Song Shuffler

# Abstract

This report is on a song shuffler program designed to randomly select songs and genres from a dataset I created. The dataset, or “SongShuffle.csv”, is a file that contains the information needed for the songs, including their title and genre. The program allows the user to specify the number of songs to be played, and it tracks the genres of those songs. The program also calculates the and displays the experimental probability of each genre being selected.

# Introduction

The purpose of this program is to create a song shuffle experience by randomly selecting songs and genres from a given dataset. The dataset is loaded into a Pandas DataFrame, and the program runs and is conducted by generating random indices to select songs and their corresponding genres. The genres are then categorized, and the experimental probabilities of each genre being selected are calculated and displayed at the end.

# Methodology

## Data Loading

The initial step involves loading the dataset, "Songshuffle.csv," using the Pandas library. The dataset contains information about songs, specifically their titles and genres.

## Song Shuffle Simulation

1. The user is prompted to input the number of songs they would like to play.
2. A loop iterates through the specified number of songs, generating random indices to select songs and genres from the dataset.
3. The selected song and genre are stored in separate lists, and the genre is categorized for further analysis.
4. The program calculates and displays the number and experimental probability of each genre being selected.

# Results

The program results provide insights into the distribution of selected genres. The number and experimental probability of each genre (Rock, Pop, Hip Hop/R&B, Jazz, Alternative, Electronic) are displayed, offering a quantitative analysis of the song shuffle experience and what you might get on Spotify or another platform.

# Discussion

The program results indicate the diversity of genres in the song shuffle, allowing users to observe the distribution of genres based on the provided dataset. The experimental probabilities offer insights into the likelihood of each genre being selected, providing a statistical perspective on the randomness of the song shuffle and how you might be impacted by it during your own listening experiences.

# Conclusion

In conclusion, the song shuffle program successfully provides a random selection of songs and genres from the given dataset. The analysis of the selected genres and their experimental probabilities adds an informative layer to the program, offering users a statistical understanding of the genre distribution in their song shuffle experience on their preferred music platform.