**Data Visualization Project Proposal**

Dakota Mellish, Rodrigo Castanon, Alejandro De Santos, Ignacio Dominguez

**Topic Suggested:** Visualization of Spotify Data for Prominent TikTok/Instagram Songs for Music Producers

**Motivation:** Tiktok/Instagram or “viral” songs are a unique genre of music in that they encompass a diverse range of styles and songs can sometimes be several decades old. There is a lot of interesting data that Spotify provides to API users free of charge that could help a music producer audience understand this genre better.

**Target Audience:** The primary user group would be music producers who want to understand this genre and learn from about the most popular songs on TikTok/Instagram. Platforms such as TikTok and Instagram are highly sought after to promote music nowadays. Music producers may have clients who produce reels/TikToks and want a “catchy” track, or music producers may also have their own artist project and want to create something that reflects the type of music seen on TikTok/Instagram, or perhaps find a “niche” area of sound that isn’t currently being utilized.

**Dataset:**

50 songs (can change) with various attributes pulled from Spotify’s own curated “[Viral Hits](https://open.spotify.com/playlist/37i9dQZF1DX2L0iB23Enbq)” Playlist (well-known for its connection to TikTok and Instagram music and updated weekly) using the [Spotify API](https://developer.spotify.com/documentation/web-api).

Datapoints include:

**Song/Artist Metadata**

|  |  |  |
| --- | --- | --- |
| Release Date | Tempo (BPM) | Explicit |
| Song Key | Popularity (Indexed 0-100) | Duration |
| Artist Genre | Artist Monthly Listeners |  |

**Song Features (Most are metrics scaled from [0,1])**

|  |  |  |  |
| --- | --- | --- | --- |
| Danceability | Mode | Valence | Mode |
| Energy | Speechiness | Tempo | Liveness |
| Loudness | Acousticness |  |  |

Furthermore, Spotify’s data API provides several unique endpoints called “Sections” and “Segments”, respectively.

**Sections** attempts to categorize distinct “moments” within a song (such as chorus, bridge, verse etc.) It would be useful to visualize this data and help users see the number of key sections that “Viral” songs employ.

**Segments** goes a step further and breaks down the individual moments within those sections such as identifying the presence of a new instrument or percussion. Though plausible, it is unlikely that this dataset will be used as the number of segments for each song is quite large and often times segments will overlap with one another, making it difficult to infer meaning of each individual segment.

**Abstracting the Tasks:**

Following Munzner’s approach to user tasks, the logical starting point is to declare that the users of the data visualizations for this project will likely be for discovery purposes given the subject matter. This may or may not generate additional hypotheses/questions that the users formulates after seeing the data. A variety of user tasks are expected. For basic visualizations, it is expected that users will generally understand what to look for (in the form of certain genres and artists that are recognized) but may not know where to look at (Locate Task). An example of this could be **visualizing the monthly listeners of top artists in the TikTok space**. However, certain metrics such **as danceability when displayed for given songs** would then place users in the opposite position; *they would know where to look but may not know what they are looking* atbecause the song feature metrics are likely unfamiliar). The Sections data would likely place users in an explore task because they are unlikely to have prior knowledge about what “sections” represent and not know where to look. **An example visual could be a display of a given song based on key section timestamps** All in all, there are a number of key tasks that users would likely find themselves in when engaging with the desired data visualization tool.

**Proposed Example Tasks:**

**Task 1: Identify song attributes for a given song or compare different songs/genres/artists**

**Task 2: View monthly listenership for TikTok Playlist artists to benchmark/create goals for their own music career**

**Task 3: Analyze the average number of song ‘sections’ present in a song**

**Task 4: Identify patterns in song features across different genres**

**Task 5: Analyze the tempo and energy of viral songs over time**

**Task 6: Discover the correlation between song popularity and specific song features**

**Task 7: Analyze the distribution of song tempo between songs and genres.**

**Teacher Approved Tasks:**

**Task 1: Parallel coordinates graph -metrics analysis**

**Task 2: Heat map - sections of songs (Alex)**

**Task 3: Histograms - distribution of BPM/otros métricos**

**Task 4: Análisis de popularidad -stream graph (Rodrigo)**

**Task 5: Violin chart/bubble chart - Energía y bpm (nacho)**