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Project Proposal: "Personalized Music Recommendation System"

Project Summary:

The goal of this project is to create a music recommendation system to help users explore new music that accurately matches their musical preferences. With the large amounts of music that is available online, it can be very challenging to discover new music that is actually in alignment with their tastes. This program will allow users to enter their personal music preferences and will recommend songs that meet the specified criteria. We hope that this project will provide users with a simple and efficient way to enhance their listening experience.

Technical Approach:

We plan to employ a logic-based approach using Prolog. In Prolog, we intend to create a number of facts and rules that will capture the relationships between songs and their characteristics which will be the foundation for matching the songs with user-specified criteria. The facts will consist of the song attributes and user preferences. The rules will define the basis of how songs are matched to user preferences. For instance we could define a rule that recommends songs to users based on genre, artist, or mood. Prolog provides a strong way to establish complex relationships, utilize backtracking to explore multiple music recommendations, and is proficient at pattern-matching.

In terms of software libraries, the only library we foresee implementing is the library(editline), to allow us to facilitate user interactions using a command-line interface so the program can read input and display output.

Dataset:

For this project, we will need to utilize a real-world dataset of music that provides information about songs and their varying attributes such as genre, artist, length, mood, etc. We plan to gather our data using the Kaggle website to find an appropriate repository of songs specifically from a music platform API. As the dataset will be of utmost importance to the success of the project, we will pre-process the data and extract the relevant attributes prior to Prolog integration.

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Conclusion:

Our objective is to create a music recommendation system leveraging Prolog's logical reasoning capabilities to provide personalized song suggestions to users. A strong music dataset will be pivotal in ensuring appropriate song matching to user preferences. We will use this dataset as the foundation to create various rules that will dictate how the program recommends songs to the user. We hope that this project will ultimately help in providing a simplified approach to discovering new music and improving the user experience.