Proposal for Research of Music Datasets and Objectives

Introduction

We will be focusing on the study of music datasets. This emerging field holds immense potential for uncovering valuable insights into music theory, composition, and listener preferences. Our comprehensive research strategy aims to analyze various music datasets and achieve specific objectives that will drive innovation and growth.

# Research Objectives

Our primary objectives for this research are:

## 1. Genre Popularity Over Time

We aim to identify patterns and trends in music over time by analyzing datasets that include information on genres, artists, and songs. This will help us understand how music styles and preferences have evolved.

## 2. Artist Popularity Over Time

We aim to identify patterns and trends in an artist’s career by analyzing their popularity against all of Spotify by year and decade. Additionally, we will be comparing the popularity of one artist against artists in the same and differing genres.

## 3. Correlation Between Song Characteristics and region

The correlation between song characteristics and region is a fascinating area of study that delves into how cultural, social, and geographical factors influence musical preferences. By examining extensive music datasets, we can identify patterns and trends that reveal how different regions favor specific attributes in songs. For instance, certain regions might have a preference for upbeat tempos and energetic instrumentation, while others might lean towards lyrical depth and melodic complexity. Understanding these regional preferences can provide valuable insights for artists, producers, and marketers, enabling them to tailor their creations to resonate with specific audiences. This research not only contributes to the academic understanding of music but also has practical implications for the music industry, driving innovation and enhancing the connection between artists and their listeners

## 4. Do Popular Artists Make Popular Songs, or Do Popular Songs Make Artists Popular?

This question delves into the relationship between an artist's popularity and their songs' success. By examining historical data and trends, we aim to determine whether it is the artist's fame that boosts a song's popularity or if a hit song can elevate an artist to stardom. This analysis will provide insights into the dynamics of celebrity within the music industry and help identify key factors that contribute to an artist's long-term success.

# Program language

In our research, we leverage the power of **Python** for its versatility and extensive libraries, which allow us to efficiently process and analyze large music datasets. **Postgres** serves as our robust and reliable database management system, enabling us to store and query vast amounts of data with ease. We utilize **Sqlalchemy** as our ORM (Object-Relational Mapping) tool, which simplifies database interactions by allowing us to work with Python objects instead of writing raw SQL queries. Finally, **Json** is employed for data interchange, providing a lightweight and flexible format for storing and exchanging data between our systems. Together, these technologies form a powerful stack that supports our comprehensive analysis of music datasets, driving innovation and uncovering valuable insights into the music industry