**Project Title: Using Data Analysis to determine the most popular songs of 2019**

**Team Members:**

Ashley Cleveland

Addison Brown

Jessica Jordan

**Project Description/Outline:**

This project is to explore one of the most popular music streaming platforms, Spotify. We will be analyzing data around music popularity, artist popularity, and top user demographics.

**Research Questions to Answer:**

1. What is the most popular genre of music based on the data set?

#what is the most popular genre

1. Pop: 9,052
2. Rap: 5,915
3. Rock: 5,887
4. Hip-Hop: 4,891
5. Dance: 4,418

2. What top 3 factors determine popularity?

Using a dataset of 228,000 Spotify Tracks, we were able to predict popularity

(greater than 57% popularity) using audio-based metrics such as key, mode, and danceability

3. What was the most popular songs of summer ‘2019’? - Senorita by Shawn Mendes

4. Who are the most popular artist of 2019:

a. Female - Lizzo 95

b. Male - Shawn Mendes 100

c. Group - Maroon 5 96

5. Where are the 5 highest concentrations of listeners worldwide?

Santiago, CL - 2.2 Million - 33.4489° S, 70.6693° W

Mexico City - 1.7 Million - 19.4326° N, 99.1332° W

Jakarta, Indonesia - 1.1 Million monthly listeners - 6.2088° S, 106.8456° E

Chicago, IL - 1.2 Million monthly - 41.8781° N, 87.6298° W

São Paulo, Brazil - 1.036 Million - 23.5505° S, 46.6333° W

6. What predictions can we make based on music popularity from calling the API and the given Data Set?

1. The closer the danceability index is to 1 the more likely it will be a “popular” song.
2. Artists who develop their own genre-less style or create music that is a combination of the most popular (dance, hip hop, pop) will find success with this new generation of digital consumers

**Sources of Data**

Kaggle:[Spotify Tracks DB](https://www.kaggle.com/zaheenhamidani/ultimate-spotify-tracks-db)

Spotify Api

Spotipy Library for the Spotify Web API

**Presentation Overview**

* Title Slide (Ashley)
  + Include the name of the Project and Group Members
* Motivation & Summary Slide (Ashley)
  + Define the core message or hypothesis of your project.
  + Describe the questions you asked, and *why* you asked them
  + Describe whether you were able to answer these questions to your satisfaction, and briefly summarize your findings
* Questions & Data (Ashley)
  + Elaborate on the questions you asked, describing what kinds of data you needed to answer them, and where you found it
* Data Cleanup & Exploration (Jessica)
  + Describe the exploration and cleanup process
    - Since the data was in a machine-readable format I had to do some data cleaning and data wrangling in Python. Afterwards, I have set up an so-called cron job using a Linux terminal so that the data gets downloaded on a weekly basis automatically.
  + Discuss insights you had while exploring the data that you didn't anticipate
    - API call challenges and changes during running code
  + Discuss any problems that arose after exploring the data, and how you resolved them
    - API call challenges and changes during running code, compared popularity with number of streams even when the API call returned a more popular artist in real time.
  + Present and discuss interesting figures developed during exploration, ideally with the help of Jupyter Notebook
* Data Analysis (Addison)
  + Discuss the steps you took to analyze the data and answer each question you asked in your proposal
  + Present and discuss interesting figures developed during analysis, ideally with the help of Jupyter Notebook
* Discussion
  + Discuss your findings. Did you find what you expected to find? If not, why not? What inferences or general conclusions can you draw from your analysis?
* Post Mortem
  + Difficulties that arose, and how you dealt with them
    - API call took days
    - Genre columns
    - G key and uploading-- kicked out
  + Additional questions that came up, but which you didn't have time to answer: What would you research next, if you had two more weeks?
    - Determine the other factors that determine popularity and
    - Forecast how artists can be successful with incorporating these factors within their songwriting and production

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