Assignment 03 – Using the Google APIs to access YouTube Data

For this assignment, you will access data from YouTube, which is owned by Google. You will use the credentials from the developer account you created in Assignment API3.

ASSIGNMENT:

- Write a program (or modify the given Python program) to retrieve some data from the YouTube API, and do some processing on that data, as outlined in the program specifications.
- ***Your program must follow the specifications and the programming guidelines provided below.***
- Write a one-page report describing your program. The report must include the following ***labeled*** sections: PURPOSE; INPUT; OUTPUT; WHAT THE PROGRAM DOES; ADDITIONAL INFORMATION. The report should be submitted in .pdf or Word format, in a document ***labeled with your last name***, eg: Dugas_HW3_Report.pdf.
- Zip your report, code, .csv file, and a **screen shot of any output** into a zip (compressed) file that is labeled (both inner and zip folders) with your last name, eg: Dugas_HW3.zip, and submit in Canvas. *Screen shots may be included in your report, but also must be included separately in the zip file*

PROGRAM SPECIFICATIONS:

NOTE: All programming for this assignment -- data search/retrieval and processing/analysis -- must be accomplished through a single program. Do not write two separate programs.

You may find these sites helpful:
https://github.com/googleapis/google-api-python-client/blob/master/docs/start.md

https://developers.google.com/youtube/v3/docs/videos

There are two types of output for this program.

- The .csv file should contain the raw data that was retrieved, one row for each record retrieved. The fields should be these data fields from those records: id, publishedAt, title, duration, viewCount, likeCount. The first row of the .csv file should be a header file that contains field names.
- The analysis results, in user-friendly report form, should be printed to the console.

The program must run in a terminal window. Prompt the user for a search term and a maximum number of results. Do not use an argument list.

Use the search term and max to do a YouTube search. Write the results to a .csv file that will remain in existence when the program is completed. The first row of the .csv file should be a header line that identifies each output field.

Print the search term, search max, and results of your analysis to the console.

Perform the analysis described below on the results of your search, and print the results to the console. Be sure to include a header to describe each set of results.

Analysis – be sure each analysis section has descriptive information as a header before printing the results:

1. List the title, id, date published, and duration for all videos retrieved, sorted by newest first.
2. List the rank (1 to 5), the title, id, date published, duration, and views for the top 5 videos with the highest views, sorted by highest first.
3. List the rank (1 to 5), the title, id, percentage of likes, views, likes, date published, and duration for the top 5 videos with the highest like percentage (like count / view count), sorted by highest percentage first.

PROGRAM GUIDELINES:

You may incorporate materials provided by the instructor, although you must add your own original content as well. Your grade will be based on your original content, so be sure and add significantly to what is provided.

Programs will be screened for plagiarism. If you "borrow" code, be sure to document the details of the source; otherwise it will be considered plagiarism and result in a zero grade for the assignment. Borrowed code will not count toward your grade, only original code will be considered.

Programming can be done in a variety of languages. Programs should employ good programming practices. An example is the use of descriptive variable and function names.

Annotation and Comments: ***IMPORTANT***

- Program header must include **your** name and assignment information (use comments).
- Comments must also be used at the beginning of the program to give an overall description of the purpose of the program.
- Comments must also include detailed running instructions to run in a terminal window.
- Comments should also be used throughout the code to explain what it is doing. It should be possible to re-create your program based on the comments alone. Poorly commented programs will receive poor grades.

Note for students traveling outside of the US:

Social media sites are sometimes blocked outside of the US. To get around this, you can use a VPN, either a commercial one or Stevens's VPN. For Stevens: IT Service Desk / Search Knowledge Base / Network / VPN