ML109 Homework 4

MLLO 20210422

Submission

- Deadline: **5/7 Fri. 14:00**
- Submission: **Ceiba**
- File name & format
  - <學號>.zip, ex. r09900001.zip
  - (unzip 後須有以下檔案，且不能有其他檔案)
    - hw4.py
    - report.pdf
- 檔案格式錯誤一律扣 **10%**
- 說明：
  - hw4.py : 各題的 code
  - report.pdf : 第二至八題的 code 截圖 & results
  - (作業敘述見下兩頁投影片)
- Version requirements
  - Python 3
  - MySQL 8

Homework 4 Database Programming using SQL

- In this homework, you need to write a Python program and write SQL statement inside the Python program to complete various tasks. You should need mysql.connector as your mySQL connection package. The only exception is task 1, where you are allowed to use “pandas” plus “sqlalchemy” package. For other tasks, use mysql.connector” as the python package to connect to MySQL DBMS.
- Two sample code files are provided for your reference as starting point.

- 1. Download **student_data.csv** of EE5178 from the link, and then input this data into a student table in your database(named “DB_class”) in MySQL. **10%**
  - You can do this using Python (either just Python or Python+Pandas.)

- Note:
  - As a special consideration, If you do have difficulty using Python, you are allowed to do this manually using MySQL command line or MySQL workbench. You are responsible to find out the commands and steps this if you want to load the data manually.
  - If you choose MySQL command or MySQL Workbench, write down your method (include your commands) and submit it.

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- 2.- 8. Please use SQL query in python to select the information.
- The codes (2.- 8.) and the readout results (2.- 6. & 8.) should be presented in the **report.pdf**

- 2. Read and show the information about yourself from the student table (You can use either your name or student ID to select out yourself.) **10%**
- 3. Show the list of your peer students. You need to select these students using department information. You are not allowed to use student ID or student name to complete this tasks. The definition of “peer student” is as follows: **10%**
  - For undergraduate students, your peer students are those in the same department and same year as you.
  - For graduate students, your peer students are those in the same graduate program and same year as yours.
- 4. Count the total number of students taking this class. Print out your answer. **10%**
- 5. Read a student ID: **r09921000** (which TAs have inserted in .CSV) Then select the information of that student using the ID. (hint: you need to save the ID value to a variable and use the variable to select the information)**15%**
- 6. Update your own value of the “身分" column from “校內生" to “特優生". And print the updated information about yourself again. **15%**
- 7. Insert three new students listed as below into the student table. **15%**

身份	系所	學號	姓名
旁聽生	歷史系_一年級	b09900201	小花
校內生	歷史系_四年級	b06900332	小草
校內生	機械系_四年級	b06502055	小天

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- 8. Write a select statement to read back the new students you inserted. However, in this task you should prepare the statement. And then execute the prepared statement three times using their student ID as selection condition. **(15%)**
  Note: This task is a little bit harder (but not that hard, either.) You may need to do a little bit research on your own to accomplish this task.