

Mini Project Title:

Spotify Data Analysis and Recommendation Engine

Group Members:

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1. Introduction:

The project aims to conduct trend analysis on different music genres using Spotify's API. By retrieving data on the latest trends in various genres, the project seeks to understand the evolving preferences of users. Additionally, a recommendation engine will be built to suggest similar songs based on user input. The significance lies in providing insights into genre trends and enhancing user experience through personalized song recommendations.

2. Problem Statement:

The project addresses the challenge of analyzing recent trends in different music genres and visualizing them effectively. This involves retrieving up-to-date data from the Spotify API, identifying trends, and presenting them in an understandable format through graphs. Based on the scrapped data make a recommendation engine to recommend songs based on any song.

3. Objectives:

- Retrieve and analyze data on the latest trends in different music genres from Spotify.
- Plot graphs to visualize genre trends over time.
- Develop a recommendation engine to suggest similar songs based on user input.
- Evaluate the performance of the recommendation engine in terms of accuracy and relevance.

4. Scope:

The project will focus on:

- Data retrieval from Spotify API.
- Exploratory data analysis to understand user behavior and song attributes.
- Building a recommendation engine using machine learning techniques.
- Evaluation of the recommendation engine's performance.
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Exclusions:

- User interface development for the recommendation system..

5. Methodology:

- Data retrieval: Utilize Spotify API to fetch trend data for different music genres and song attributes.
- Trend analysis: Analyze trend data to identify popular songs, artists, and emerging trends within each genre.
- Recommendation engine: Implement content-based filtering techniques to build the recommendation system based on song attributes.
- Evaluation: Assess the recommendation engine's performance using metrics such as accuracy, relevance, and user satisfaction.

6. Expected Outcomes:

- Insights into trends in various music genres based on Spotify data.
- A functional recommendation engine capable of suggesting similar songs based on user input.
- Improved user engagement and satisfaction through personalized recommendations.

7. Timeline:

- Data retrieval and preprocessing (3 days)
- Exploratory data analysis (2 days)
- Recommendation engine development (1 week)
- Documentation and presentation (2 days)

8. Resources Required:

- Spotify API access
- Programming languages: Python
- Data analysis libraries: Pandas, NumPy, Scikit-learn
- Development environment: Jupyter Notebook, Flask
- Collaboration tools: GitHub

9. References:

- Spotify API Documentation: <https://developer.spotify.com/documentation/web-api>