

A brief Note on SQLALCHEMY and the steps taken in the SQL_Alchemy_Challenge Repository follows:

In This first method, we read/reflect the database onto ORM, Create and Engine, Inspect the data base and Knowing the structure of the data base, establish a session, connect, and query the data base. Given the retrieved data, we can convert the data into Pandas_Python Data Frames for further analysis or Using Functions conduct the Analysis. The necessary elements in the library follows:

1. import sqlalchemy from sqlalchemy ext.**automap**
2. import automap_base from sqlalchemy.**orm**
3. import Session from sqlalchemy import **create_engine, inspect, func**

Use the Base class to reflect the database tables

```
Base.prepare(engine, reflect=True)
“Views” all of the classes mapped to the Base via Base.classes.keys()
Then establishes a session to the Base to Querry the Base Tables
```

In this method we explore the database SQLITE, first thru **Inspect**. Based on the latter inspection, we “Reflect” and Query the database directly, through first establishing a Session connection and then Querying on the basis of Session.
Obviously Query is under the domain of Session



In step 2: I directed the terminal to where the Flask program resided.
In this case directory sqlalchemy_challenge. And gave the following command:
>>> Python AlemiFlask.py
Which gave me back:

```

README.md ~ Jupyter Text Editor.html.html
README.md.mhtml
lemibio.html
lemiprcp.png
pp3.py
limate_alemi_flask.ipynb
awai.sqlite
awai_measurements.csv
awai_stations.csv
index_Brackett.html
base) dyn-129-236-218-27:SQLALCHEMY_Flask_Challenge piruzalemi$ python AlemiFl
sk.py
* Serving Flask app "AlemiFlask" (lazy loading)
* Environment: production
WARNING: This is a development server. Do not use it in a production deployment.
t.
Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 153-827-043

```

Activating my Python program under a self-server IP Address I then introduced Flask and its Routers, creating various APIs

```

['measurement', 'station']
* Debugger is active!
* Debugger PIN: 153-827-043
* Detected change in '/Users/piruzalemi/AF.py', reloading
* Restarting with stat
['measurement', 'station']
* Debugger is active!
* Debugger PIN: 153-827-043
* Detected change in '/Users/piruzalemi/AF.py', reloading
* Restarting with stat
['measurement', 'station']
* Debugger is active!
* Debugger PIN: 153-827-043
* Detected change in '/Users/piruzalemi/AF.py', reloading
* Restarting with stat
['measurement', 'station']
* Debugger is active!
* Debugger PIN: 153-827-043
* Detected change in '/Users/piruzalemi/AF.py', reloading
* Restarting with stat
['measurement', 'station']
* Debugger is active!
* Debugger PIN: 153-827-043
* Detected change in '/Users/piruzalemi/AF.py', reloading
* Restarting with stat
['measurement', 'station']
* Debugger is active!
* Debugger PIN: 153-827-043
* Detected change in '/Users/piruzalemi/AF.py', reloading
* Restarting with stat

```

The program was executed thru the command >>>Python AF.PY

While the debugger is active, we could test each modification to the program, interfacing between the program (Client) And the Server (APIs) that would establish connections, sessions and queries to the SQLITE data base.

A very rewarding process, that tests the ability of a programmer on both APIs, Python, Flask, Terminal commands, data visualization, debugging and more. Thank you. Piruz Alemi, Jan 16th, 2020.