

## LAB 5:

### GUI.Storing Data in Our MySQL Database via Our GUI

#### Nội dung

1. Installing and connecting to a MySQL server from Python
2. Configuring the MySQL database connection
3. Designing the Python GUI database
4. Using the SQL INSERT command
5. Using the SQL UPDATE command
6. Using the SQL DELETE command
7. Storing and retrieving data from our MySQL database
8. Using MySQL Workbench

#### 1. Cài đặt và kết nối với máy chủ MySQL từ Python

Hãy tải và cài đặt MySQL về, có thể download theo link:

<http://dev.mysql.com/downloads/windows/installer/>

+ Chọn mật khẩu cho người dùng root và Add User

#### Accounts and Roles


**Root Account Password**  
Enter the password for the root account. Please remember to store this password in a secure place.

MySQL Root Password:

Repeat Password:

Password Strength: **Weak**

**MySQL User Accounts**  
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.

MySQL Username	Host	User Role	
 Burkhard	%	DB Admin	<input type="button" value="Add User"/> <input type="button" value="Edit User"/> <input type="button" value="Delete"/>

+ .. \Python37\Lib\site- packages\mysql\connector:

Python37 > Lib > site-packages > mysql > connector		
Name	Date modified	Type
__pycache__	5/29/2019 10:50 AM	File folder
django	5/29/2019 10:22 AM	File folder
locales	5/29/2019 10:50 AM	File folder
__init__.py	3/28/2019 6:40 PM	Python File
abstracts.py	3/28/2019 6:40 PM	Python File
authentication.py	3/28/2019 6:40 PM	Python File
catch23.py	3/28/2019 6:40 PM	Python File

+ Gõ \sql

Trong MySql> prompt, gõ: SHOW DATABASES

```

C:\Program Files\MySQL\MySQL Shell 8.0\bin\mysqlsh.exe

MySQL JS > \connect --mc root@localhost
Creating a Classic session to 'root@localhost'
Please provide the password for 'root@localhost': *****
Save password for 'root@localhost'? [Y]es/[N]o/[e]x (default No): Y
Fetching schema names for autocompletion... Press ^C to stop.
Your MySQL connection id is 21
Server version: 8.0.16 MySQL Community Server - GPL
No default schema selected; type \use <schema> to set one.

MySQL localhost:3306 ssl JS > SHOW DATABASES;
SyntaxError: Unexpected identifier

MySQL localhost:3306 ssl JS > \sql
Switching to SQL mode... Commands end with ;

MySQL localhost:3306 ssl SQL > SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sakila |
| sys |
| world |
+-----+
6 rows in set (0.0009 sec)

```

+ Tạo file: **MySQL-connect.py**:

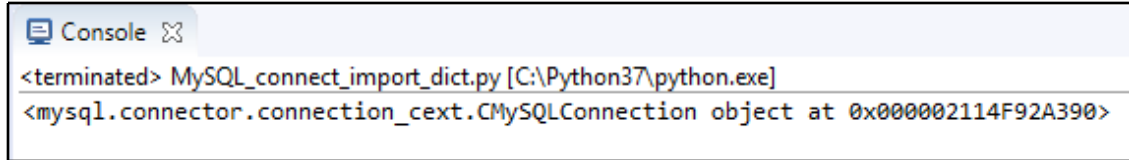
```

import mysql
conn = mysql.connector.connect(user=<adminUser>, password=<adminPwd>,
host='127.0.0.1')

```

```
print(conn)
conn.close()
```

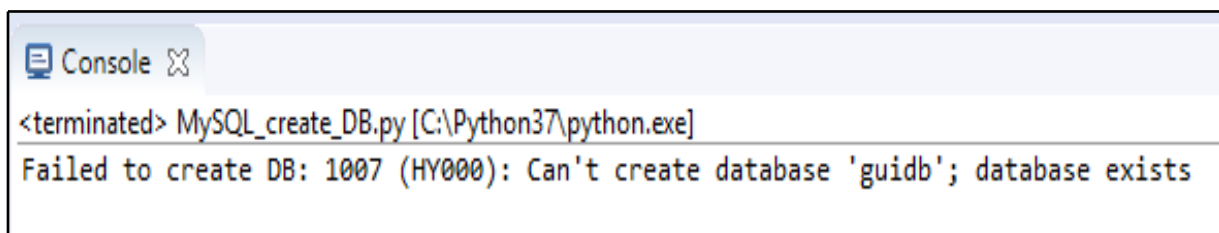
### OUTPUT:



```
<terminated> MySQL_connect_import_dict.py [C:\Python37\python.exe]
<mysql.connector.connection_cext.CMySQLConnection object at 0x000002114F92A390>
```

## 2. Định cấu hình kết nối cơ sở dữ liệu MySQL:

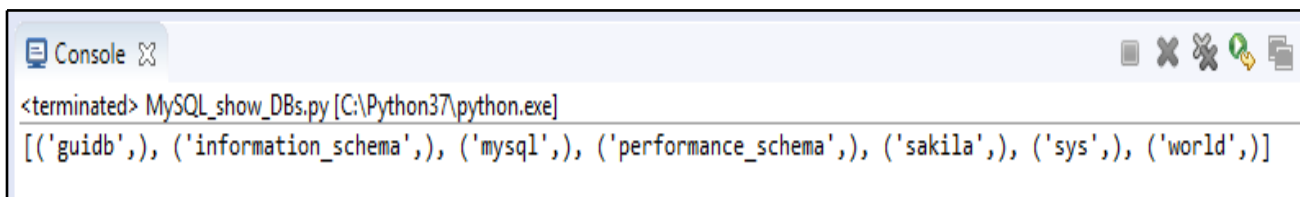
+Thêm module tạo từ điển lưu giữ thông tin kết nối,



```
<terminated> MySQL_create_DB.py [C:\Python37\python.exe]
Failed to create DB: 1007 (HY000): Can't create database 'guidb'; database exists
```

+ Tạo module mới (MySQL\_show\_DBs.py), thêm mã sau:

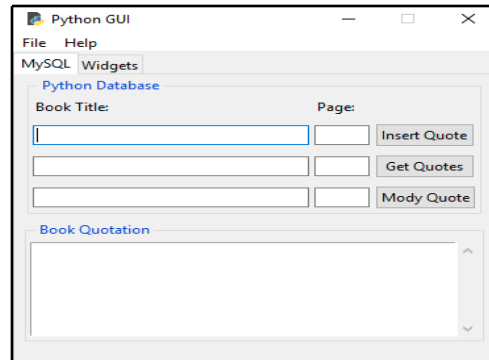
```
import mysql.connector
import GuiDBConfig as guiConf
# unpack dictionary credentials
conn = mysql.connector.connect(**guiConf.dbConfig)
cursor = conn.cursor()
cursor.execute("SHOW DATABASES") print(cursor.fetchall())
conn.close()
```



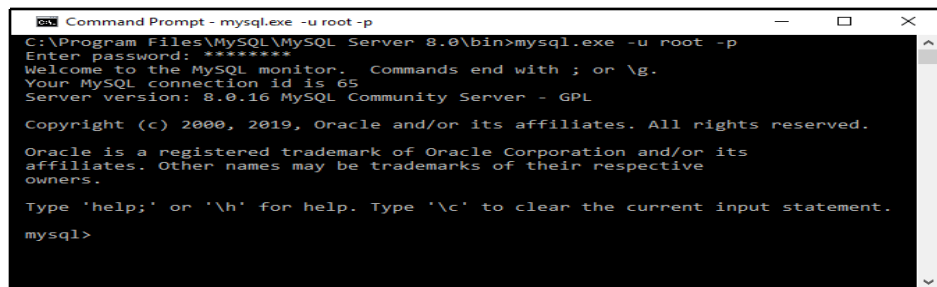
```
<terminated> MySQL_show_DBs.py [C:\Python37\python.exe]
[('guidb',), ('information_schema',), ('mysql',), ('performance_schema',), ('sakila',), ('sys',), ('world',)]
```

### 3. Thiết kế cơ sở dữ liệu GUI Python:

+ Mở file GUI\_TCP\_IP.py và save thành file GUI\_MySQL.py (Tải code từ website Packt), được kết quả như hình:



+ Sau khi chạy mysql.exe:



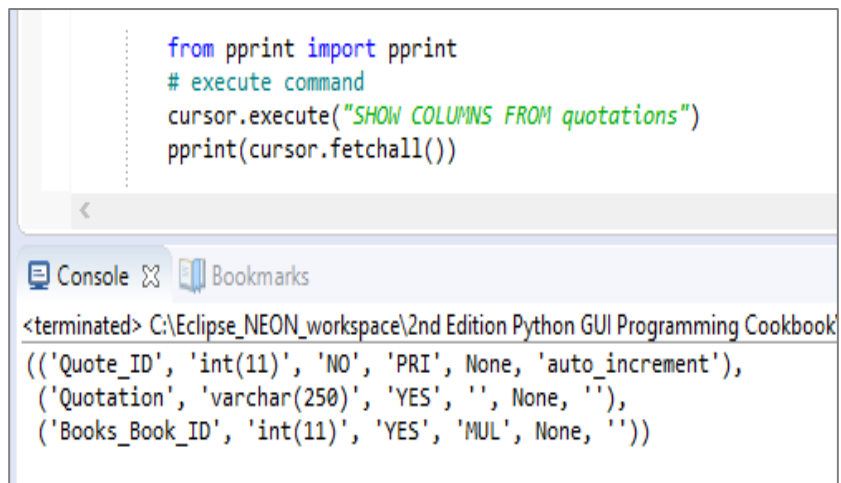
+ Chèn vào các lệnh:

**SHOW COLUMNS FROM books**

**SHOW TABLES**

**SHOW COLUMNS**

**SHOW COLUMNS** lại với print như hình sau:



#### 4. Sử dụng lệnh SQL INSERT:

Mở Command Prompt và execute 2 câu lệnh **SELECT \* statements**, như hình:

```
mysql> USE guidb
Database changed
mysql> SELECT * FROM books;
+-----+-----+-----+
| Book_ID | Book_Title          | Book_Page |
+-----+-----+-----+
|      1 | Design Patterns     |      7    |
|      2 | xUnit Test Patterns |     31    |
+-----+-----+-----+
2 rows in set (0.10 sec)

mysql> SELECT * FROM quotations;
+-----+-----+-----+
| Quote_ID | Quotation                                                    | Books_Book_ID |
+-----+-----+-----+
|      1 | Programming to an Interface, not an Implementation         |      1        |
|      2 | Philosophy of Test Automation                               |      2        |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

#### 5. Sử dụng lệnh SQL UPDATE tạo ra như hình:

+ Tạo showData, updateGOF method được kết quả như hình:

```
<terminated> C:\Eclipse_NEON_workspace\2nd Edition Python GUI Programming Cookbook\Ch07_Code\GUI_MySQL_class.py
((1, 'Design Patterns', 7), (2, 'xUnit Test Patterns', 31))
((1, 'Programming to an Interface, not an Implementation', 1), (2, 'Philosophy of Test Automation', 2))
```

```
# execute command
cursor.execute("SELECT Book_ID FROM books WHERE Book_Title = 'Design Patterns'")
primKey = cursor.fetchall()[0][0]
print("Primary key=" + str(primKey))

cursor.execute("SELECT * FROM quotations WHERE Books_Book_ID = (%s)", (primKey,))
print(cursor.fetchall())

<terminated> C:\Eclipse_NEON_workspace\2nd Edition Python GUI Programming Cookbook\Ch07_Code\GUI_MySQL_class.py
Primary key=1
((1, 'Programming to an Interface, not an Implementation', 1),)
```

+ Mở MySQL và run the **SELECT \* statements**:

```
mysql> USE guidb
Database changed
mysql> SELECT * FROM books;
+-----+-----+-----+
| Book_ID | Book_Title          | Book_Page |
+-----+-----+-----+
|      1 | Design Patterns     |          7 |
|      2 | xUnit Test Patterns |         31 |
+-----+-----+-----+
2 rows in set (0.10 sec)

mysql> SELECT * FROM quotations;
+-----+-----+-----+
| Quote_ID | Quotation                                                    | Books_Book_ID |
+-----+-----+-----+
|      1 | Programming to an Interface, not an Implementation          |              1 |
|      2 | Philosophy of Test Automation                                |              2 |
+-----+-----+-----+
```

```
mysql> SELECT * FROM books;
+-----+-----+-----+
| Book_ID | Book_Title          | Book_Page |
+-----+-----+-----+
|      1 | Design Patterns     |          7 |
|      2 | xUnit Test Patterns |         31 |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> SELECT * FROM quotations;
+-----+-----+-----+
| Quote_ID | Quotation                                                    | Books_Book_ID |
+-----+-----+-----+
|      1 | Pythonic Duck Typing: If it walks like a duck and talks like a duck it probably is a duck... |              1 |
|      2 | Philosophy of Test Automation                                |              2 |
+-----+-----+-----+
```

## 6. Sử dụng lệnh SQL DELETE:

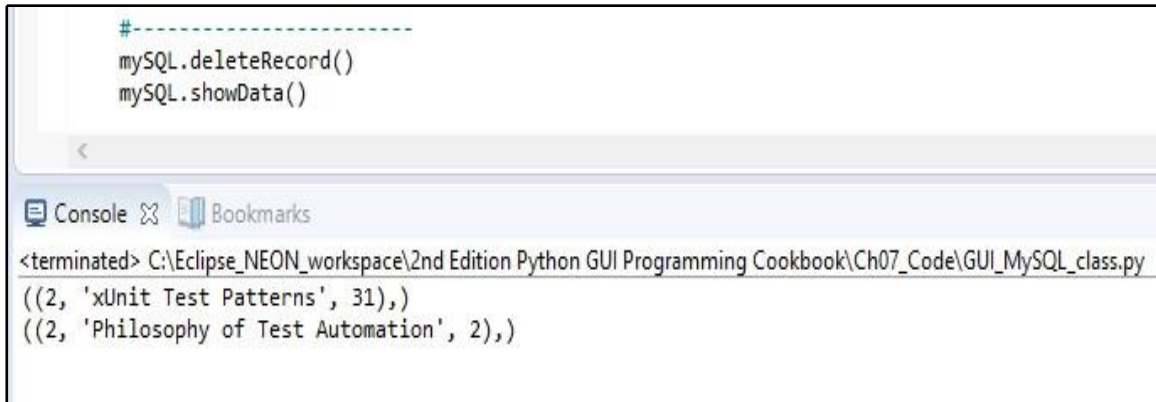
+ SQL command: `cursor.execute("DELETE FROM books WHERE Book_ID = 1")`

```
mysql> SELECT * FROM books;
+-----+-----+-----+
| Book_ID | Book_Title          | Book_Page |
+-----+-----+-----+
|      2 | xUnit Test Patterns |         31 |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql> SELECT * FROM quotations;
+-----+-----+-----+
| Quote_ID | Quotation                                                    | Books_Book_ID |
+-----+-----+-----+
|      1 | Programming to an Interface, not an Implementation          |              1 |
|      2 | Philosophy of Test Automation                                |              2 |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

+ Hãy tạo deleteRecord() method và run results như hình:

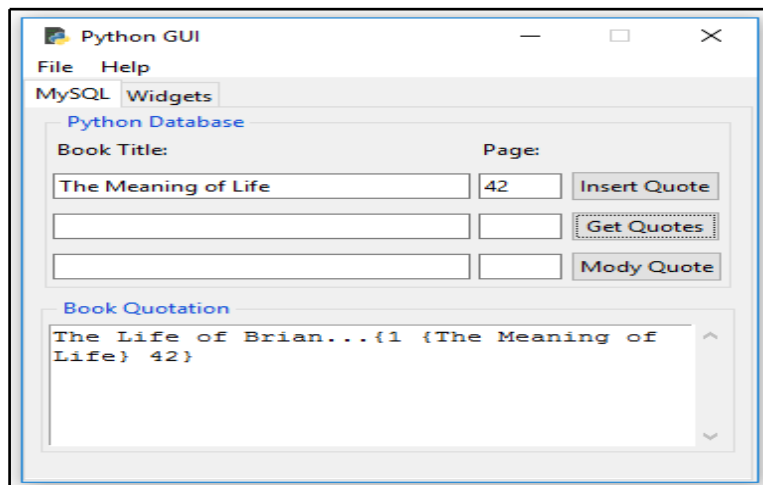


```
#-----
mysql.deleteRecord()
mysql.showData()
```

<terminated> C:\Eclipse\_NEON\_workspace\2nd Edition Python GUI Programming Cookbook\Ch07\_Code\GUI\_MySQL\_class.py  
 ((2, 'xUnit Test Patterns', 31),)  
 ((2, 'Philosophy of Test Automation', 2),)

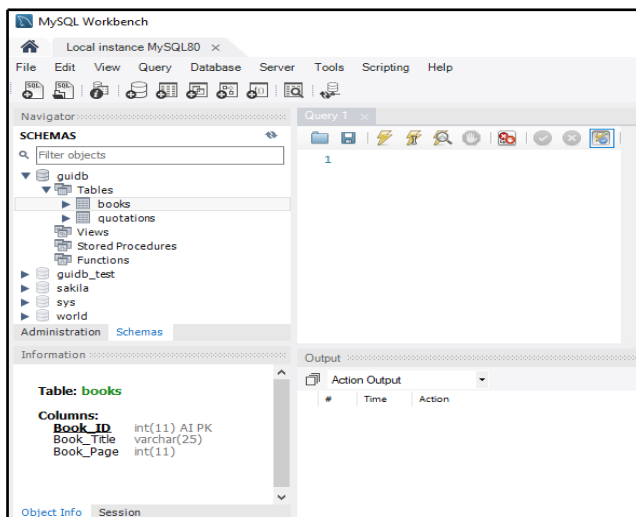
## 7. Lưu trữ và truy xuất dữ liệu:

Sử dụng tiện ích ScrolledText để chèn, truy xuất và sửa đổi khi nhập các trích dẫn cuốn sách và lưu trữ trong cơ sở dữ liệu.



## 8. Sử dụng MySQL Workbench:

- + Download và install MySQL Workbench,
- + Chọn **guidb**:



- + Viết và thực thi một số lệnh SQL như hình sau:

