**Project Documentation**

**Project Title: Rhythmic Tunes: Your Melodic Companion**

**Team ID: NM2025TMID36616**

**Team Members**

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***Abstract***

**“Rhythmic Tunes: Your Melodic Companion” is an intelligent music-based application designed to**

**provide users with a personalized and engaging musical experience. The project aims to combine**

**music recommendation, rhythm analysis, and melodic assistance to help users explore new tunes,**

**improve their musical creativity, and enjoy customized playlists. The system integrates AI-driven**

**algorithms with user preferences to deliver an interactive melodic companion.**

***Problem Statement***

**Music lovers often face challenges in finding songs that match their mood, discovering new music,**

**and getting personalized recommendations. This project addresses these issues by creating a**

**smart and adaptive melodic companion.**

***Objectives***

**1. To design a music-based platform that offers intelligent song recommendations.**

**2. To analyze rhythm, tempo, and mood of songs.**

**3. To create playlists tailored to user preferences.**

**4. To provide a user-friendly interface.**

**5. To enhance engagement through adaptive learning.**

***Proposed System***

**The system collects user preferences, analyzes rhythm and mood, suggests songs, creates**

**playlists, and improves recommendations over time using AI.**

**System Architecture**

**1. Input Layer: User details, preferences, listening history.**

**2. Processing Layer: AI/ML-based recommendation engine, rhythm analysis.**

**3. Database: Song library with metadata.**

**4. Output Layer: Personalized playlists, song recommendations.**

***Methodology***

**- Requirement Analysis**

**- Design (UI/UX and system workflow)**

**- Development (Frontend + Backend + Database integration)**

**- Implementation of AI Recommendation Engine**

**- Testing & Debugging**

**- Deployment**

***Technologies Used***

**Frontend: HTML, CSS, JavaScript, React**

**Backend: Python (Flask/Django) or Node.js**

**Database: MySQL / MongoDB**

**AI/ML: Recommendation algorithms**

**Tools: GitHub, VS Code, APIs for music data**

***Features***

**- Mood-based playlist generation**

**- Rhythm & melody analysis**

**- AI-powered recommendation system**

**- User feedback loop**

**- Simple user interface**

***Testing***

**- Unit Testing: Modules tested individually.**

**- Integration Testing: Checked frontend, backend, and database.**

**- User Testing: Feedback-based improvements.**

**Expected Outcomes**

**- Personalized playlists.**

**- Enhanced music discovery.**

**- Intelligent adaptive learning.**

**- Improved user engagement.**

***Conclusion***

**“Rhythmic Tunes: Your Melodic Companion” will serve as an innovative platform by providing**

**rhythm-based recommendations, personalized playlists, and adaptive features, bridging the gap**

**between user expectations and existing music platforms.**

**Video link :** https://drive.google.com/file/d/1Ww3kcYghjtD6mUtSfjfhKifuqFRDbBUY/view?usp=drivesdk