COMS W4111: Introduction to Databases

Homework 0 - Environment Setup

Introduction/Overview

Please consult the HW0: Environment PDF for detailed 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 17, 10:00am ET 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!

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

name = "Chandan Suri"
uni = "CS4090"
track = "Programming"

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

```
Chandan Suri
CS4090
Programming
```

Anaconda

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

Python Version

In [2]:
```
import sys

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 < 5)):
    print("You have an invalid version of Python.")
else:
    print("Your Python version is OK.")
```

```
Python version information: sys.version_info(major=3, minor=8, micro=8, releas
elevel='final', serial=0)

Your Python version is OK.
```

Python Path

In [4]:
```
python_found = False
anaconda_found = False

for p in sys.path:
    print(p)
    if "anaconda3" in p:
        print("Found anaconda3")
        anaconda_found = True
    if "python" in p:
        print("Found some kind of Python.")
        if not anaconda_found:
            print("Found some type of Python other than Anaconda.")
            print("Test fails")
        else:
            print("OK. Path is good.")
            python_found = True
        break

if python_found and anaconda_found:
    print("\nPassed all path tests.")
else:
    print("\nFailed path tests.")
```

```
/Users/chandansuri/Downloads/W4111_HW0 F21
/Users/chandansuri/opt/anaconda3/lib/python38.zip
Found anaconda3
Found some kind of Python.
OK. Path is good.

Passed all path tests.
```

Test Conda/Anaconda Version

In [5]:
```
import conda
```

In [6]:
```
conda_version_info =  conda.sys.version_info
print("Your conda version info is\n", conda_version_info)

print("Conda version information:", conda_version_info, "\n")
if conda_version_info.major != 3 or \
    ((conda_version_info.major == 3) and (conda_version_info.minor < 6)):
    print("You have an invalid version of Conda.")
else:
    print("Your Conda version is OK.")
```

```
Your conda version info is
 sys.version_info(major=3, minor=8, micro=8, releaselevel='final', serial=0)
Conda version information: sys.version_info(major=3, minor=8, micro=8, release
level='final', serial=0)

Your Conda version is OK.
```

Test Pandas

In [7]:
```
import pandas
p_version = pandas.__version__
p_nums = p_version.split(".")

print("Your pandas version is ", p_version)
if p_nums[0] != '1':
    print("Your version is invalid.")
else:
    print("Your version is OK.")

# This checks to see if you are on pandas 1.0.5 or 1.2.0 both of which are OK
```

```
Your pandas version is  1.2.4
Your version is OK.
```

If you do not have Pandas already you will need to install Pandas using the following cell:

In [8]:
```
!pip install pandas
```

```
Requirement already satisfied: pandas in /Users/chandansuri/opt/anaconda3/lib/
python3.8/site-packages (1.2.4)
Requirement already satisfied: python-dateutil>=2.7.3 in /Users/chandansuri/op
t/anaconda3/lib/python3.8/site-packages (from pandas) (2.8.1)
Requirement already satisfied: pytz>=2017.3 in /Users/chandansuri/opt/anaconda
3/lib/python3.8/site-packages (from pandas) (2021.1)
Requirement already satisfied: numpy>=1.16.5 in /Users/chandansuri/opt/anacond
a3/lib/python3.8/site-packages (from pandas) (1.20.1)
Requirement already satisfied: six>=1.5 in /Users/chandansuri/opt/anaconda3/li
b/python3.8/site-packages (from python-dateutil>=2.7.3->pandas) (1.15.0)
```

Install ipython-sql

In [9]:

```
!pip install ipython-sql
```

```
Collecting ipython-sql
  Downloading ipython_sql-0.4.0-py3-none-any.whl (19 kB)
Collecting sqlparse
  Downloading sqlparse-0.4.2-py3-none-any.whl (42 kB)
     |████████████████████████████████| 42 kB 1.4 MB/s eta 0:00:01
Requirement already satisfied: six in /Users/chandansuri/opt/anaconda3/lib/pyt
hon3.8/site-packages (from ipython-sql) (1.15.0)
Requirement already satisfied: ipython-genutils>=0.1.0 in /Users/chandansuri/o
pt/anaconda3/lib/python3.8/site-packages (from ipython-sql) (0.2.0)
Requirement already satisfied: sqlalchemy>=0.6.7 in /Users/chandansuri/opt/ana
conda3/lib/python3.8/site-packages (from ipython-sql) (1.4.7)
Requirement already satisfied: ipython>=1.0 in /Users/chandansuri/opt/anaconda
3/lib/python3.8/site-packages (from ipython-sql) (7.22.0)
Collecting prettytable<1
  Downloading prettytable-0.7.2.zip (28 kB)
Requirement already satisfied: pexpect>4.3 in /Users/chandansuri/opt/anaconda3
/lib/python3.8/site-packages (from ipython>=1.0->ipython-sql) (4.8.0)
Requirement already satisfied: backcall in /Users/chandansuri/opt/anaconda3/li
b/python3.8/site-packages (from ipython>=1.0->ipython-sql) (0.2.0)
Requirement already satisfied: setuptools>=18.5 in /Users/chandansuri/opt/anac
onda3/lib/python3.8/site-packages (from ipython>=1.0->ipython-sql) (52.0.0.pos
t20210125)
Requirement already satisfied: pygments in /Users/chandansuri/opt/anaconda3/li
b/python3.8/site-packages (from ipython>=1.0->ipython-sql) (2.8.1)
Requirement already satisfied: appnope in /Users/chandansuri/opt/anaconda3/lib
/python3.8/site-packages (from ipython>=1.0->ipython-sql) (0.1.2)
Requirement already satisfied: prompt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2.0.0 in
/Users/chandansuri/opt/anaconda3/lib/python3.8/site-packages (from ipython>=1.
0->ipython-sql) (3.0.17)
Requirement already satisfied: decorator in /Users/chandansuri/opt/anaconda3/l
ib/python3.8/site-packages (from ipython>=1.0->ipython-sql) (5.0.6)
Requirement already satisfied: traitlets>=4.2 in /Users/chandansuri/opt/anacon
da3/lib/python3.8/site-packages (from ipython>=1.0->ipython-sql) (5.0.5)
Requirement already satisfied: pickleshare in /Users/chandansuri/opt/anaconda3
/lib/python3.8/site-packages (from ipython>=1.0->ipython-sql) (0.7.5)
Requirement already satisfied: jedi>=0.16 in /Users/chandansuri/opt/anaconda3/
lib/python3.8/site-packages (from ipython>=1.0->ipython-sql) (0.17.2)
Requirement already satisfied: parso<0.8.0,>=0.7.0 in /Users/chandansuri/opt/a
naconda3/lib/python3.8/site-packages (from jedi>=0.16->ipython>=1.0->ipython-s
ql) (0.7.0)
```

```
Requirement already satisfied: ptyprocess>=0.5 in /Users/chandansuri/opt/anaco
nda3/lib/python3.8/site-packages (from pexpect>4.3->ipython>=1.0->ipython-sql)
(0.7.0)
Requirement already satisfied: wcwidth in /Users/chandansuri/opt/anaconda3/lib
/python3.8/site-packages (from prompt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2.0.0->i
python>=1.0->ipython-sql) (0.2.5)
Requirement already satisfied: greenlet!=0.4.17 in /Users/chandansuri/opt/anac
onda3/lib/python3.8/site-packages (from sqlalchemy>=0.6.7->ipython-sql) (1.0.0
)
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 s
ize=13699 sha256=c7dea428d80e6031406737de3c27c996281452ab6a7a6582e778b5f027010
af0
  Stored in directory: /Users/chandansuri/Library/Caches/pip/wheels/48/6d/77/9
517cb933af254f51a446f1a5ec9c2be3e45f17384940bce68
Successfully built prettytable
Installing collected packages: sqlparse, prettytable, ipython-sql
Successfully installed ipython-sql-0.4.0 prettytable-0.7.2 sqlparse-0.4.2
```

- 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 [11]:
```
%load_ext sql
```

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

In [12]:
```
!pip install sqlalchemy
!pip install pymysql
```

```
Requirement already satisfied: sqlalchemy in /Users/chandansuri/opt/anaconda3/
lib/python3.8/site-packages (1.4.7)
Requirement already satisfied: greenlet!=0.4.17 in /Users/chandansuri/opt/anac
onda3/lib/python3.8/site-packages (from sqlalchemy) (1.0.0)
Collecting pymysql
  Downloading PyMySQL-1.0.2-py3-none-any.whl (43 kB)
     |████████████████████████████████| 43 kB 692 kB/s eta 0:00:01
Installing collected packages: pymysql
Successfully installed pymysql-1.0.2
```

PyCharm

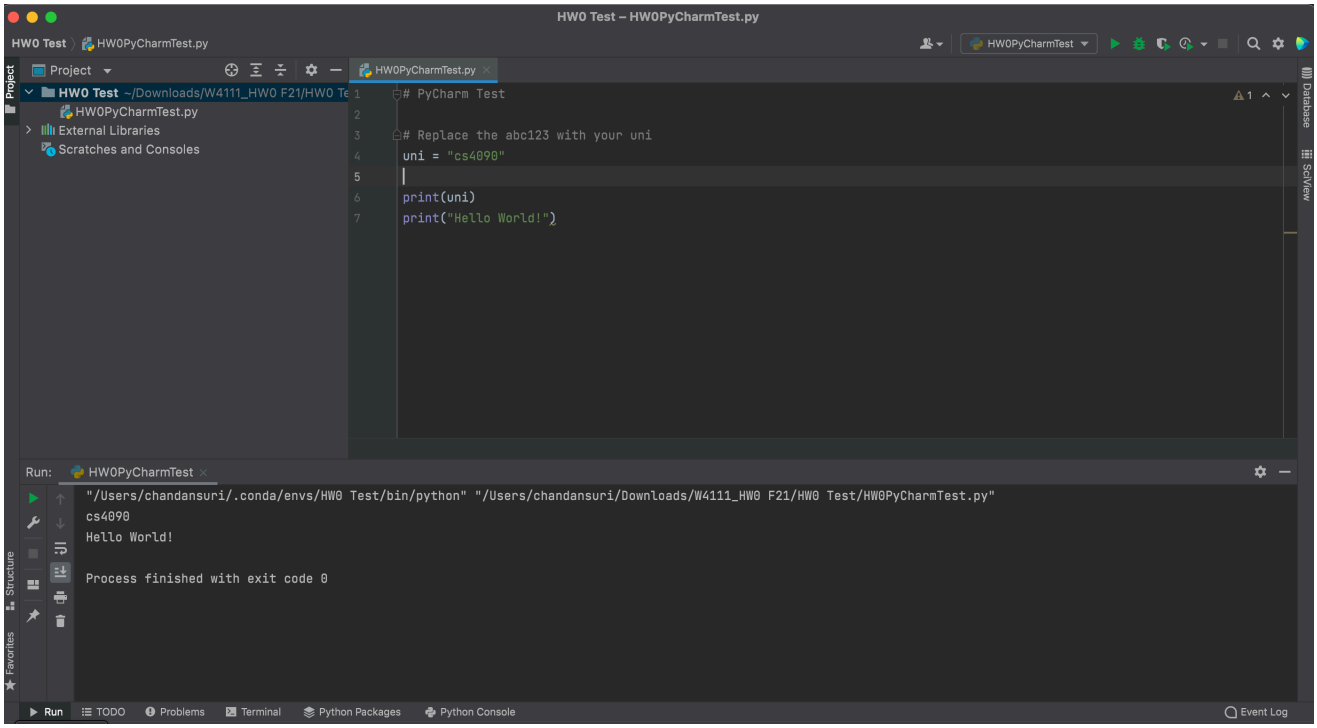
Required for Programming Track only, but recommended for all. Follow the instructions to setup PyCharm and run the test. Take a screenshot and insert it into the notebook using the cell below. You may have to change the path to the name and/or location of your image.

In [13]:

```
from IPython.display import Image

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

Out[13]:



MySQL Server Community Edition

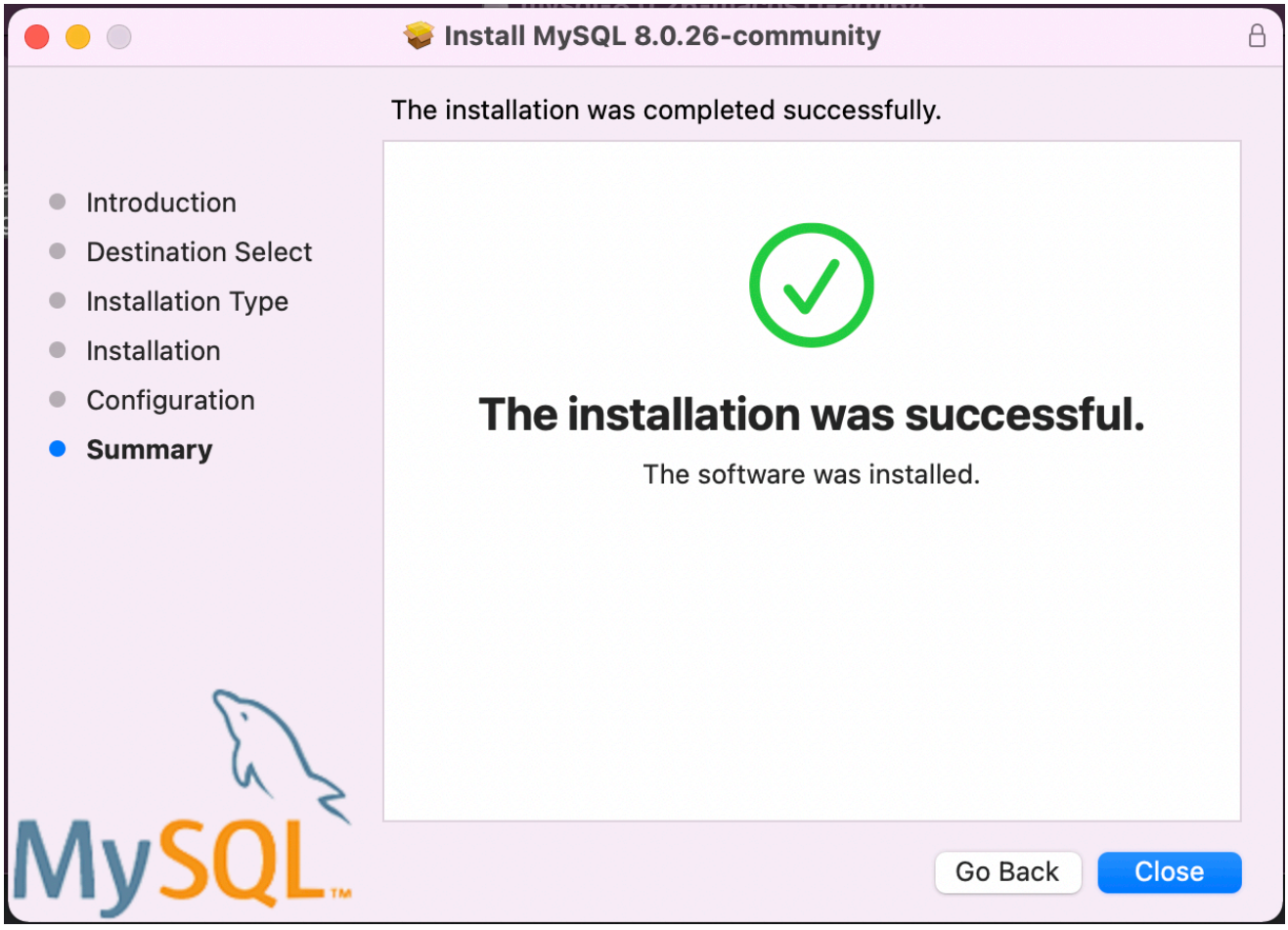
You must install MySQL (Server) Community. Follow the instructions in the PDF.

At some point, you will be promoted for/have to set login/authentication options. Write down and remember the root user ID and password. Choose the Legacy Authentication method.

Installing MySQL registers MySQL Server as a service. It should start automatically. If you are ever unsure if MySQL Server is running, there are online OS specific instructions for determining status, starting and stopping the server.

In [14]:
```
Image("./MySQLScreenshot.png")
```

Out[14]:

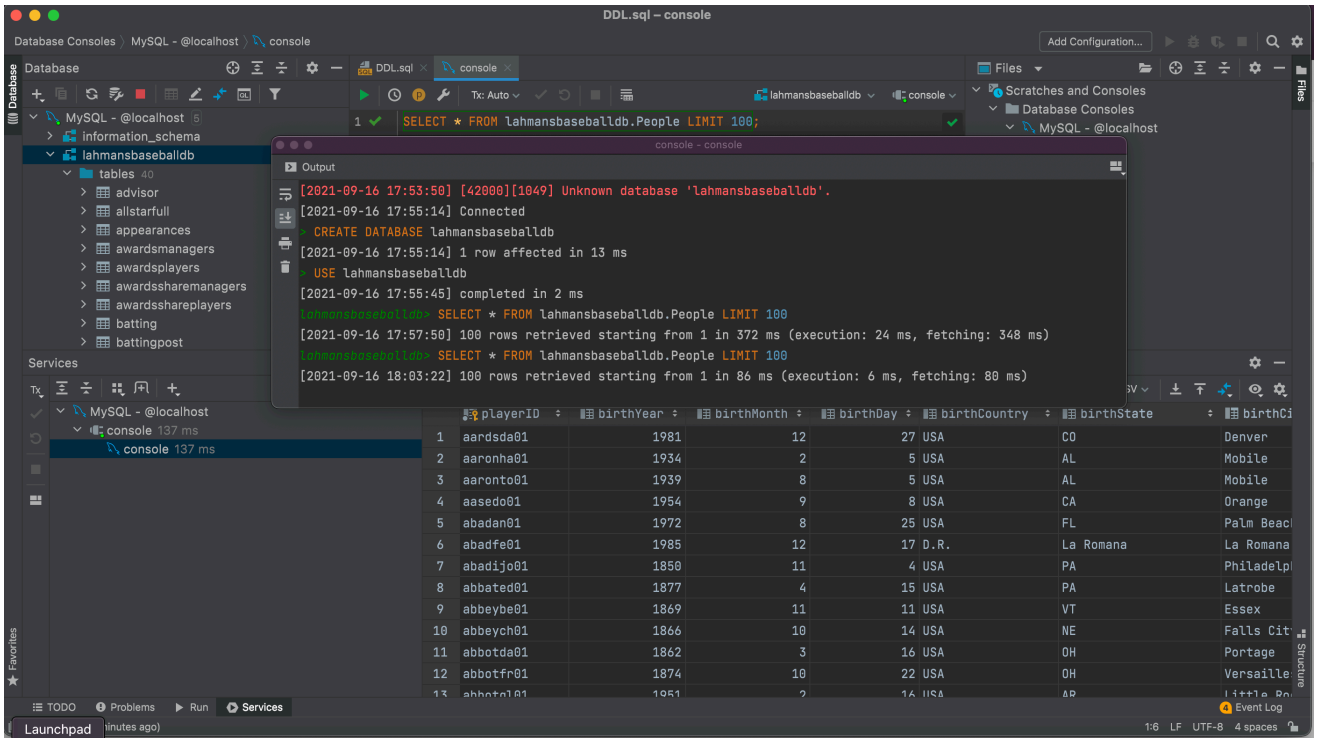


DataGrip

Follow the instructions to setup DataGrip and connect DataGrip to your MySQL server. Insert your screenshot of the successful query on the Lahman database into the notebook using the cell below. You may have to change the path to the name and/or location of your image.

In [22]:
```
Image("./DataGripScreenshot.png")
```

Out[22]:



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

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

In [23]:
```
%load_ext sql
%sql mysql+pymysql://root:dbuserdbuser@@localhost/lahmansbaseballdb
```

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

Run the cell below to query the MySQL database from the notebook:

In [24]:
```
%sql SELECT * FROM lahmansbaseballdb.people LIMIT 10;
```

```
 * mysql+pymysql://root:***@localhost/lahmansbaseballdb
10 rows affected.
```

Out[24]:

playerID	birthYear	birthMonth	birthDay	birthCountry	birthState	birthCity	deathYear	d
aardsda01	1981	12	27	USA	CO	Denver	None	
aaronha01	1934	2	5	USA	AL	Mobile	None	
aaronto01	1939	8	5	USA	AL	Mobile	1984	
aasedo01	1954	9	8	USA	CA	Orange	None	
abadan01	1972	8	25	USA	FL	Palm Beach	None	
abadfe01	1985	12	17	D.R.	La Romana	La Romana	None	
abadijo01	1850	11	4	USA	PA	Philadelphia	1905	
abbated01	1877	4	15	USA	PA	Latrobe	1957	
abbeybe01	1869	11	11	USA	VT	Essex	1962	
abbeych01	1866	10	14	USA	NE	Falls City	1926	

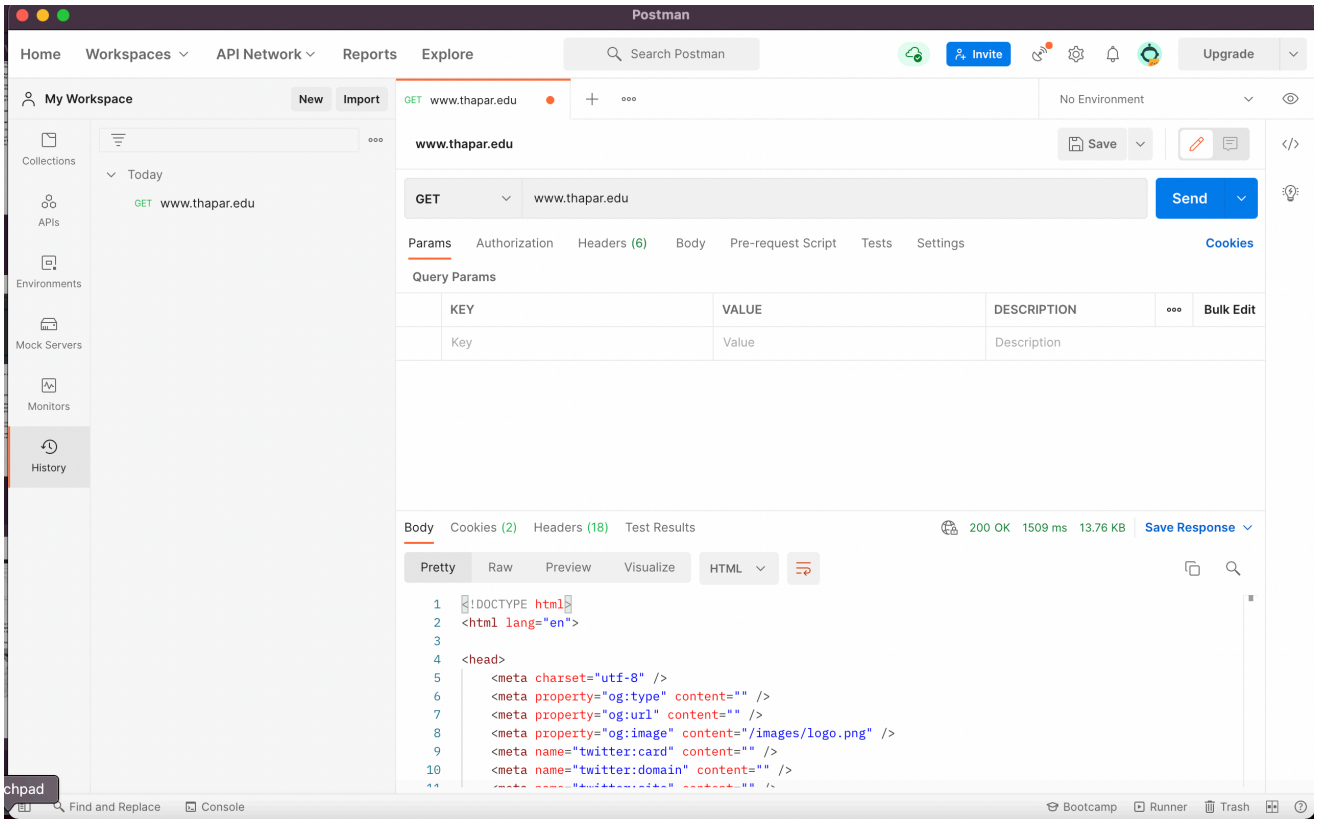
Postman

Required for Programming Track only. Follow the instructions to setup Postman. Insert your screenshot of the successful GET request on the website you chose using the cell below. You may have to change the path to the name and/or location of your image.

In [25]:

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

Out[25]:


Postman
Home
Workspaces
API Network
Reports
Explore
Search Postman
Invite
Upgrade
My Workspace
New
Import
Collections
APIs
Environments
Mock Servers
Monitors
History
Today
GET www.thapar.edu
No Environment
www.thapar.edu
Save
GET
www.thapar.edu
Send
Params
Authorization
Headers (6)
Body
Pre-request Script
Tests
Settings
Cookies
Query Params
KEY
VALUE
DESCRIPTION
Bulk Edit
Key
Value
Description
Body
Cookies (2)
Headers (18)
Test Results
200 OK
1509 ms
13.76 KB
Save Response
Pretty
Raw
Preview
Visualize
HTML
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<meta property="og:type" content="" />
<meta property="og:url" content="" />
<meta property="og:image" content="/images/logo.png" />
<meta name="twitter:card" content="" />
<meta name="twitter:domain" content="" />
Find and Replace
Console
Bootcamp
Runner
Trash