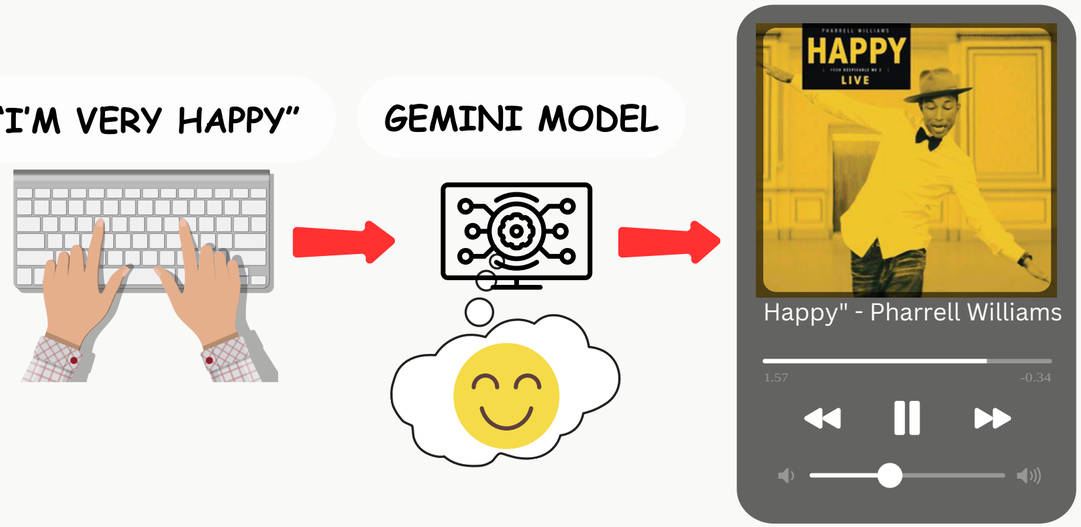
Emotion-Aware Music Recommendation System

Background

Music streaming platforms like Spotify provide recommendations based on user history but fail to consider real-time emotional states. This limitation can reduce the emotional resonance of the music-listening experience. There is an opportunity to improve personalized recommendations by leveraging user input about their mood.

Objectives

- Develop a mood-based song recommendation system using generative AI.
- Enable real-time emotional input and relevant song playback.
- Create a seamless user interface for interaction and playback across Spotify-connected devices.



System Overview

1. User Input: The user enters free-text input expressing their mood or emotions (e.g., "I feel sad, my friend moved away").
2. Generative AI Module: A generative AI model processes the input to extract emotion from texts, then return song recommendation.
3. Spotify API Integration: The app searches for the recommended song on Spotify and plays it on the user-selected device.

Key Features

1. Personalized Song Recommendations: Based on real-time emotional context.
2. Cross-Platform Playback: The app allows playback on any Spotify-connected device.
3. Intuitive User Experience: A responsive web app with easy-to-use controls.

Methodology

- **Framework:** Streamlit for building the interactive user interface.
- **APIs Used:** Google Gemini API: For generative text-based song recommendations.
- **Spotify API:** For song search, playback, and device control.
- **Authentication:** Spotify OAuth 2.0 to manage secure user authentication.

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