# EECS116/CS122A

# Mini-Project 2 - Database Programming

In this project, you will learn how to write a program that can interact with a database. The project is due by 11:59PM, 03/15.

**Deliverables**
1. The source code of your program that can interact with MySQL.
2. The output of your program.

**STEP 1 – Choose the programming language and install the library**

In this project, we recommend you to use Java or Python to write your program. Before start, you need to download the corresponding MySQL library. We provide sample templates for Java and Python below.

***Java***: To connect MySQL from java, you have to use the JDBC driver from MySQL. The MySQL JDBC driver is called "MySQL Connector/J". You should be able to find the latest MySQL JDBC driver on this page
http://dev.mysql.com/downloads/connector/j/5.0.html

Download the file, extract it, and put the mysql-connector-java-5.0.8-bin.jar file to your library directory.

***Python***: If you use Python as the programming language, you should use Python2.7 to work with MySQL. Download MySQLdb for Python 2.7 here:
https://pypi.python.org/pypi/MySQL-python/1.2.5



Choose the .exe file to install (MySQL-python-1.2.5.win32-py2.7.exe).
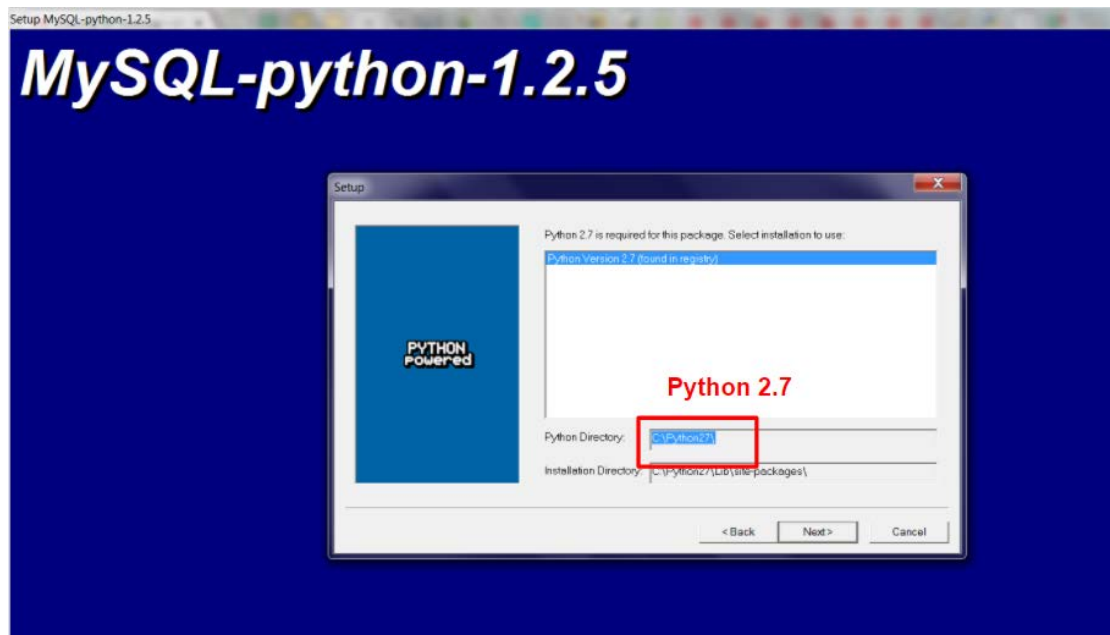
We also provide template codes for mysql interaction in Java and Python:
1. Java code template
2. Python code template:
   Here's the example code, in the example codes, the program establish the connection to the database "sample_python" at localhost (your local machine), using user name: root, password: xxxxxxxxxx.

```
import MySQLdb

db = MySQLdb.connect(host="localhost",
                     user="root",
                     passwd="xxxxxxxxxx",
                     db="sample_python")
cur = db.cursor()
cur.execute("SELECT * FROM reserves")
for row in cur.fetchall():
    print row

db.close
```

**STEP 2 – Write the program**
Use your localhost in MySQL as the server. Download the SQL file we prepared (Project1.sql) here:
https://drive.google.com/drive/u/0/folders/1HbDfFrs9Y4mEB4tfnRrjqBvzSq29rePX
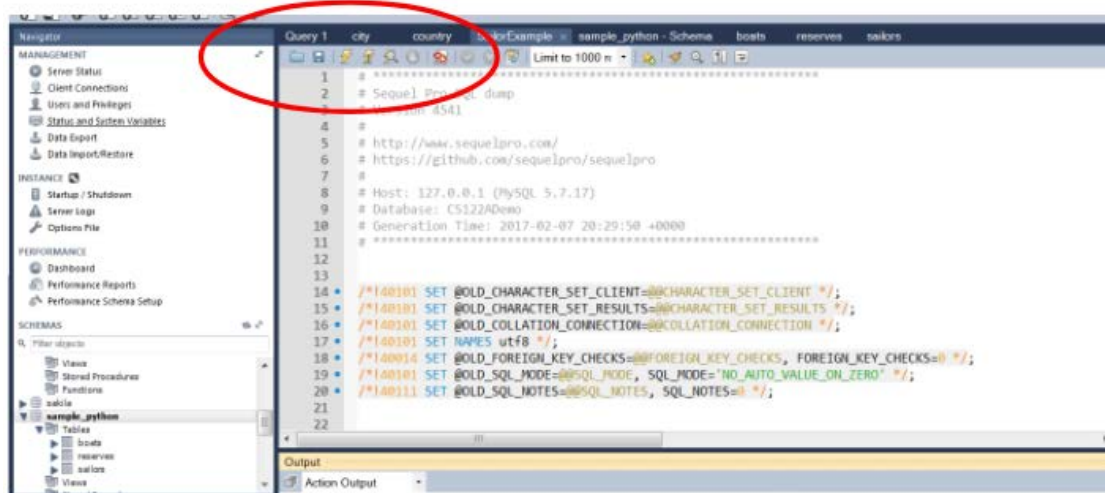
Open your MySQL. In the schemas area, right click to create a schema name it anything you prefer (here we use sample_python), and then double click on the "sample_python" to make it a default DB to be used.
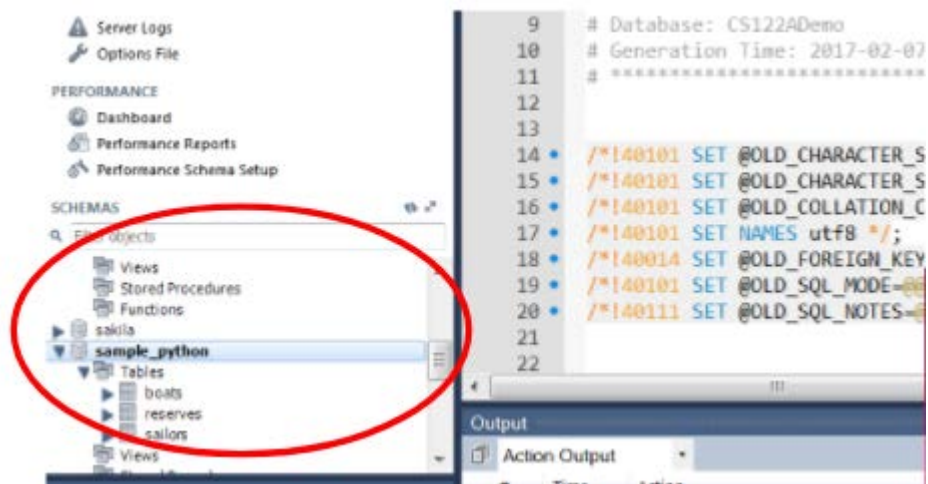
Click File - Open SQL Script. Choose the Project1.sql you downloaded.
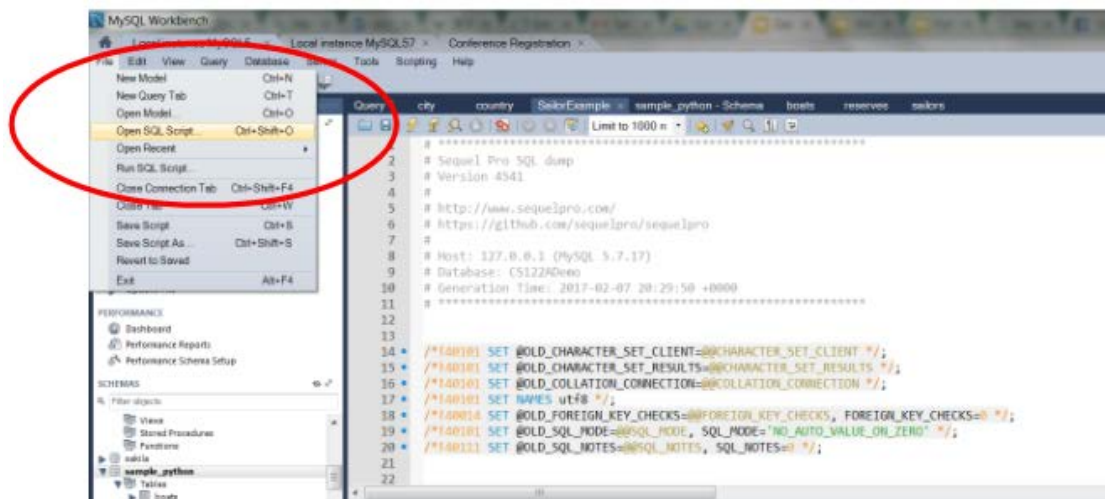


Click the "thunderbolt" to execute the script





Click the refresh button to refresh the schemas. Then check the

schema "sample_python" to see if tables "question" and "result" are there. Then, the dataset is ready!

Remember the database is called sample_python or anything you named . Use username and password you created to login. Modify the corresponding URL (IP address and database name), user name and password in the code template.

There are two tables in the database "project2":

question (<u>name</u>, A, B)

result (<u>name</u>, result)

Write a program to do the following functions in order:

1. In table "question", there is already some data: A list of student names and two random numbers A and B. Your program should print out all the data in this table. Example output:

question:

John Smith, 3156, 9327

George Wang, 1357, 8642

…

2. Find your own name in table "question", get the numbers A and B, then calculate A * B + the last 2 digits of your student id, e.g., if A=3156, B= 9327, your student id is 12345678. The calculation result will be 3156*9327+78=29436090. Insert your name, last 2 digits of your student id and the result to the "result" table. If you want to execute your program multiple times and doesn't want to see errors of trying to insert duplicate entries, you may use "INSERT IGNORE INTO" statement, which will do nothing if there is already the same entry in the table.

3. Form a query to find your name and the result from the "result" table, print it out. Example output:

result:

John Smith, 29436090

Put your outputs to a text file using the name "output.txt", and then archive with your source code (better using the name project2.java or .py) to the file "MP2-xxxxxxxx.zip", xxxxxxxx being your student id, and turn it in on eee dropbox under folder "project2". **Note: Not submitting the file under the correct folder may cause a deduction in your credit**.