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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 CLIPS. In CLIPS, 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. 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. CLIPS provides a strong way to establish a large number of rules, utilizes declarative programming which can help make the rules easier to follow, and is proficient at pattern-matching.

In terms of software libraries, we do not foresee utilizing any external libraries. However, we will likely need to write a simple Python script to leverage the use of datasets in CLIPS. The integration of the Python script will provide a simpler way to read in the .csv file and assert the data as facts into our program.

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 CLIPS integration.

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Conclusion:

Our objective is to create a music recommendation system leveraging CLIPS' 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.