1. Goals:

For this project, my original goal was to gather 100 Facebook photos and posts, their information, and put it into a SQL database. Once I gathered this information I planned on finding what days I posted the posts and photos and how many likes each photo/ post received. I also planned to find out which days I posted photos/posts the most frequently. I also planned on splitting the data up by time.

I also planned on gathering data from the Apple Music API and the Instagram API as well as using a word cloud.

1. Which goals I achieved:

For the Facebook API, I achieved all of my goals, except, I did not include posts and could not figure out how to do the time. I realized that my posts and the photos on Facebook were the same information because I only post photos on Facebook. I figured this was redundant to include. The time was too difficult for me to include.

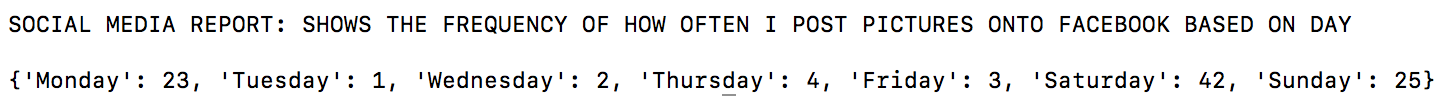
I did not end up gathering data from neither the Apple Music API , the Instagram API, nor using a word cloud because it was not necessary for my project. I did not need as many points as I thought I originally did.

1. What problems I faced:

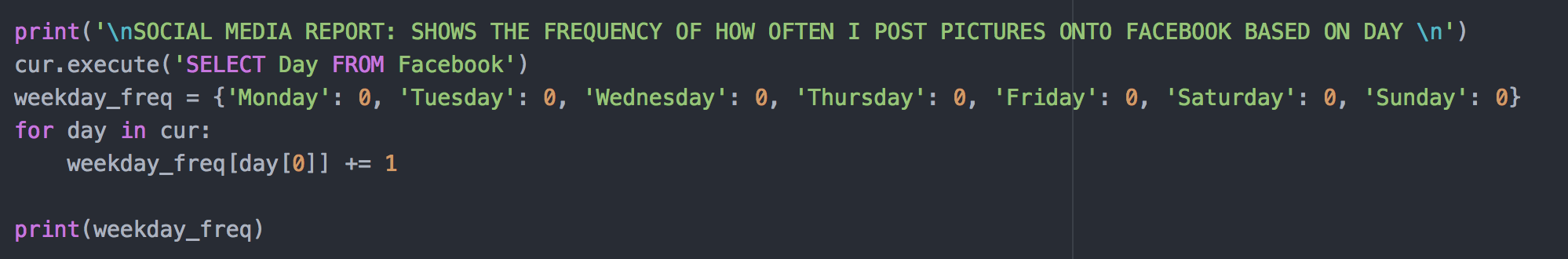
Faced problems with the api access token before caching my work. I had a difficult time splitting the timestamp that was provided in my data. I also faced problems gathering the data into an organized list of tuples that I would be able to easily access when inputting it into SQL, but I fixed it. Faced a caching problem, but fixed it when I made a new key.

1. Social Media Report:

This is the output from terminal for my code after making a frequency counter for posts and days:



This is the code for my frequency counter:



1. Instructions for running code:
   1. Install Facebook sdk by typing ‘pip install facebook-sdk’ into terminal
   2. Obtain an access token for the API and put the access token into a file called Facebook.py
      1. Get access token by going to <https://developers.facebook.com/tools/explorer/>
         1. First click the submit button then add nodes where it says ‘search for a field’
         2. Add photos as the first field
            1. As a subfield add the following in this order:

Limit (100)

created\_time

picture

likes

as a subfield of ‘likes’ add id

* + - 1. Then click get token and on the drop-down menu click ‘get user access token’
         1. Check the box ‘user\_photos’
         2. Click get access token again
    1. Copy the access token and put it in a string called ‘access\_token’ in the Facebook.py file
  1. Include the Facebook.py file in the same folder as the code
  2. Run the code type ‘python 206FinalProject.py’ into terminal

1. Documentation:
   1. The first portion of code sets up my cache the file is called ‘206FinalProject.json’
   2. The function get\_facebook\_data takes in an access token and makes a Facebook request. It provides an output printed pretty (pprint) that shows the user\_id, the name of the user, and 100 photos including their information. The information of the photos includes the created\_time timestamp, the picture id, the picture’s website, and the likes that the picture received (including the id’s of the users who liked the photo). This information is in the form of a big dictionary which includes a list of dictionaries.
   3. The code under the comment #SQL creates a connection and executes a SQL table called Facebook. The table has columns called ‘user\_id’, ‘created\_time’, ‘PictureWebsite’, ‘Likes’, ‘Day’
   4. The function pairing\_data takes in the data that was requested in get\_facebook\_data and returns a list of tuples for each photo. The tuple for each photo includes in this order: the user\_id, the number of likes on the photo, the picture’s website, the time it was created, and the weekday it was posted.
   5. The code under the comment #Adding Information into SQL Table loads the information for each photo into the table and their respective columns
   6. The code under the comment # Social Media Report counting how many times I posted photos on Facebook based on day is a frequency counter. It is a for loop that goes through the days in the SQL table and adds to the days of the week in the weekday\_freq dictionary every time the matching day comes up. It returns a dictionary where the keys are the days of the week and the values are the number of times I posted a photo onto Facebook on that weekday.
2. Documentation of Resources:

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| --- | --- | --- | --- |
| **Date** | **Issue Description** | **Location of Resource** | **Result**  **(did it solve the issue?** |
| 11/27/17 | Directions for API Setup | <http://facebook-sdk.readthedocs.io/en/latest/api.html> | Helped to provide how to request data |
| 11/27/17 | Pip Install Facebook-sdk tools | <http://facebook-sdk.readthedocs.io/en/latest/install.html> | Yes, this told me what to type into terminal to use a version of the Facebook SDK |
| 12/1/17 | What the data looked like | <https://developers.facebook.com/docs/graph-api/overview/> | Provided a basic overview of the Facebook API and what capabilities it contained. Also provided a basic overview. |
| 12/1/17 | Obtaining Access Token | <https://developers.facebook.com/tools/explorer/> | Yes, this website provided the access token for me |
| 12/3/17 | Access Token expired | <https://developers.facebook.com/docs/facebook-login/access-tokens/expiration-and-extension> | Yes, apparently you need a new access token for Facebook every once and a while. There is no way to really solve it, without getting new access tokens, however, my data is cached so I avoided the problem. |
| 12/4/17 | Gathering and Sifting through Data | <http://minimaxir.com/2015/07/facebook-scraper/> | This did not help in solving my issue, but helped me think about my problem in a different way. |
| 12/9/17 | Datetime Problems | <https://stackoverflow.com/questions/3682748/converting-unix-timestamp-string-to-readable-date-in-python> | Helped give me ideas for how to work with the Datetime function to find days |
| 12/9/17 | Datetime Problems | <https://stackoverflow.com/questions/27432540/how-to-convert-api-timestamp-into-python-datetime-object> | Helped give me ideas for how to work with the Datetime function to find days |
| 12/9/17 | Datetime Problems | <https://docs.python.org/2/library/datetime.html> | This helped me to better understand how the Datetime function works |
| 12/10/17 | Cache list of data | <https://stackoverflow.com/questions/13264511/typeerror-unhashable-type-dict> | No did not help directly, but learned I needed to change key. |