

# Spotify *Data* *Analysis*

# Introduction

This presentation explores key Spotify track features and popularity using data analytics. It covers objectives, data sources, and detailed analysis of musical and popularity trends.

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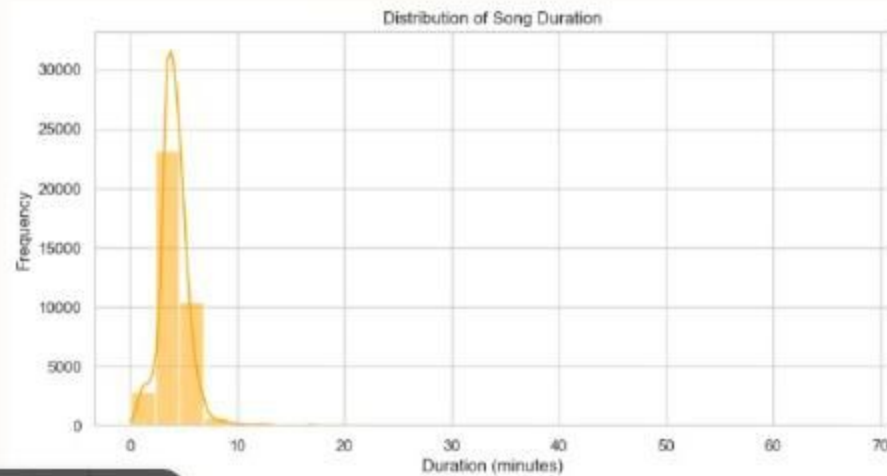
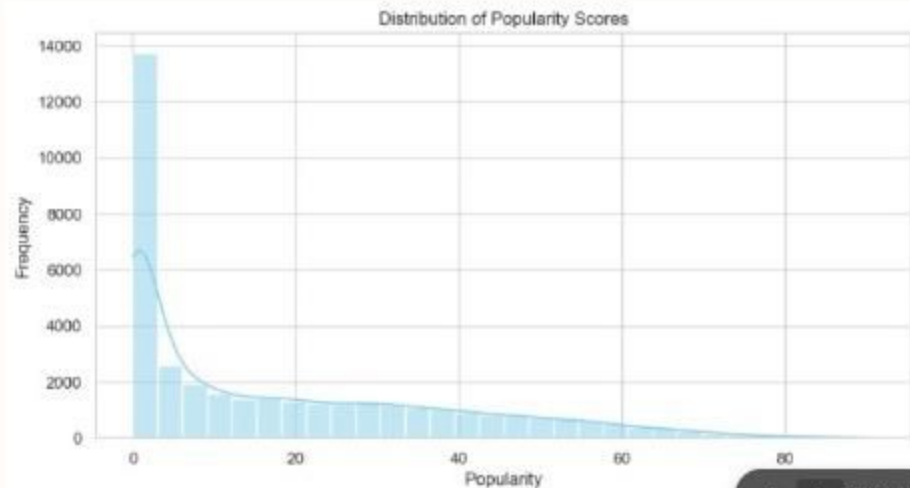
# Project Overview

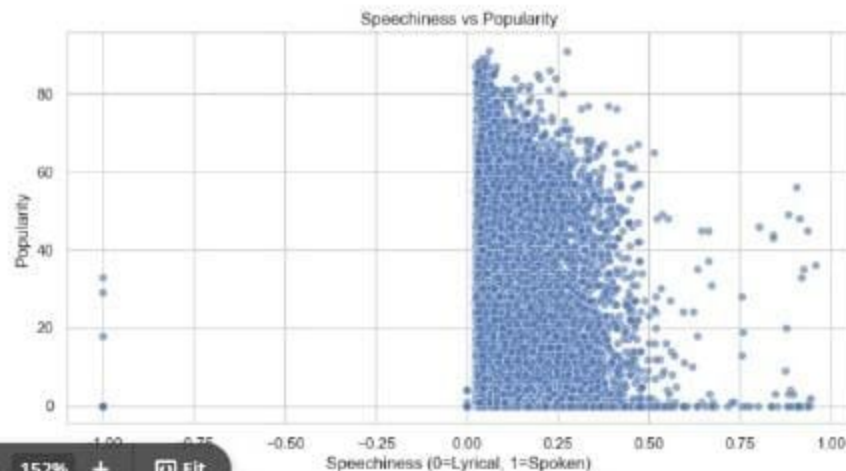
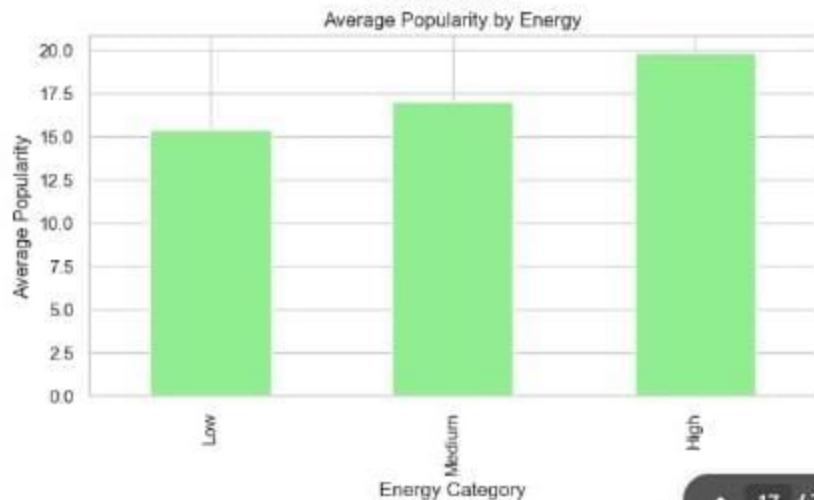
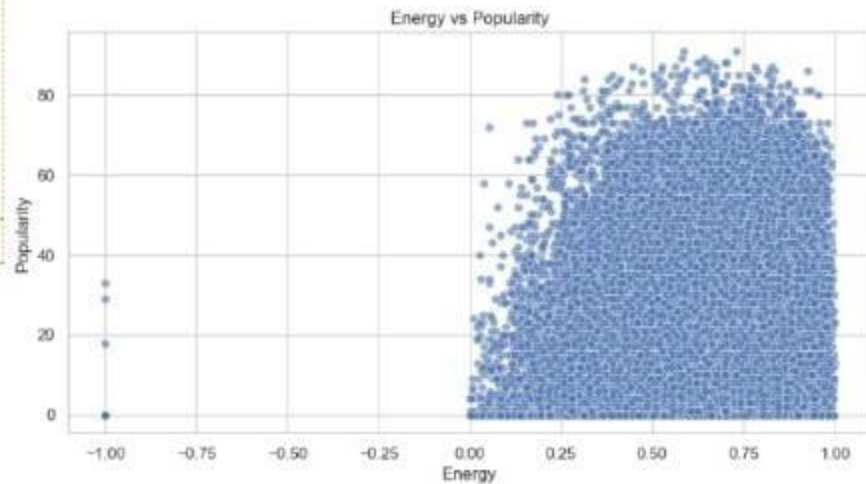
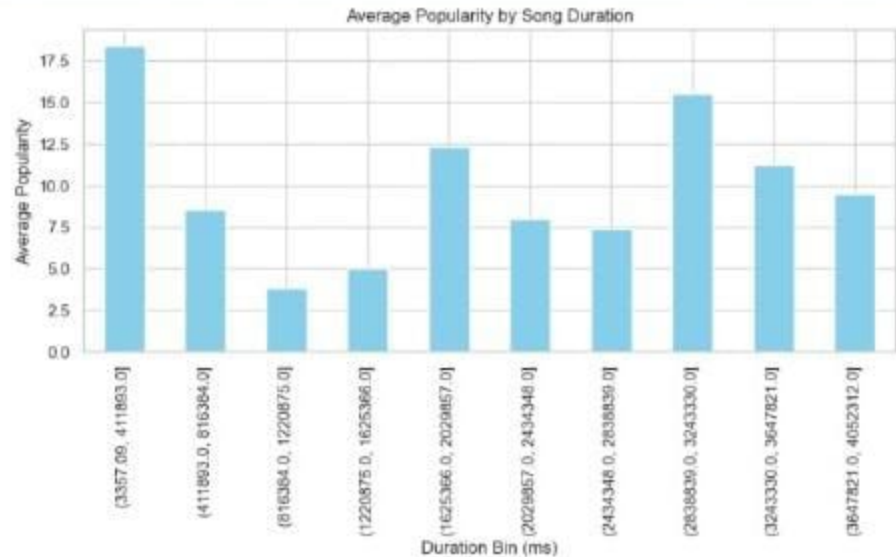
The project uses **Python** libraries such as *pandas*, *Seaborn*, and *Matplotlib* for data analysis and visualization. Methods include exploratory data analysis, statistical grouping, and plotting binned averages to reveal relationships between track features and popularity.

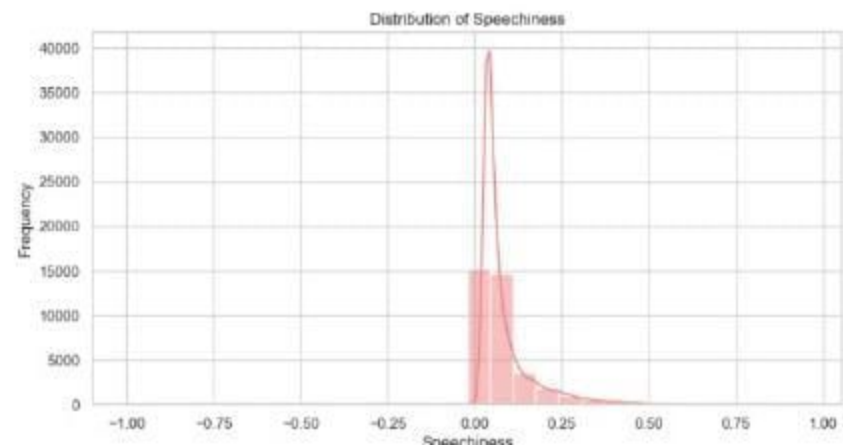
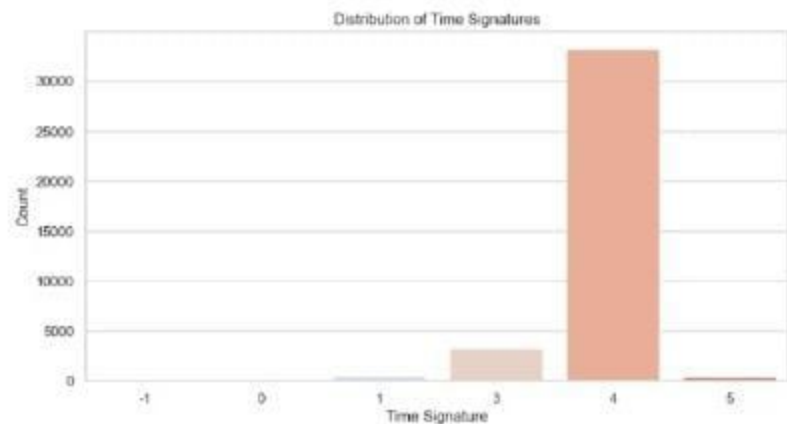
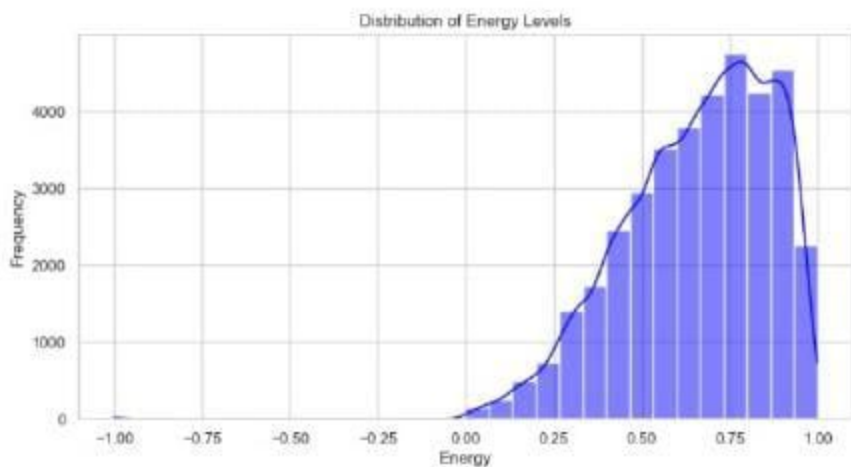
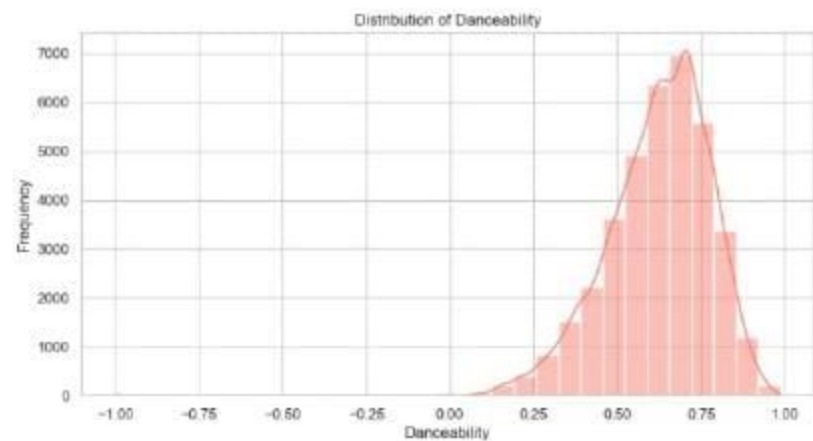
## Methodology and Tools *Used*

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# Data Analysis and Visualization

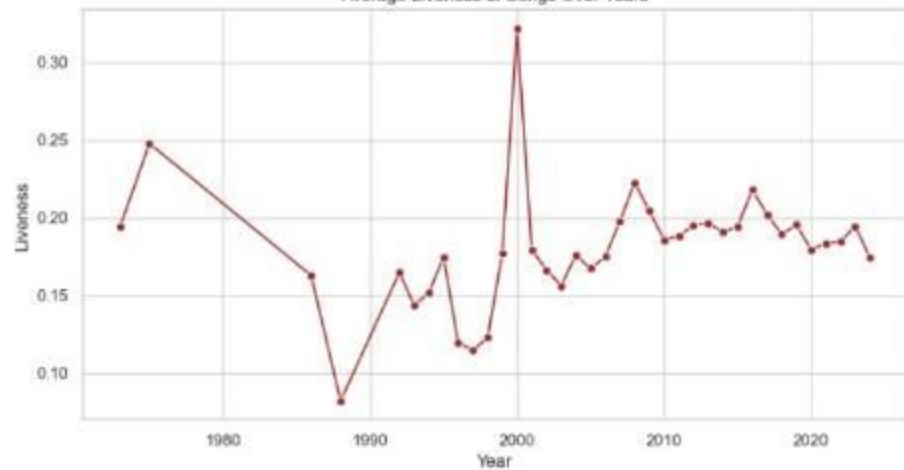




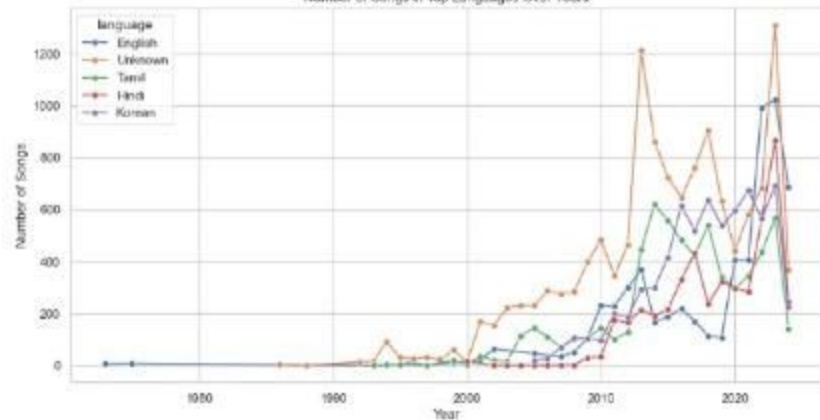




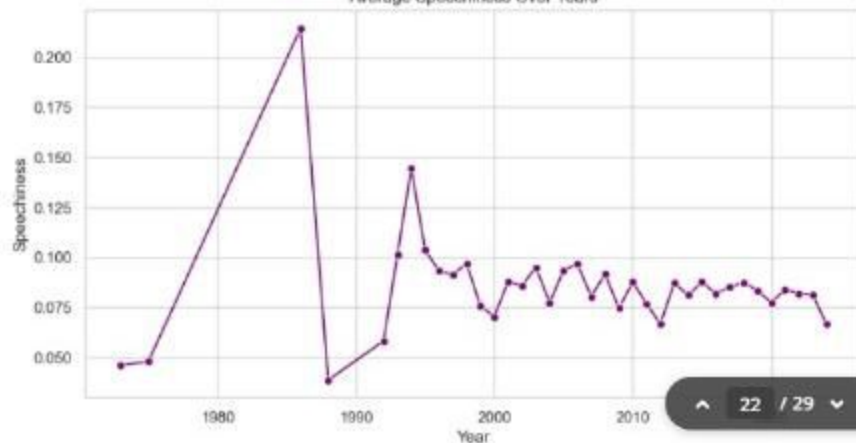
Average Liveness of Songs Over Years



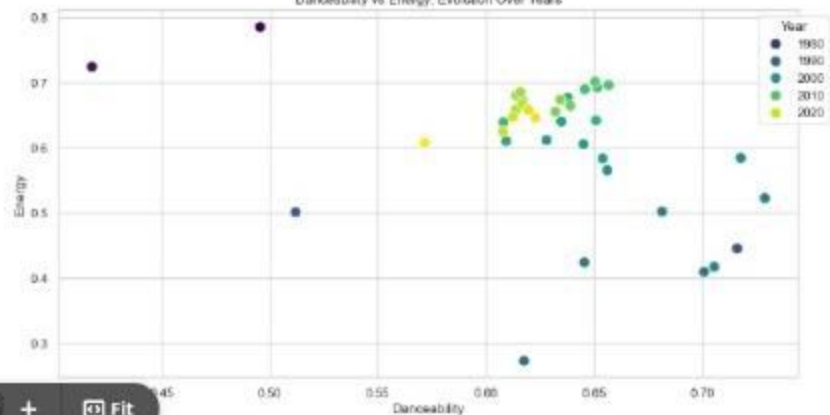
Number of Songs in Top Languages Over Years



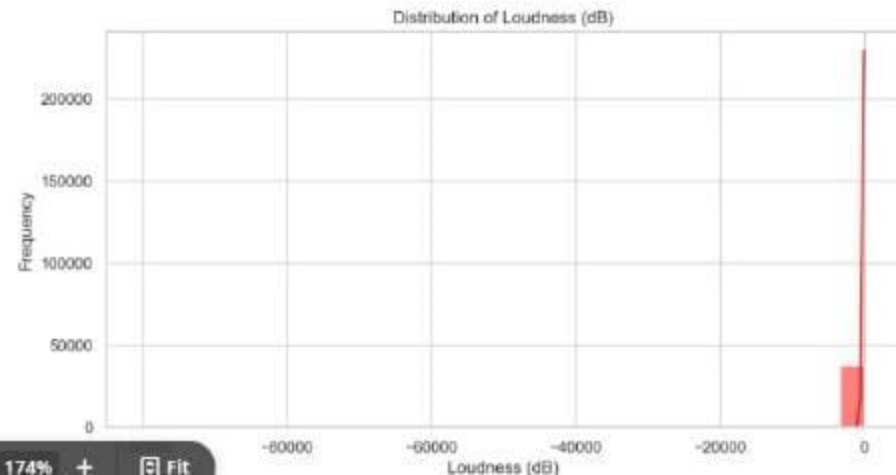
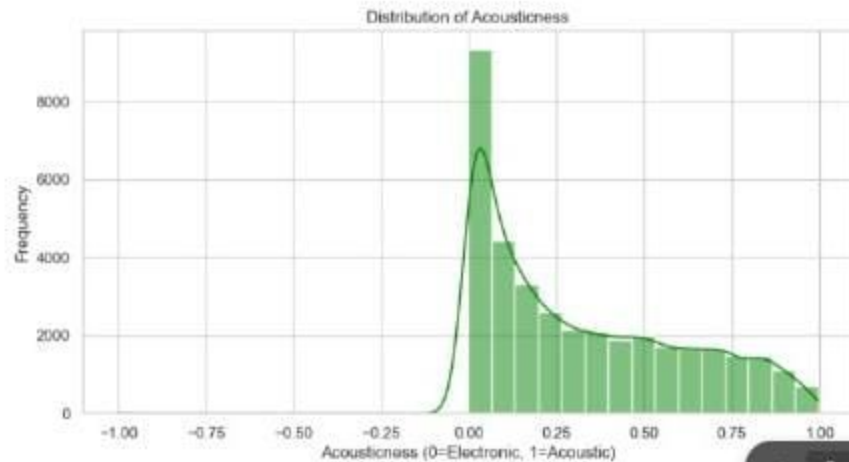
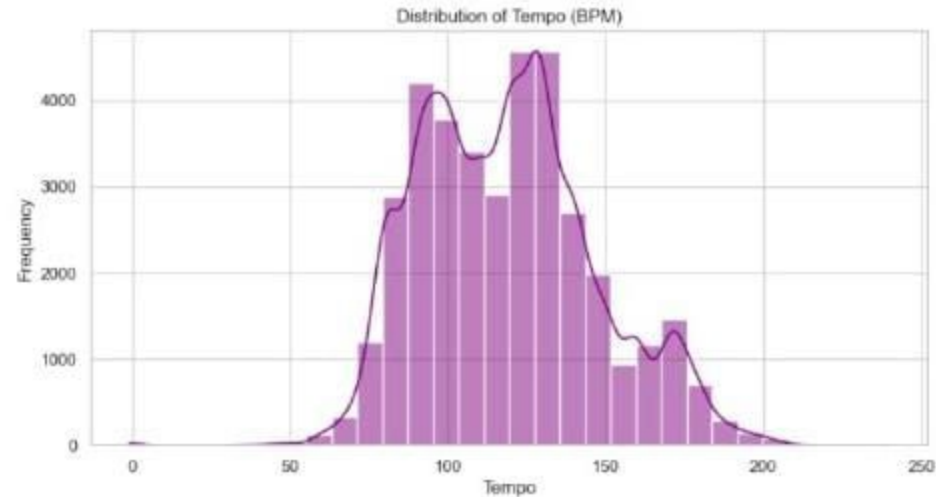
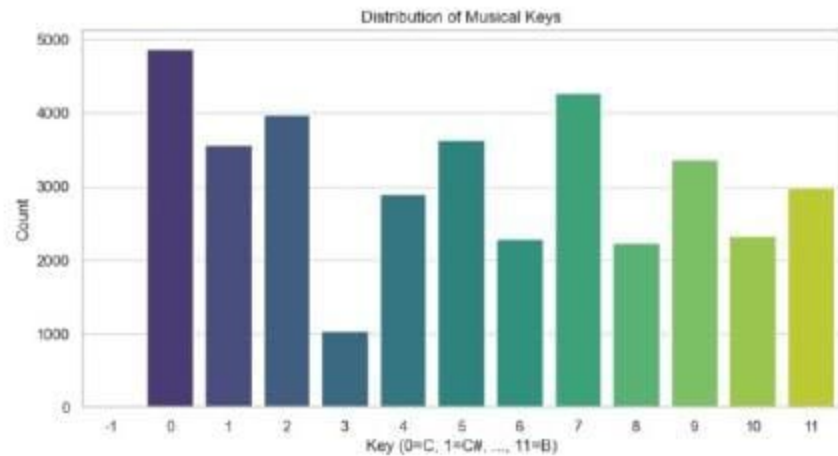
Average Speechiness Over Years

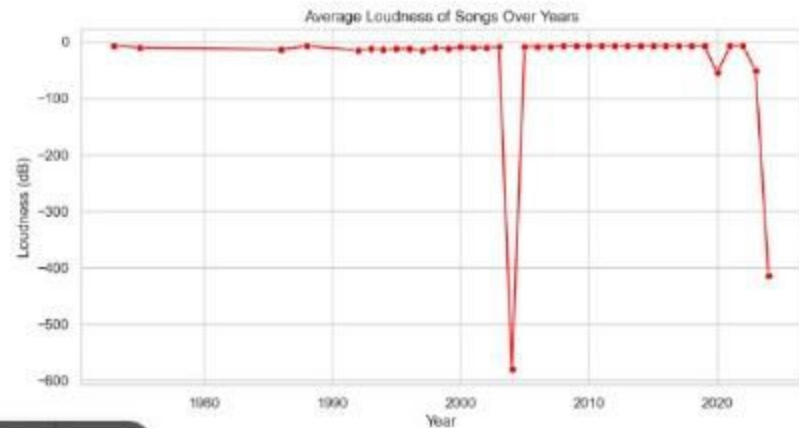
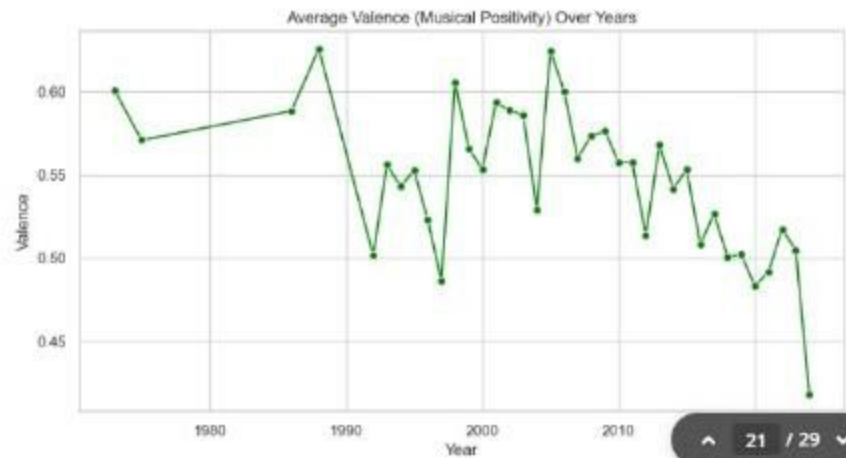
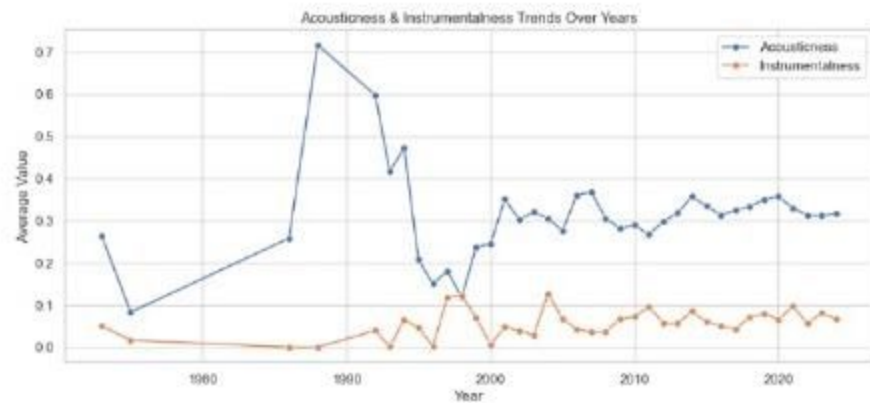
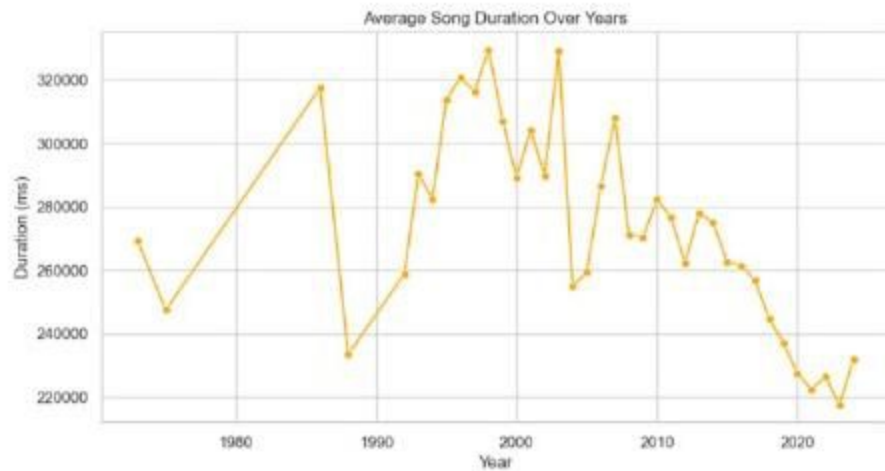


Danceability vs Energy: Evolution Over Years

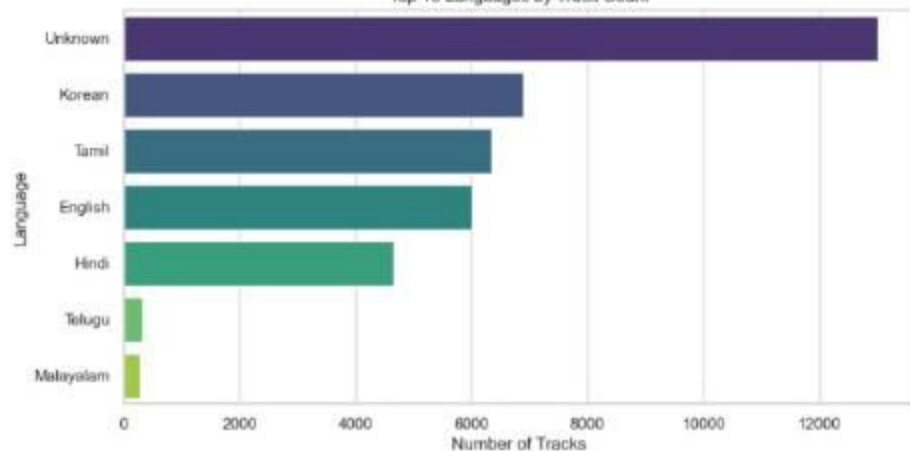




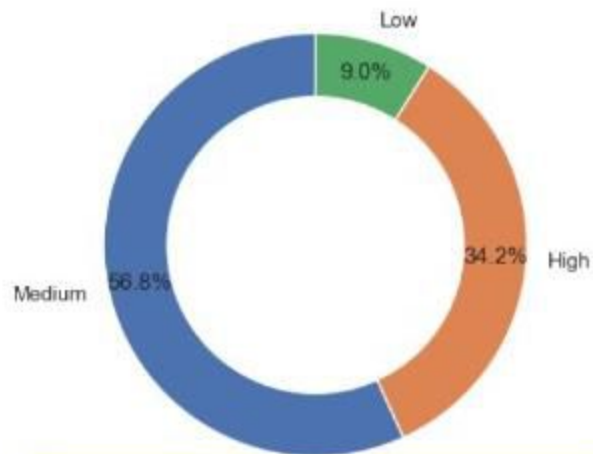




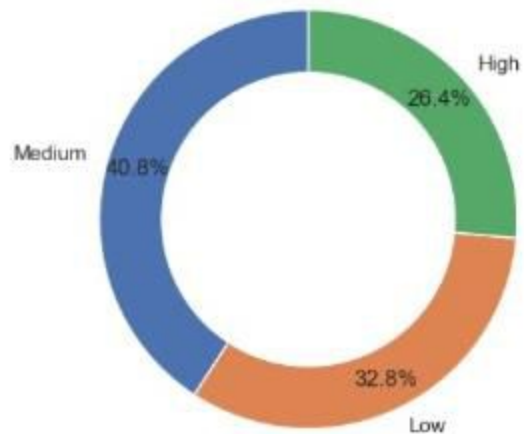
Top 10 Languages by Track Count



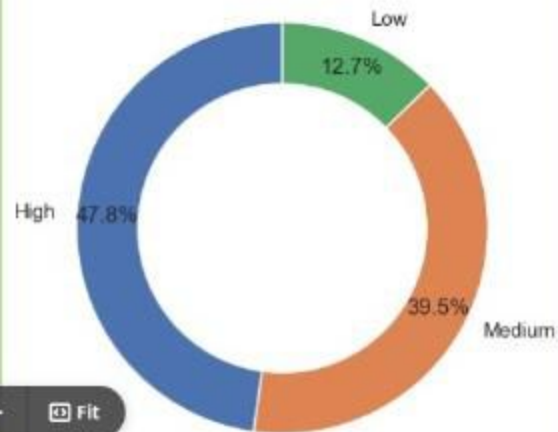
Danceability Levels Distribution



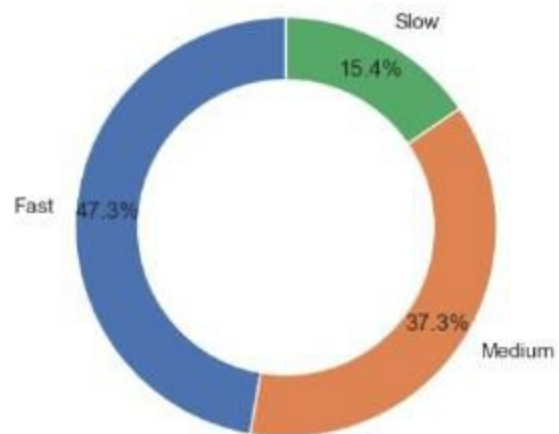
Valence Levels Distribution



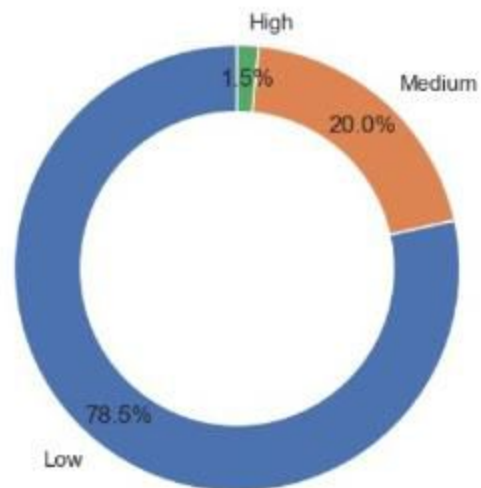
Energy Levels Distribution



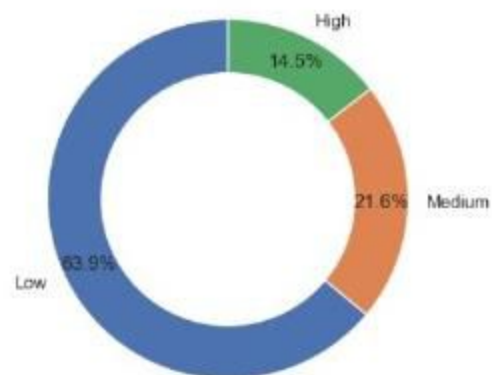
Tempo Levels Distribution



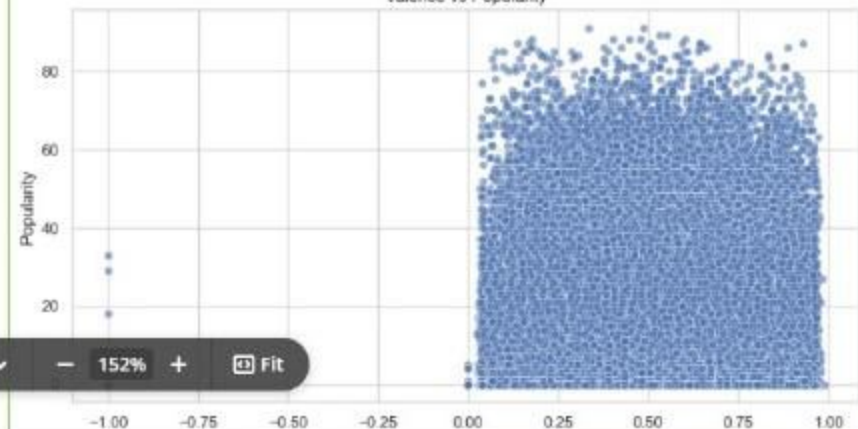
Popularity Levels Distribution



Acousticness Levels Distribution



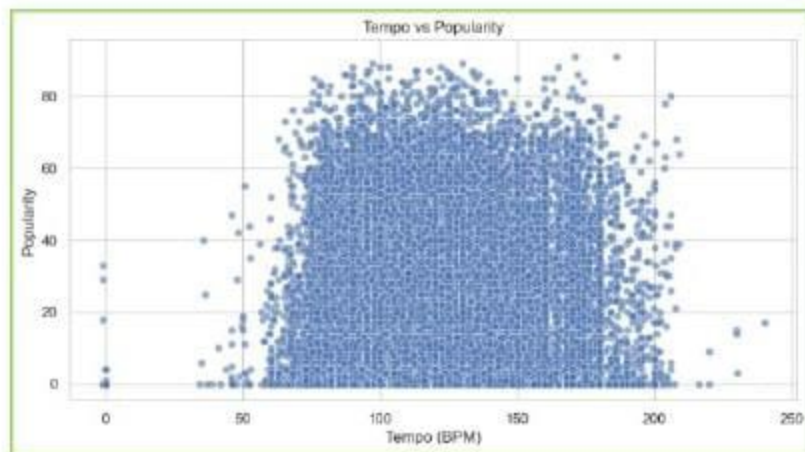
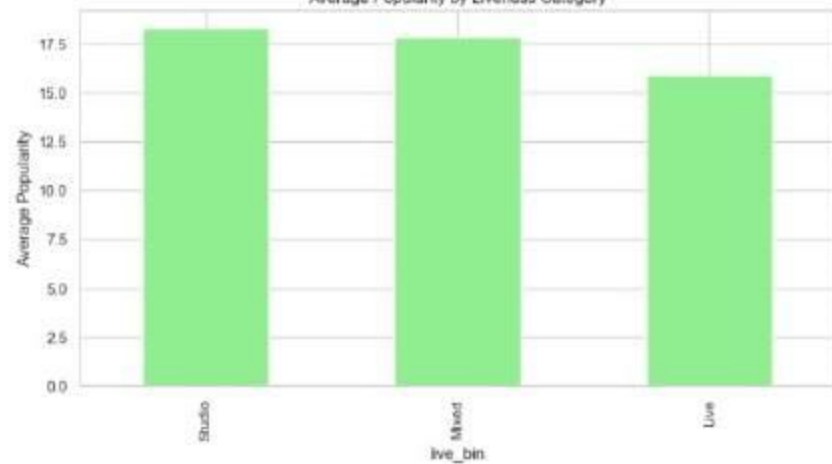
Valence vs Popularity



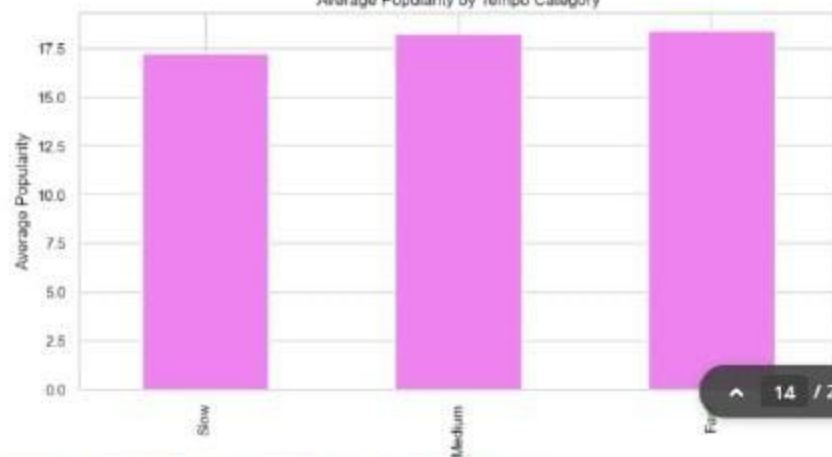
Analysis includes track languages and yearly trends in song characteristics, showing how listener preferences evolve with popular languages including English, Spanish, and others over time.

User Demographics and *Behavior*

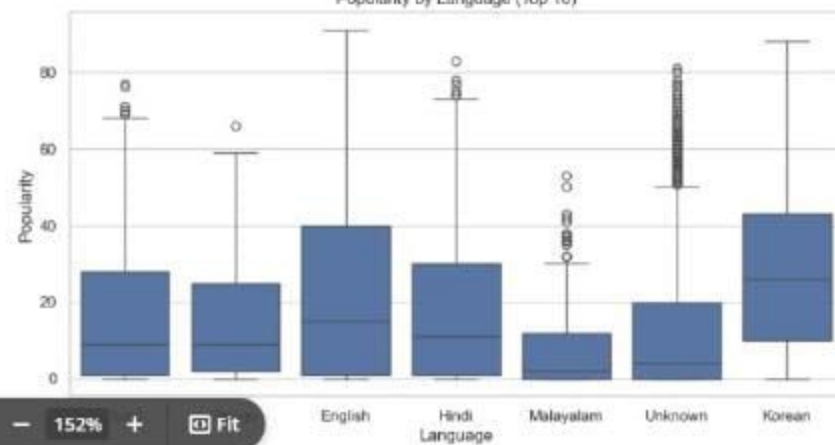
Average Popularity by Liveness Category

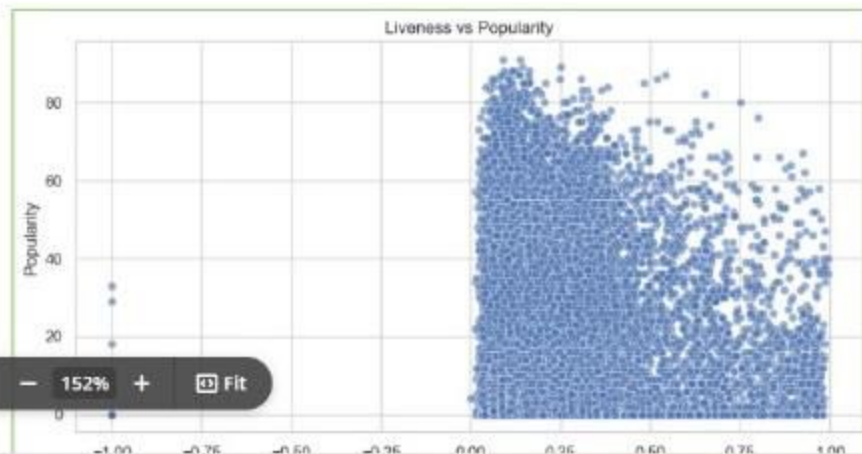
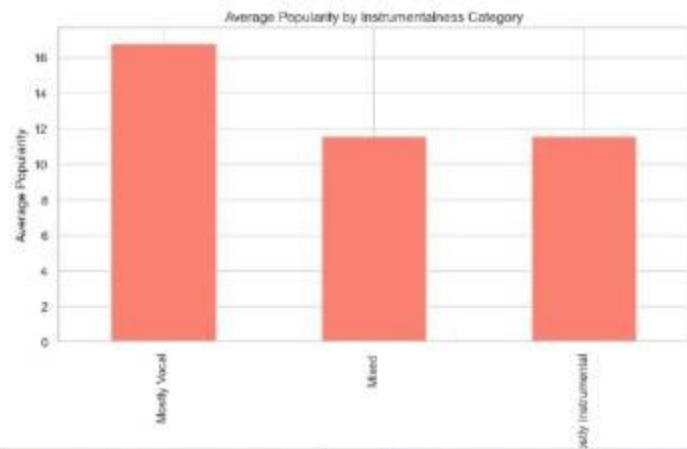
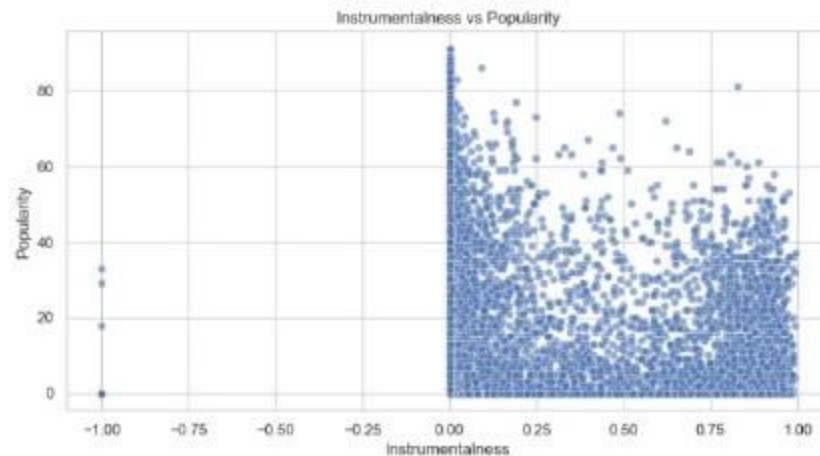
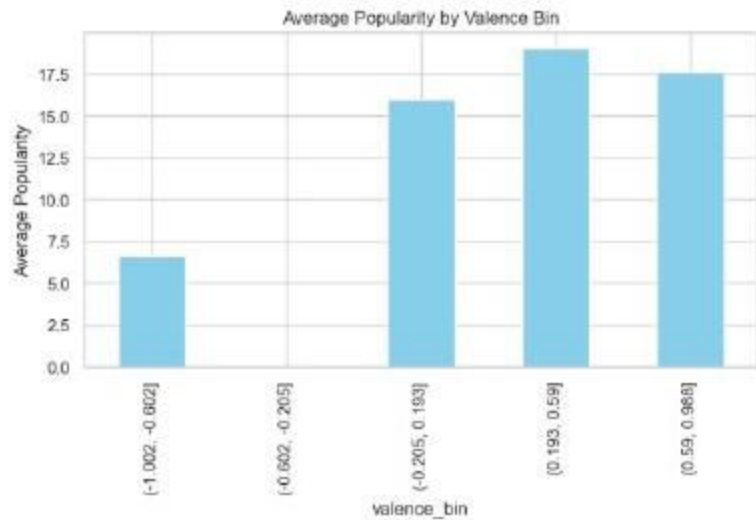


Average Popularity by Tempo Category



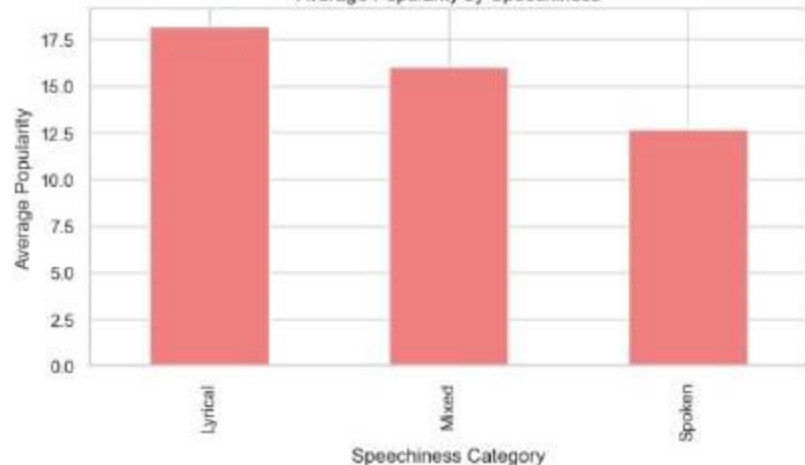
Popularity by Language (Top 10)





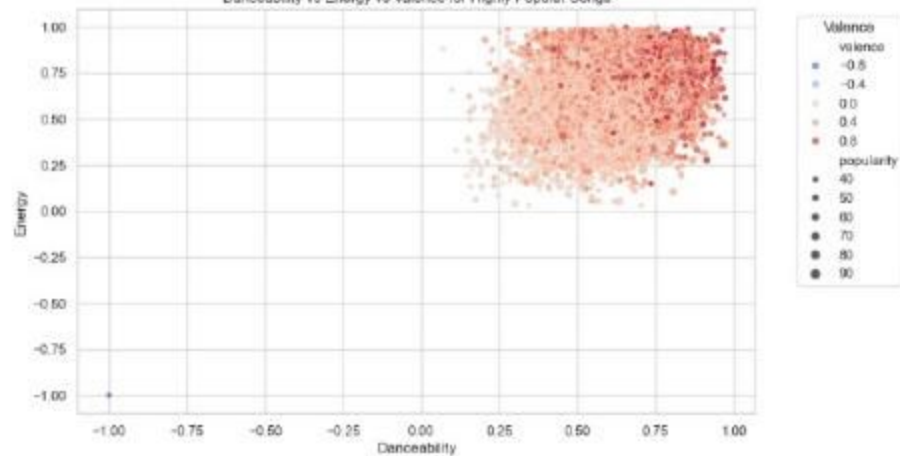


Average Popularity by Speechiness

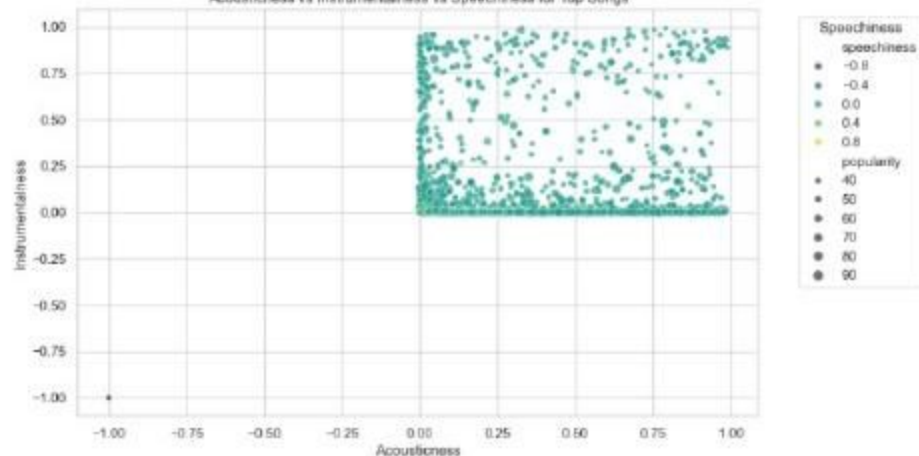


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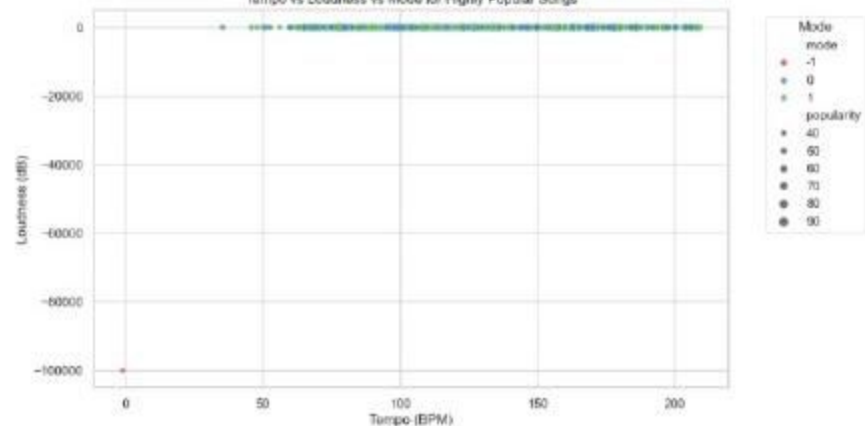
Danceability vs Energy vs Valence for Highly Popular Songs

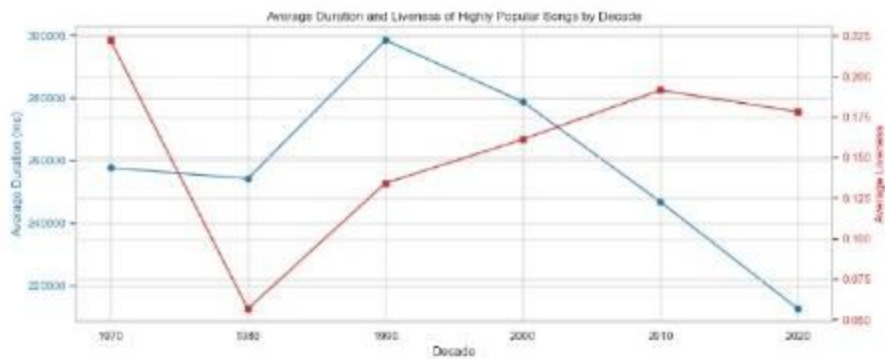
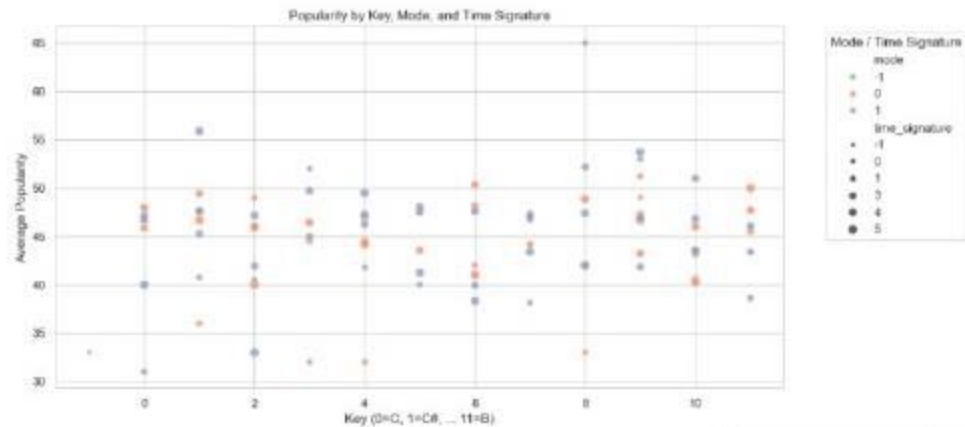
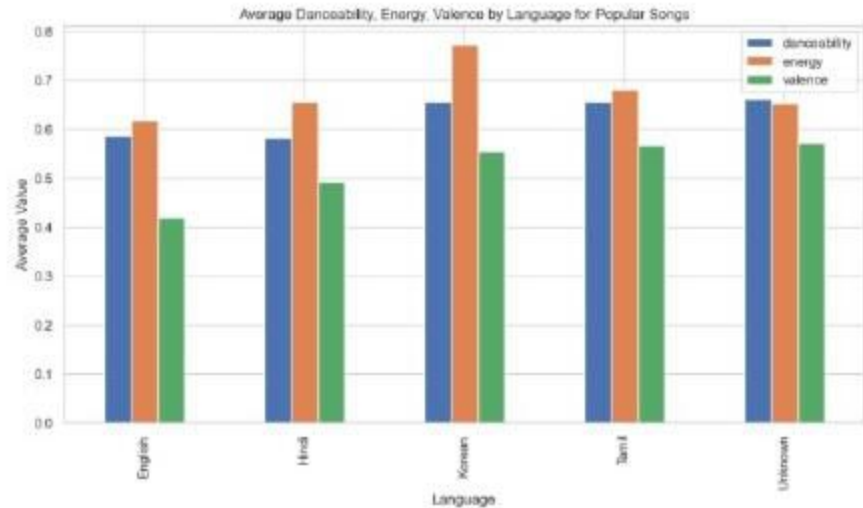
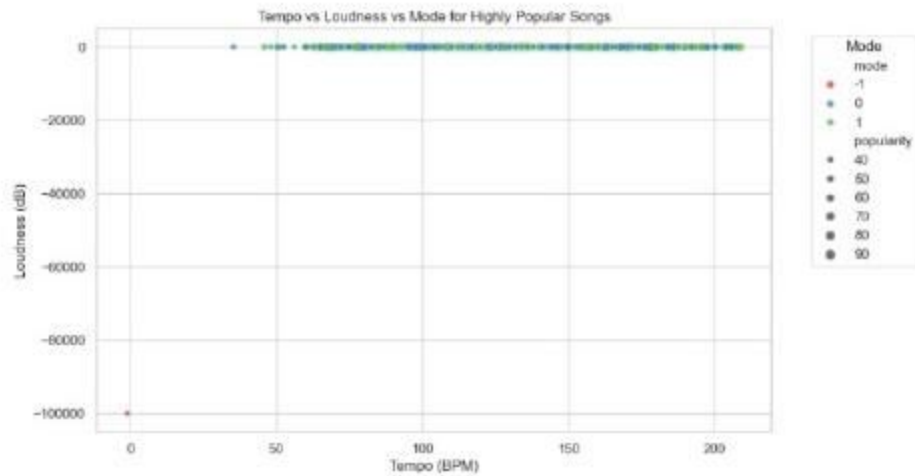


Acousticness vs Instrumentalness vs Speechiness for Top Songs

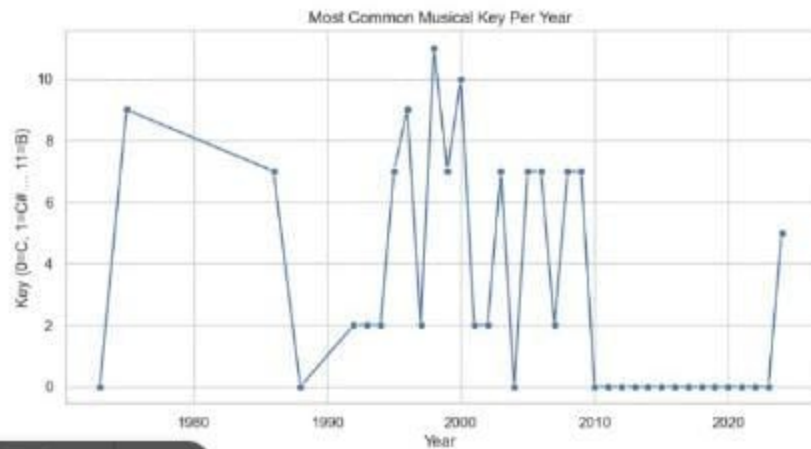
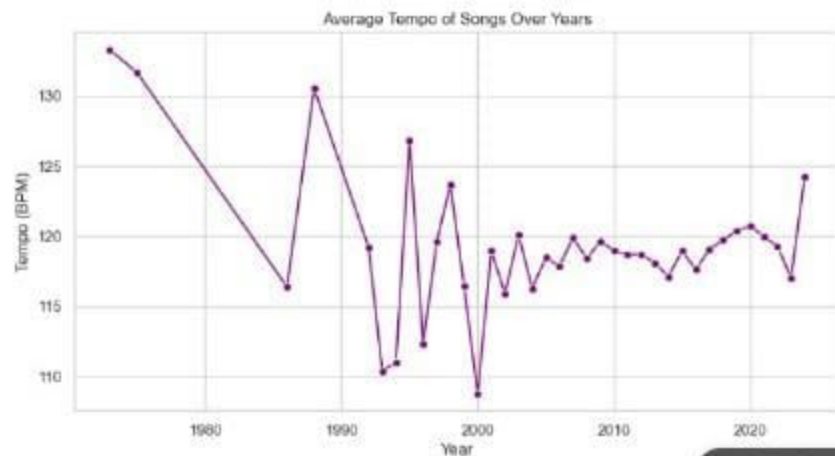
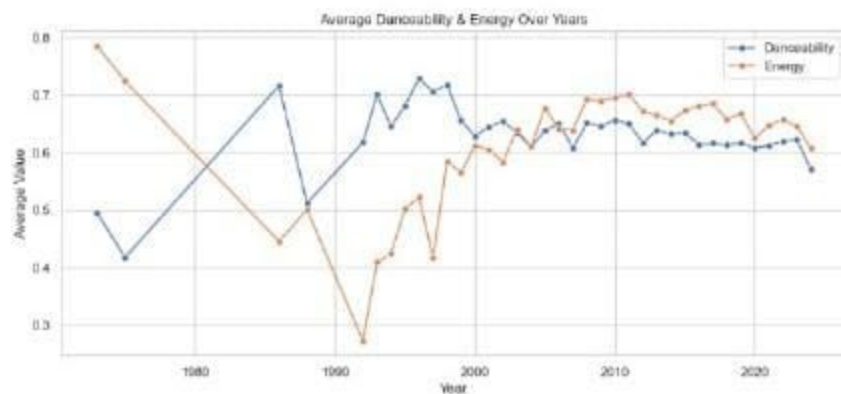
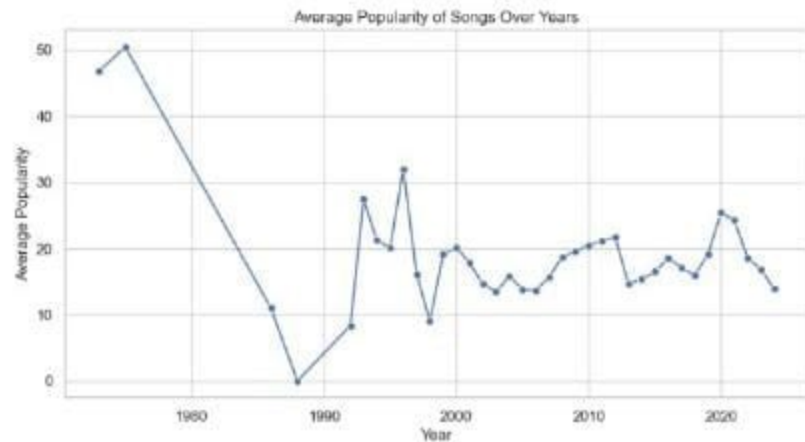


Tempo vs Loudness vs Mode for Highly Popular Songs









# Sentiment and Genre *Analysis*

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Examines musical positivity (*valence*), speechiness, and instrumentality with respect to popularity, revealing trends in emotional tone and genre characteristics favored by listeners.



# Conclusions

Spotify data reveals that **energy**, **danceability**, and **valence** positively influence track popularity. Trends in language, tempo, and other audio metrics provide valuable insight into music consumption and preferences for targeted content strategies.

