

A.I. Disclaimer: Work for this assignment was completed with the aid of artificial intelligence tools and comprehensive documentation of the names of, input provided to, and output obtained from, these tools is included as part of my assignment submission.

Title: Smart Playlist Manager – AI-powered Music Recommendation App

Team Members: Rachana Gaire, Marina Safwat, and Isaac Hollis

Team Number: 5

Problem Statement

People may find it difficult to discover songs they would enjoy. Traditional music apps often shuffle playlists randomly, causing repeated songs or breaking the flow of a themed playlist. Users want a smarter way to keep the playlist engaging while still aligned with their current theme or previous listening habits.

Proposed Solution

Create an app that learns the music preferences of the user to increase music discovery. The app will dynamically play the songs based on the theme and recently played, favorite, and liked songs. The app will keep track of the played song and automatically keep on playing the new ones without repeating the songs that have already been played at least within one listening session.

Target Users

Everyone with internet access loves music and often wants to listen to music that matches the vibe, theme, or feel they are experiencing in the moment.

Key Features

- Favorite button
- Like button
- Dislike button

- Skip button
- Search song textbox with autocomplete
- Categorize songs (by genre, theme, or user preference).
- Recently played
- Reset personalization button

Feasibility Check

This project can be completed within a semester. Each team member has multiple years of programming experience and have taken classes involving app development. Some members have worked with machine learning (neural networks and reinforcement learning), and this experience will be crucial to playlist personalization. Each member is familiar with the programming language Python, the language we may use for machine learning. Though there is little collective experience using Dart, the language used by the multiplatform app creation software, Flutter, there exists ample documentation to get started.

Technology

- Frontend/App Framework: Flutter
- Programming Language: Dart, Python
- AI Model: Two-tower / Siamese network and a cross-attention Transformer or deep MLP
- Database: Firebase (for user preferences and playlist data)
- Platform: Mobile (Android/iOS)

GitHub

https://github.com/Marina-Safwat/SDD_Project