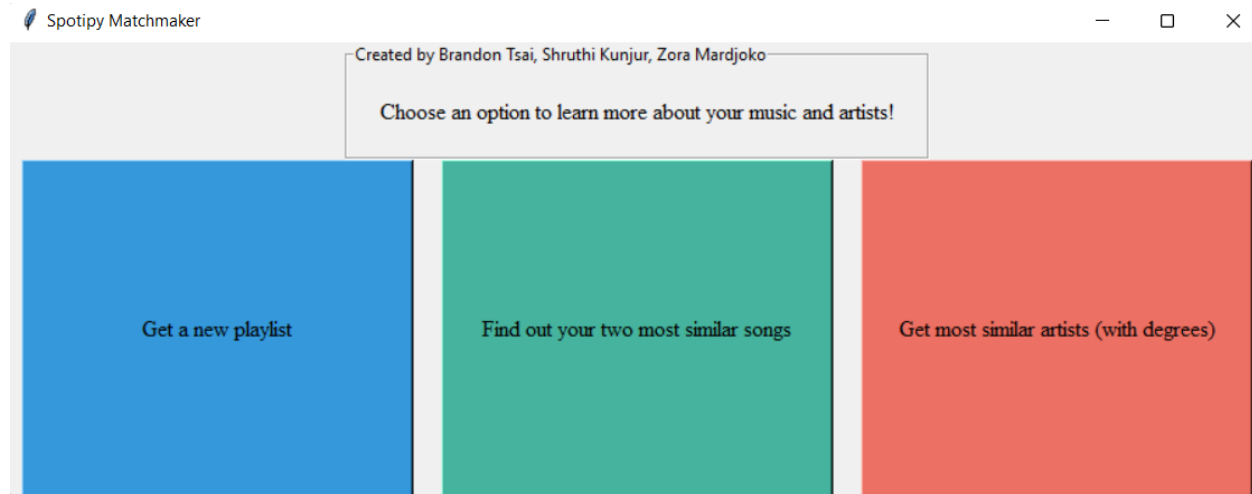# User Manual

Upon running the project, the user should run the GUI file. This file will be the interface that the user will use to access the different options offered by our project. In order to use the first two buttons, a login to Spotify will be required. Additionally, you will be asked to authenticate (allowing our program access to your data). The third button can be used without a login. There are three different buttons for the three options. Here is a picture of the GUI:

And here are some sample results and instructions for each of the three options:

Artist Collaborator Network ("Get most similar artists"):
https://youtu.be/kLe7rVvx87U
This functionality allows the user to input an artist and find a network of collaborators. Starting with the input artist, the program will find that artist's top 10 songs and find any collaborators from those songs. Then, for each collaborator, the program will find their top ten songs, those songs' collaborators, and so on. The program will continue until the network is 3 steps away from the original artist. The program will then return a list of artists that are 1 step away from the original artist, 2 steps away, and 3 steps away. If the original artist does not have any collaborators in their top songs, the program will prompt for another artist. The above video shows an example of Lizzy Mcalpine as the beginning artist. The program finds Lizzy's collaborators, and continues outward until returning a list of collaborators 3 steps away from Lizzy Mcalpine. The program takes a bit to run as the network gets larger and larger as it continues outward from the source. The print statements happening throughout the program are the urls of each artist's top songs and the collaborators of those songs if there are any. To use this, simply click on the corresponding button in the GUI and use the terminal to input an artist name. Then, the output will have a list of the first, second, and third-degree artists for the source artist.

If the top songs from the source artist has no collaborators, the output will indicate that there are no collaborators.

Create a Playlist of Recommendations ("Get a new playlist"):
https://youtu.be/o4vD9oz6YFM
This function will look at the user's recent top artists, and generate a related artist for each top artist. This generation of related artists uses data from the Spotify listening community. Next, it will add an empty playlist to the user's library. The program will find each related artist's top five songs and add them to the playlist. To use this, simply click on the corresponding button in the GUI. There will be no visible output in the terminal, but a new playlist will be created and available to view in your Spotify account.

Find 2 Most Similar Songs ("Find out your two most similar songs"):
This function goes through the user's top x songs (x is a number input by the user and must be between 2 and 50) and uses cosine similarity to compare the songs based on danceability, energy, and acousticness. To use this, simply click on the corresponding button in the GUI, and head over to the terminal to enter in how many of your top songs you want to use. Then, you will see an output in the terminal that gives you the two most similar songs, and their corresponding danceability, energy, and acousticness values.

Here are two examples of cosine similarities on two different sets of top songs.

```
/Users/shruthikunjur/Downloads/Spotify/venv/bin/python /Users/shruthikunjur/Downloads/Spotify/SpotipyTest.py
0 Pasoori // Shae Gill
1 Young And Beautiful // Lana Del Rey
2 Poor Marionette // Sarah Cothran
3 16 // Baby Keem
4 Lights Up // Harry Styles
5 Bang Bang // Jessie J
6 Summer Rain // Majid Jordan
7 Just For Me (with SZA) - Space Jam: A New Legacy // SAINt JHN
8 How Long - From"Euphoria" An HBO Original Series // Tove Lo
9 Burn It All Down // League of Legends
10 Hands On Me // Ariana Grande
11 Born To Die // Lana Del Rey
12 Bhool Bhulaiyaa 2 Title Track (From "Bhool Bhulaiyaa 2") // Pritam
13 Reflections // The Neighbourhood
14 Unstoppable // Sia
15 Chammak Challo // Akon
16 Lie To Me // Vera Blue
17 The Spins // Mac Miller
18 Softcore // The Neighbourhood
19 Gimme More // Britney Spears

Summer Rain and How Long - From"Euphoria" An HBO Original Series are the most similar songs based on danceability, energy, and acousticness
The danceability of Summer Rain and How Long - From"Euphoria" An HBO Original Series are: 0.705 and 0.668, respectively
The energy of Summer Rain and How Long - From"Euphoria" An HBO Original Series are: 0.727 and 0.687, respectively
The acousticness of Summer Rain and How Long - From"Euphoria" An HBO Original Series are: 0.0341 and 0.0157, respectively
```

```
C:\Users\Zora\Documents\spotipyproj\venv\Scripts\python.exe C:\Users\Zora\Documents\spotipyproj\venv\songsimilarity.py
0 Smooth Operator - Single Version // Sade
1 Delilah (pull me out of this) // Fred again..
2 POCKET ROCKET // Cochise
3 Latch // Disclosure
4 Goodbye // Air Supply
5 Marea (we've lost dancing) // Fred again..
6 Free Bird // Lynyrd Skynyrd
7 Kill Bill // SZA
8 Here I Am (Just When I Thought I Was Over You) // Air Supply
9 Boy's a liar Pt. 2 // PinkPantheress
10 Built 4 Love // TWRP
11 Cherry Wine // grentperez
12 U Are My High (with Future) // DJ Snake
13 Circle In The Sand // Belinda Carlisle
14 Danielle (smile on my face) // Fred again..
15 Absence of You // grentperez
16 ECSTASY // EARGASM GOD
17 Hot (feat. Gunna) // Young Thug
18 P power (feat. Drake) // Gunna
19 In Your Atmosphere - Live at the Nokia Theatre, Los Angeles, CA - December 2007 // John Mayer


Danielle (smile on my face) and ECSTASY are the most similar songs based on danceability, energy, and acousticness
The danceability of Danielle (smile on my face) and ECSTASY are: 0.646 and 0.753, respectively
The energy of Danielle (smile on my face) and ECSTASY are: 0.865 and 0.96, respectively
The acousticness of Danielle (smile on my face) and ECSTASY are: 0.000407 and 0.00357, respectively


Process finished with exit code 0
```