**Music Recommendation System**

**Abstract:**

With the exponential growth of digital music, personalized recommendation systems have become essential for enhancing user experience. The project presents a Music Recommendation System developed using HTML, CSS, JavaScript, and Python, designed to provide users with tailored song suggestions based on their preferences.

The front-end, built with HTML, CSS, and JavaScript, ensures an interactive and user-friendly interface, while the back-end, powered by Python and Flask, processes user data and integrates Artificial Intelligence (AI) techniques for intelligent recommendations. The system employs machine learning algorithms, including collaborative filtering and content-based filtering, to analyze user listening patterns, song attributes, and behavioral data. Additionally, deep learning models enhance recommendations by understanding music features and user preferences through neural networks.

By leveraging AI, the system continuously improves its suggestions based on real-time feedback, making the recommendations more accurate over time. The integration of music streaming APIs enhances accessibility, delivering an engaging and efficient recommendation experience.

**Users And Functionality**

**End Users**

* Music enthusiasts, casual listeners, students, professionals, and individuals of all age groups who use the system for personalized music recommendations.
* Interaction with the System**:**
* Browses and listens to recommended songs.
* Creates and manages playlists.
* Rates or provides feedback to improve suggestions.
* Uses search functionality to explore music.

**Admin Users (System Administrators)**

* Developers, data scientists, and system administrators responsible for maintaining and managing the recommendation system.
* Interaction with the System:
  + Monitors and analyzes user engagement metrics.
  + Updates machine learning models for improved accuracy.
  + Ensures system security and scalability.