COMS W4111: Introduction to Databases
Spring 2023, Sections 002

Homework 0: Environment Setup and Test

Introduction and Overview

HW Objectives

This section of W4111 - Intro. to Databases defines required and recommended SW tools. Students are busy and often defer tasks to "just before the homework is due." In previous semesters, students were struggling with SW installation right before the submission deadline. To avoid this problem, HW 0 tests the installation and configuration of the SW.

The specification for HW 0 documents the installation and configuration tasks. If you cannot access the Google doc, there is a PDF version in the HW 0 GitHub repository.

Submission Instructions

Complete all the tests in this notebook and submit only this notebook as a PDF to GradeScope. To convert the jupyter notebook into a pdf you can use either of the following methods:

- File --> Print Preview --> Print --> Save to PDF
- File --> Download As HTML --> Print --> Save to PDF

Due date: September 29, 11:59 PM EDT on GradeScope

Please note: You may NOT use late days for the submission of this assignment. Check Courseworks for GradeScope access.

It is recommended that you put the screenshots into the same folder as this notebook so you do not have to alter the path to include your images.

Please read all the instructions thoroughly!

Add Student Information

1. Replace my name with your full name.
2. Replace my UNI with your UNI.
3. Replace "Cool Track" with either "Programming" or "Non-programming."

In [1]:
```
# Print your name, uni, and track below

name = "Haoqing Wang"
uni = "hw2888"
track = "Programming"

print(name)
print(uni)
print(track)
```

```
Haoqing Wang
hw2888
Programming
```

Testing Anaconda and Python

Run the following cells to ensure that you have the correct version of Python and all necessary packages installed.

Python Version

The test below should return the path to the Python interpreter for your Anaconda environment. The exact path may be differ from Mac to Windows, or based on installation choices you made. As long as the path has "anacondaq3" in it, you should be OK.

In [2]:
```
import sys
```

In [3]:
```
ex = sys.executable
ex
```

Out[3]:
```
'/Users/teresewang/opt/anaconda3/bin/python'
```

In [4]:
```
# Checking that anacoda3 is in the path.
#
if 'anaconda3' in ex:
    print("Test seems OK.")
else:
    print("Not cool.")
```

```
Test seems OK.
```

The following tests that you have a sufficiently up to date version of Python.

In [5]:
```
print("Python version information:", sys.version_info, "\n")
if sys.version_info.major != 3 or \
    ((sys.version_info.major == 3) and (sys.version_info.minor < 9)):
    print("You have an invalid version of Python.")
else:
    print("Your Python version is OK.")
```

```
Python version information: sys.version_info(major=3, minor=9, micro=12, releaselevel='final', serial=0)

Your Python version is OK.
```

If the test fails, you have to install Anaconda properly.

Install ipython-sql

The actual message below will vary based on what you do/do not already have installed. You are fine as long as there is not a major error.

In [6]:
```
!pip install ipython-sql
```

```
Collecting ipython-sql
  Downloading ipython_sql-0.4.1-py3-none-any.whl (21 kB)
Requirement already satisfied: sqlalchemy>=0.6.7 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages
(from ipython-sql) (1.4.32)
Requirement already satisfied: ipython>=1.0 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (fro
m ipython-sql) (8.2.0)
Requirement already satisfied: six in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from ipython
-sql) (1.16.0)
Requirement already satisfied: ipython-genutils>=0.1.0 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-pa
ckages (from ipython-sql) (0.2.0)
Collecting prettytable<1
  Downloading prettytable-0.7.2.zip (28 kB)
Collecting sqlparse
  Downloading sqlparse-0.4.3-py3-none-any.whl (42 kB)
     |                                | 42 kB 10.4 MB/s eta 0:00:01
Requirement already satisfied: stack-data in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from
ipython>=1.0->ipython-sql) (0.2.0)
Requirement already satisfied: backcall in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from ip
ython>=1.0->ipython-sql) (0.2.0)
Requirement already satisfied: decorator in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from i
python>=1.0->ipython-sql) (5.1.1)
Requirement already satisfied: traitlets>=5 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (fro
m ipython>=1.0->ipython-sql) (5.1.1)
Requirement already satisfied: pexpect>4.3 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from
ipython>=1.0->ipython-sql) (4.8.0)
Requirement already satisfied: prompt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2.0.0 in /Users/teresewang/opt/anaconda3/
lib/python3.9/site-packages (from ipython>=1.0->ipython-sql) (3.0.20)
Requirement already satisfied: matplotlib-inline in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages
(from ipython>=1.0->ipython-sql) (0.1.2)
Requirement already satisfied: pickleshare in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from
ipython>=1.0->ipython-sql) (0.7.5)
Requirement already satisfied: pygments>=2.4.0 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages
(from ipython>=1.0->ipython-sql) (2.11.2)
Requirement already satisfied: jedi>=0.16 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from
ipython>=1.0->ipython-sql) (0.18.1)
Requirement already satisfied: appnope in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from ipy
thon>=1.0->ipython-sql) (0.1.2)
Requirement already satisfied: setuptools>=18.5 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages
(from ipython>=1.0->ipython-sql) (61.2.0)
Requirement already satisfied: parso<0.9.0,>=0.8.0 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packag
es (from jedi>=0.16->ipython>=1.0->ipython-sql) (0.8.3)
Requirement already satisfied: ptyprocess>=0.5 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages
(from pexpect>4.3->ipython>=1.0->ipython-sql) (0.7.0)
Requirement already satisfied: wcwidth in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from pro
mpt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2.0.0->ipython>=1.0->ipython-sql) (0.2.5)
Requirement already satisfied: greenlet!=0.4.17 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages
(from sqlalchemy>=0.6.7->ipython-sql) (1.1.1)
Requirement already satisfied: pure-eval in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from s
tack-data->ipython>=1.0->ipython-sql) (0.2.2)
Requirement already satisfied: asttokens in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from s
tack-data->ipython>=1.0->ipython-sql) (2.0.5)
Requirement already satisfied: executing in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (from s
tack-data->ipython>=1.0->ipython-sql) (0.8.3)
Building wheels for collected packages: prettytable
  Building wheel for prettytable (setup.py) ... done
  Created wheel for prettytable: filename=prettytable-0.7.2-py3-none-any.whl size=13714 sha256=acd5d627c3fee482
7f23a0ecd7c7497e2a056f257bc4cd634186459c3688df5a
  Stored in directory: /Users/teresewang/Library/Caches/pip/wheels/75/f7/28/77a076f1fa8cbeda61aca712815d04d7a32
435f04a26a2dd7b
Successfully built prettytable
Installing collected packages: sqlparse, prettytable, ipython-sql
Successfully installed ipython-sql-0.4.1 prettytable-0.7.2 sqlparse-0.4.3
```

- If you got errors, please follow the instructions in the ipython-sql site to install the magic.
- **NOTE:** Running the cell above may produce multiple notifications about installing requirements or requirement already satisfied. That is normal.
- Once you get the install to work without errors, run the following cell.

In [7]:
```
%load_ext sql
```

- If you did not get an error response, your test passed.
- If you run the cell twice, your answer should be:

```
The sql extension is already loaded. To reload it, use:
  %reload_ext sql
```

SQLAlchemy/PyMySQL

Install `sqlalchemy` and `pymysql.` These are Python language packages for interacting with SQL and MySQL databases. Your actual response message may be different. Your environment is OK if you do not get a major error.

In [8]:
```
!pip install sqlalchemy
!pip install pymysql
```

```
Requirement already satisfied: sqlalchemy in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages (1.4.3
2)
Requirement already satisfied: greenlet!=0.4.17 in /Users/teresewang/opt/anaconda3/lib/python3.9/site-packages
(from sqlalchemy) (1.1.1)
Collecting pymysql
  Using cached PyMySQL-1.0.2-py3-none-any.whl (43 kB)
Installing collected packages: pymysql
Successfully installed pymysql-1.0.2
```

MySQL Connectivity

You installed MySQL Community Edition. You have to choose a userID and password during the installation.

Please set the values in the cell below.

In [9]:
```
# Replace root with the user ID for MySQL and dbuserdbuser with the password you set.
%sql mysql+pymysql://root:WHQ21cd1c689742@localhost
```

In [10]:
```
#
```

PyCharm

Required for Programming Track only, but recommended for all. Follow the instructions to setup PyCharm and run the test. Take a screenshot and insert it into the notebook using the cell below. You may have to change the path to the name and/or location of your image.

In [11]:
```
from IPython.display import Image

Image("./PyCharmScreenshot.png")
```

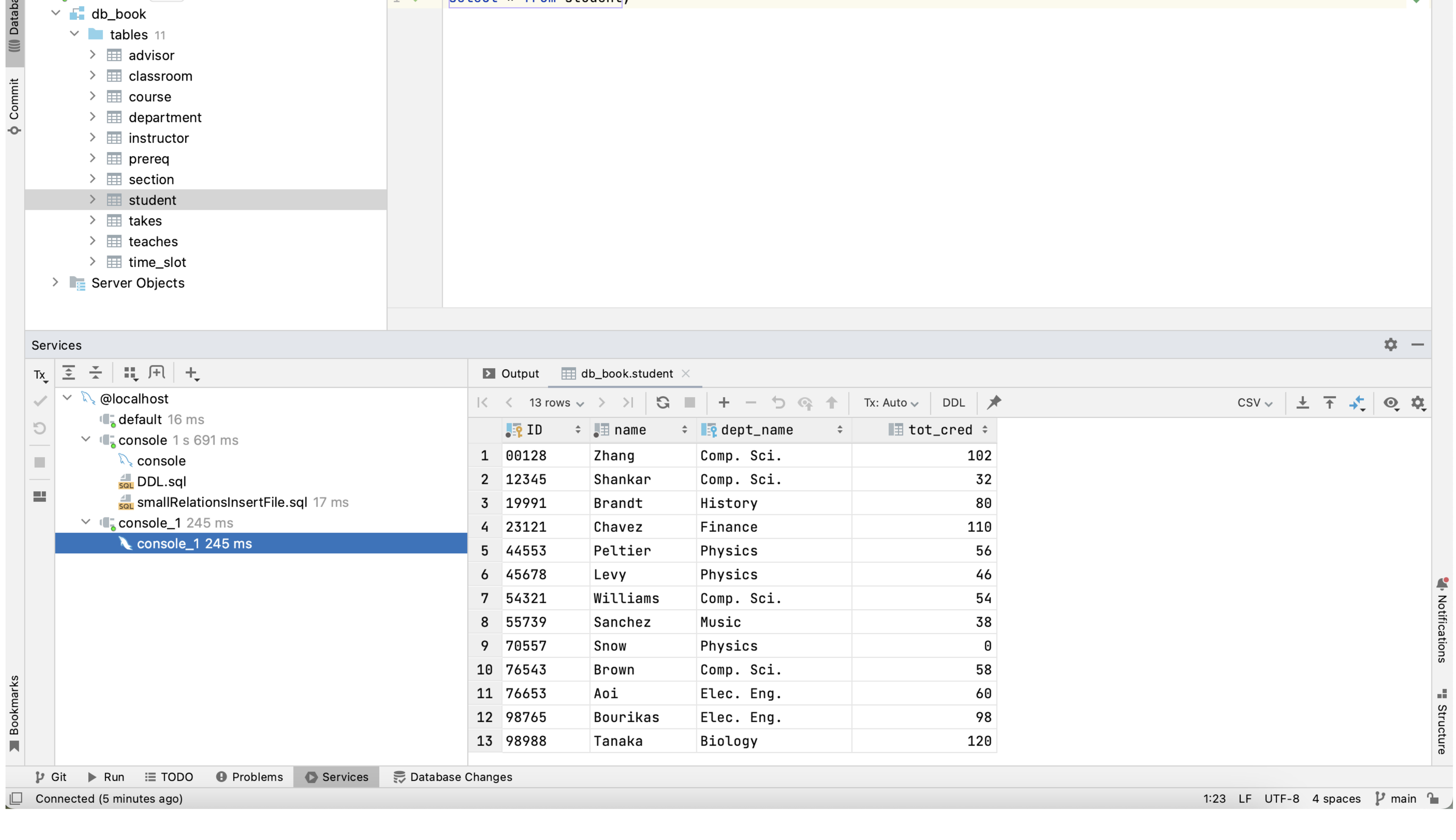
Out[11]:

DataGrip

Follow the instructions in the homework definition to setup DataGrip and connect DataGrip to MySQL. Insert your screenshot of the successful query on the sample database below. You may have to change the path to the name and/or location of your image.

In [12]:
```
Image("./DataGripScreenshot.png")
```

Out[12]:



The code below indicates how to connect this notebook to your AWS Database.

You will need to change the username, password, and endpoint to match

End of HW 0