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Project 4

Project Proposal: Spotify Music Recommendation System

Overview: Develop a music recommendation system using machine learning techniques with Spotify datasets. The system aims to provide accurate and personalized song recommendations based on user preferences by leveraging the power of machine learning algorithms and Spotify's vast music catalogue.

Data: Utilize Spotify datasets from Kaggle, including the following sources:

1. <https://www.kaggle.com/datasets/vatsalmavani/spotify-dataset>
2. <https://www.kaggle.com/datasets/maharshipandya/-spotify-tracks-dataset>

Objectives:

1. Predict user preferences and recommend songs aligned with their musical taste.
2. Leverage audio features to capture user preferences and song similarities effectively.
3. Identify suitable machine learning algorithms for scalability, accuracy, and interpretability.
4. Evaluate the performance of the recommendation system and ensure its effectiveness in real-world scenarios.

Methodology:

1. Data Collection: We will gather a large dataset from Kaggle as indicated above.
2. Data Preprocessing: The collected data will undergo preprocessing steps such as data cleaning, normalization, encoding to ensure compatibility with machine models and features engineering from the Spotify datasets.
3. Exploratory Data Analysis: Gain insights, patterns, and feature distributions.
4. Model Training and Evaluation: Experiment with ML algorithms, and fine-tune for accurate recommendations.
5. User Interface Development: Create an intuitive interface for personalized song recommendations.
6. Testing and Validation: Ensure the accuracy, robustness, and scalability of the recommendation system.

Tools: Python, JS, HTML,CSS, SQL