- Team Gators

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- Musical Search Engine

  - Problem: Have you wanted to find that one song you heard or just remembered from 10 years ago? Well our program fixes that! The musical search engine we created helps listeners find that song that they have been trying to listen to.

  - Motivation: Our program solves the issue of finding a song. The program finds songs based on specific song qualities such as artist name, genre, lyrics, or song popularity.

  - Features: From a user perspective we have solved the problem of finding any type of song based on certain criteria. For example, if I input Zach Bryan and searched for artist name, our program would return any artist with the name Zach Bryan. If the user input "Is this real life?" and searched for lyrics, any song with those lyrics would be returned.

  - Data: The Genius database of artists and their songs. Genius itself claims to have the largest collection of song lyrics and musical knowledge in the world. We will use this to gather all the data on different artists, songs, and genres. This is the data that we will use to recommend songs to users.

  - Tools: Genius API, Lyric Genius (python client), python, java, javascript, HTML, CSS, and node.js

  - Visuals: We want to use either a GUI for the front end or use a front end framework like javascript or node.js. Both options are valid but we will decide based on which will be better for the end user.

- Strategy: Within the Genius API and Lyric Genius python client, there are multiple algorithms embedded which we will be using, but we will create our own to adjust and manipulate desired data. We will use a variety of algorithms, the majority being graph algorithms to connect genres to genres as well as to connect artists based on key characteristics. Internally we will also use a variety of sorting algorithms to ensure our program has a fast response time for the user.
  - Roles & Responsibility: Ian - data importation and access (backend), Carter - backend logic, Sam - front end
- References:
  - https://melaniewalsh.github.io/Intro-Cultural-Analytics/04-Data-Collection/08-Collect-Genius-Lyrics.html
  - https://github.com/johnwmillr/LyricsGenius
  - https://lyricsgenius.readthedocs.io/en/master/
  - https://genius.com/api-clients