Project Title

Personalized Recommendation Engine (Media) Web App
Sprint 5

This documentation covers the progress and deliverables completed up to Sprint 5 of the project. During this sprint, our team completed both the Music Recommendation System and the Movie Recommendation System Using the Two Tower Algorithm. We also transitioned our entire backend from SQLite to Firebase to create a unified, scalable, and efficient data architecture.

Problem Statement

Students and general users often spend a significant amount of time searching for songs, videos, or movies that match their mood and interests. Our project aims to address this by building a media recommendation platform that uses AI-driven analysis of user behavior, preferences, and contextual patterns to generate accurate and personalized media recommendations.

Intended Users

• Students
• Music and video enthusiasts
• Anyone seeking quick and personalized recommendations

Sprint 5 Goals / Objectives

For Sprint 5, our team focused on completing the core intelligence of the platform, including:

• Completing the implementation of the Two Tower Algorithm for both music and movie recommendations
• Selecting, cleaning, and integrating datasets for the recommendation models
• Ensuring stable backend logic for accurate recommendation outputs
• Transitioning fully from SQLite to Firebase as the only database
• Strengthening the connection between backend APIs and the frontend interface

Sprint 5 Deliverables

• Fully implemented Music Recommendation System using the Two Tower model
• Fully implemented Movie Recommendation System supported by the selected dataset
• Complete migration from SQLite to Firebase for all user, media, and interaction data
• Backend improvements for faster, more reliable recommendation responses
• Frontend updates to display both music and movie recommendations
• Updated Jira board reflecting all Sprint 5 tasks and completions

Tools / Technologies

• Frontend: HTML, CSS, JavaScript (served through Express)
• Backend: Node.js with Express
• Database: Firebase
• AI Model: Two Tower Recommendation Algorithm
• Authentication: Firebase Auth
• Project Management: Jira (task tracking), GitHub (version control)

Risks / Challenges

• Handling larger datasets without affecting model performance
• Ensuring privacy while working with behavioral data
• Addressing cold start scenarios for new users with minimal activity history