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## Date: 8/11/2019

## Project: Final

Bungie API

This was the most fun (and difficult) project I have completed in this master's course.

I am a huge fan of a video game series called Destiny on PC created by Bungie which is hosted on Blizzard's servers. As it turns out, they give out API access for personal use. People have made some fantastic 3rd party software that increases the game's quality of life.

In the game, you can join a 'clan' which will give you extra points for teaming up to complete challenges with friends. For this project, I want to review some basic stats about members in my clan.

This project consisted of over 20 hours of work, and several late nights. 90% of my time was spent learning how APIs work, what an 'endpoint' is, and how to pull specific pieces of information. One of the biggest challenges for me, was how to access any of my data in the first place. In order to access information about my character, I discovered through many frustrating hours that I needed to know certain IDs that belong to my character. The first was a character ID which was something you can only get via API in the first place. To get that, I needed to know my membershipID, but to get that I needed my Blizzard ID, and that required my display name, which required an account code. Needless to say, there were many steps to acquiring what I needed, but I couldn't find any information on how to access them anywhere, and essentially had to back-track one piece at a time to find the information.

This was tremendously helpful because in the real world we may be missing vital information and have to find it ourselves. Eventually, I stumbed upon my clan ID via a few API POST requests, which gave me some of the information I needed.

As I started pulling my clans info, I began running into an issue with people who have different accounts. Destiny was released on PC, PS4, and Xbox. This caused the datapoints to shift based on the platform. Since I wanted to focus only on PC, I added a TRY/EXCEPT to skip people who did not match queries for PC.

Another challenge was an error I received with my clan members' Blizzard IDs. The company Blizzard adds a '#' to each ID. I learned that you cannot parse the '#' as a standard character. This character needed to be encoded in order to properly match with the users in Blizzard's database. I replaced the '#' with '%23' and that did the trick.

Bungie does not have pre-configured datasets. Everything I pulled, had to be cleaned manually and put together myself. For example, a majority of my time working on the project was spent trying to pull the right info, convert types to work together, and zip data that belonged together. To get a single item from the data I was looking for, I had to go 6-7 layers deep in the JSON to find the right key-value pairs. But the pairs weren’t side-by-side either. They were several layers apart, so I had to gather them separately, then combine them in a key-value pair setup for ease of use.

I faced another challenge towards the end when I was trying to match the clan members' names to their stats. The stats somehow ended up with two excess rows. I had to scan through them bit by bit to learn what happened, and discovered that two users had multiple accounts. I removed one entry from each of those players so that they were not unfairly represented.

As a last step, I re-indexed my dataframe with the usernames of each clan member then exported it to Excel so that they would easily find their stats. I have shared the results with them to some surprise and a lot of laughter. Let's just say those who have bragged about being 'skilled' are not so skilled after all!

Overall, this was a very difficult task, with many bumps in the road, but I learned so much and don’t want to stop. As a data scientist, I will be expected to find information on my own in the event that it is not provided or pieces are missing. More often than not, I could see myself wanting to add a variable or two to the data, and having to seek it out myself. I plan to continue data-mining Bungie's API as a hobby. Now that I know what I’m doing, I quite enjoy it.