no | char(6)    | YES  |     | NULL    |       |
| tennis_mem_no | char(4)   | YES  |     | NULL    |       |
| lib_card   | char(3)    | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql>
```

# ALTER TABLE

```
Applications Places System
murali@murali-laptop: ~
File Edit View Search Terminal Help

mysql> show tables;
+-----+
| Tables_in_test |
+-----+
| main            |
+-----+
1 row in set (0.01 sec)

mysql> describe main;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| service_no     | varchar(10)   | YES  |     | NULL    |       |
| name           | varchar(20)   | YES  |     | NULL    |       |
| dsoi_mem_no    | char(6)       | YES  |     | NULL    |       |
| tennis_mem_no  | char(4)       | YES  |     | NULL    |       |
| lib_card       | char(3)       | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

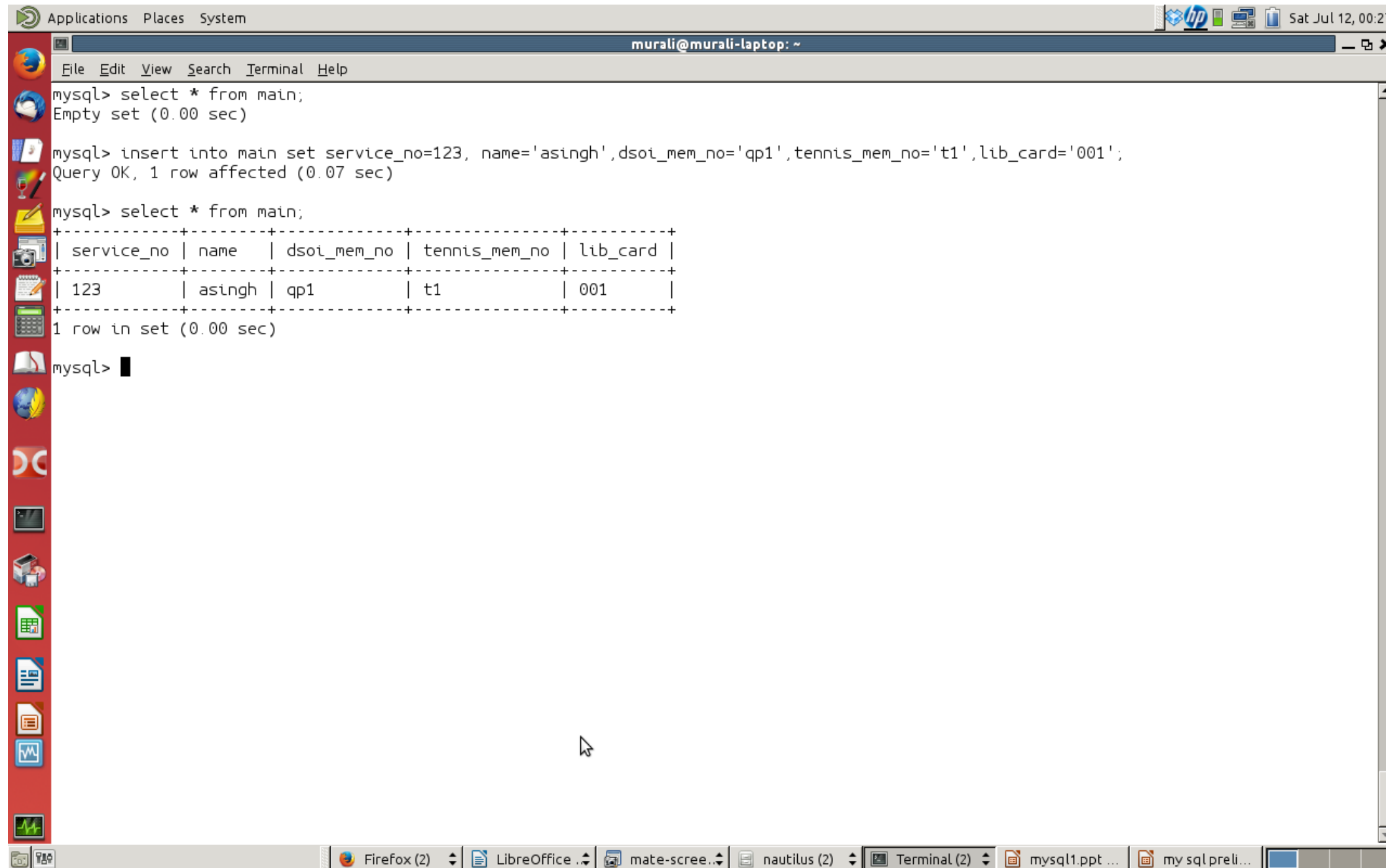
mysql> alter table main add primary key (service_no);
Query OK, 0 rows affected (0.39 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> describe main;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| service_no     | varchar(10)   | NO   | PRI | NULL    |       |
| name           | varchar(20)   | YES  |     | NULL    |       |
| dsoi_mem_no    | char(6)       | YES  |     | NULL    |       |
| tennis_mem_no  | char(4)       | YES  |     | NULL    |       |
| lib_card       | char(3)       | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql> 
```

Firefox (2) LibreOffice mate-scre... nautilus (2) Terminal (2) mysql1.ppt ... my sql preli...

# FILL IN DATA WITH INSERT



The screenshot shows a terminal window in a Linux desktop environment. The terminal prompt is `mysql>`. The user enters `select * from main;` and receives the output `Empty set (0.00 sec)`. Next, the user enters `insert into main set service_no=123, name='asingh', dsoi_mem_no='qp1', tennis_mem_no='t1', lib_card='001';` and receives the output `Query OK, 1 row affected (0.07 sec)`. Finally, the user enters `select * from main;` and receives a table with one row of data. The table has columns `service_no`, `name`, `dsoi_mem_no`, `tennis_mem_no`, and `lib_card`. The data in the row is `123`, `asingh`, `qp1`, `t1`, and `001`. The terminal prompt is now `mysql>`.

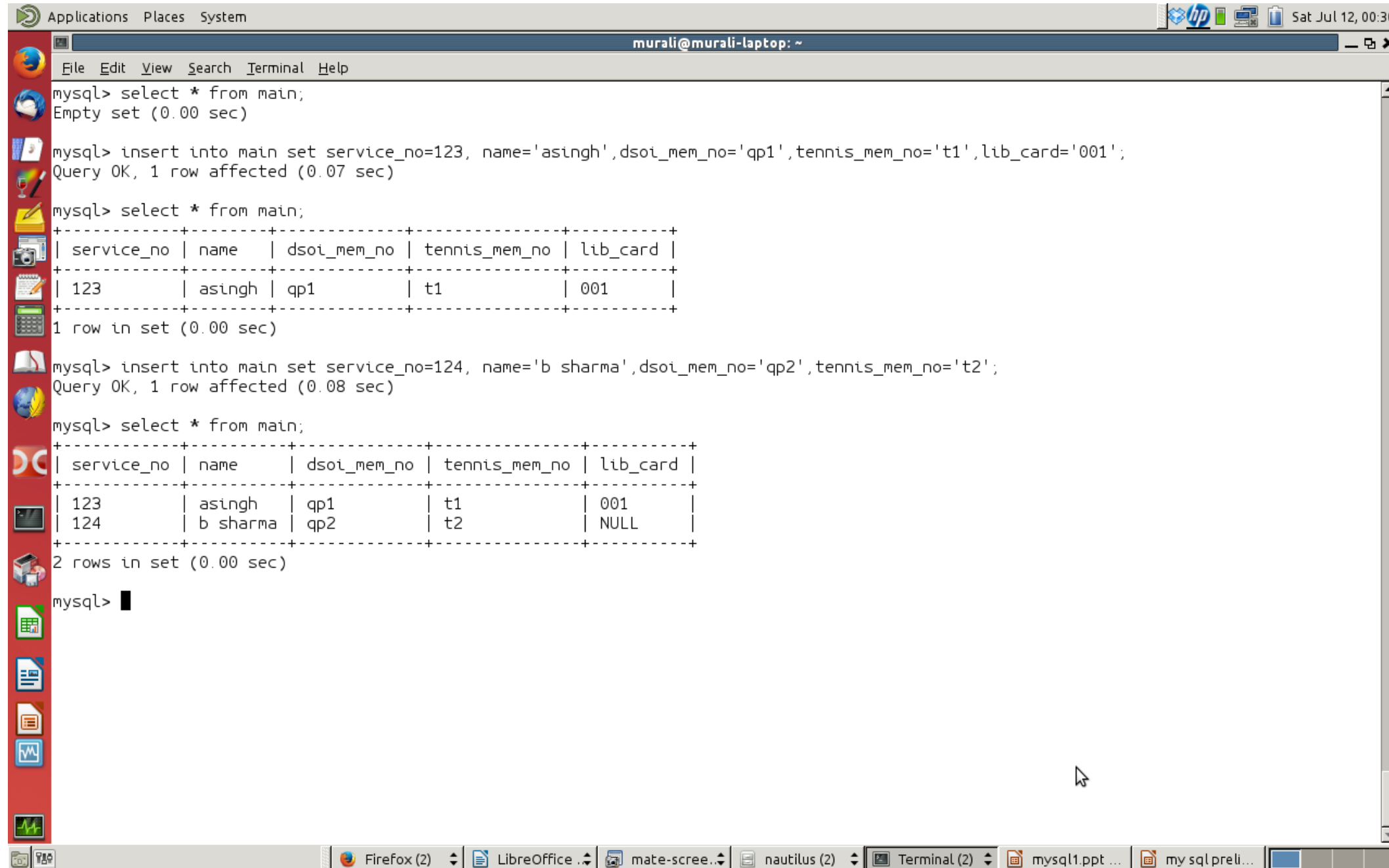
```
mysql> select * from main;
Empty set (0.00 sec)

mysql> insert into main set service_no=123, name='asingh', dsoi_mem_no='qp1', tennis_mem_no='t1', lib_card='001';
Query OK, 1 row affected (0.07 sec)

mysql> select * from main;
+-----+-----+-----+-----+-----+
| service_no | name   | dsoi_mem_no | tennis_mem_no | lib_card |
+-----+-----+-----+-----+-----+
| 123        | asingh | qp1         | t1            | 001      |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

# RETRIEVE DATA WITH SELECT



```
Applications Places System
murali@murali-laptop: ~
File Edit View Search Terminal Help
mysql> select * from main;
Empty set (0.00 sec)

mysql> insert into main set service_no=123, name='asingh', dsoi_mem_no='qp1', tennis_mem_no='t1', lib_card='001';
Query OK, 1 row affected (0.07 sec)

mysql> select * from main;
+-----+-----+-----+-----+-----+
| service_no | name   | dsoi_mem_no | tennis_mem_no | lib_card |
+-----+-----+-----+-----+-----+
| 123        | asingh | qp1         | t1            | 001      |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> insert into main set service_no=124, name='b sharma', dsoi_mem_no='qp2', tennis_mem_no='t2';
Query OK, 1 row affected (0.08 sec)

mysql> select * from main;
+-----+-----+-----+-----+-----+
| service_no | name   | dsoi_mem_no | tennis_mem_no | lib_card |
+-----+-----+-----+-----+-----+
| 123        | asingh | qp1         | t1            | 001      |
| 124        | b sharma | qp2        | t2            | NULL     |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

The screenshot shows a terminal window with a red sidebar on the left containing various application icons. The terminal output shows the execution of MySQL commands. The first command is a SELECT statement that returns an empty set. The second command is an INSERT statement that adds a row to the 'main' table. The third command is a SELECT statement that returns a single row with the data inserted by the previous command. The fourth command is an INSERT statement that adds another row to the 'main' table. The fifth command is a SELECT statement that returns two rows, including the data from the previous INSERT statement. The terminal window title is 'murali@murali-laptop: ~'. The system tray at the bottom shows the date and time as 'Sat Jul 12, 00:30'. The taskbar at the bottom shows several open applications: Firefox (2), LibreOffice, mate-scre..., nautilus (2), Terminal (2), mysql1.ppt ..., and my sql preli...



# UPDATE DATA

File Edit View Search Terminal Help

```
mysql> update main set lib_card='002' where service_no=124;  
Query OK, 0 rows affected (0.11 sec)  
Rows matched: 1 Changed: 0 Warnings: 0
```

```
mysql> select * from main;  
+-----+-----+-----+-----+-----+  
| service_no | name      | dsoi_mem_no | tennis_mem_no | lib_card |  
+-----+-----+-----+-----+-----+  
| 123        | asingh   | qp1         | t1            | 001      |  
| 124        | b sharma | qp2         | t2            | 002      |  
+-----+-----+-----+-----+-----+  
2 rows in set (0.00 sec)
```

```
mysql> delete from main where lib_card='001';  
Query OK, 1 row affected (0.07 sec)
```

```
mysql> select * from main;  
+-----+-----+-----+-----+-----+  
| service_no | name      | dsoi_mem_no | tennis_mem_no | lib_card |  
+-----+-----+-----+-----+-----+  
| 124        | b sharma | qp2         | t2            | 002      |  
+-----+-----+-----+-----+-----+  
1 row in set (0.00 sec)
```

```
mysql>
```

# DELETE RECORD , DROP TABLE

```
Applications Places System Sat Jul 12, 00:3  
murali@murali-laptop: ~  
File Edit View Search Terminal Help  
mysql> update main set lib_card='002' where service_no=124;  
Query OK, 0 rows affected (0.11 sec)  
Rows matched: 1 Changed: 0 Warnings: 0  
  
mysql> select * from main;  
+-----+-----+-----+-----+-----+  
| service_no | name      | dsoi_mem_no | tennis_mem_no | lib_card |  
+-----+-----+-----+-----+-----+  
| 123        | asingh    | qp1         | t1             | 001      |  
| 124        | b sharma  | qp2         | t2             | 002      |  
+-----+-----+-----+-----+-----+  
2 rows in set (0.00 sec)  
  
mysql> delete from main where lib_card='001';  
Query OK, 1 row affected (0.07 sec)  
  
mysql> select * from main;  
+-----+-----+-----+-----+-----+  
| service_no | name      | dsoi_mem_no | tennis_mem_no | lib_card |  
+-----+-----+-----+-----+-----+  
| 124        | b sharma  | qp2         | t2             | 002      |  
+-----+-----+-----+-----+-----+  
1 row in set (0.00 sec)  
  
mysql> drop table main;  
Query OK, 0 rows affected (0.15 sec)  
  
mysql> show tables;  
Empty set (0.00 sec)  
  
mysql> 
```

Taskbar: Firefox (2), LibreOffice ., mate-scre..., nautilus (2), Terminal (2), [mysql1.ppt..., my sql preli...