Phase 2: Project Designing Phase

Date	01 April 2025
Team ID	**SWTID1744391109**
Project Title	Musicify - A MERN Music Streaming App
Maximum Marks	2 Marks

4.1 Problem – Solution Fit:

- With the exponential growth of online music streaming platforms, users today are presented with an overwhelming amount of content. Platforms like Spotify, Apple Music, and YouTube Music host millions of tracks, but most users only engage with a small fraction of this content. The challenge lies not in the availability of music, but in meaningful **music discovery** — finding new tracks that resonate with personal taste without relying solely on generic algorithmic suggestions.

- Moreover, users lack a **visually rich representation of their listening history**, a way to understand their musical evolution, and tools that foster engagement beyond passive consumption. Current systems offer “for you” sections or limited data summaries, but these often fall short in personalization, interaction, and long-term engagement.

- **Musicify** addresses these issues by acting as a **music discovery and visualization tool** that not only recommends music based on user behavior but also visualizes the user's listening patterns as an interactive journey. It provides a more holistic and immersive experience that brings clarity to musical preferences, connects users with emerging artists, and makes music exploration a visually engaging and emotionally satisfying experience.

4.2 Proposed Solution

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1	Problem Statement (Problem to be solved)	Users face **choice overload** with countless music options and struggle with discovering new music tailored to their taste. Existing platforms offer limited personalization and lack meaningful visual tools to track and understand listening behaviors..
2	Idea / Solution Description	**Musicify** is an interactive music discovery platform that provides users with a **visual timeline** of their listening history, offering **personalized recommendations** based on individual preferences. The app combines an intuitive frontend, a powerful backend, and an admin panel for content management to create a unique music discovery experience.
3	Novelty / Uniqueness	Musicify stands out with its **interactive timeline** of user listening history, **personalized recommendations**, and **transparent recommendation logic**. Unlike traditional platforms, it offers users a **visual and self-reflective** way to discover and engage with music.
4	Social Impact / Customer Satisfaction	**Musicify** enhances customer satisfaction by helping users **connect emotionally** with music, discover new genres, and track their musical journey. It promotes **artistic diversity**, emotional well-being, and **personal growth** through music.
5	Business Model (Revenue Model)	The platform adopts a **freemium model** with revenue streams from: ● Premium subscriptions for advanced features. ● Affiliate links to music services. ● Sponsored playlists and custom merchandise.
6	Scalability of the Solution	The solution is **scalable** with: ● **Cloud infrastructure** for efficient resource management.

		● **Modular design** that allows independent scaling of components. ● **API-first architecture** for easy third-party integration.

4.3 Solution Architecture:

Key Objectives:

- **Role-Based Authentication**: Implement secure login/signup with Firebase, providing access control for Admin and Buyer roles.
- **Scalable Database**: Use MongoDB Atlas to store data on users, music tracks, playlists, and orders.
- **Personalized Music Experience**: Offer recommendations based on genres and user preferences, ensuring tailored content for each user.

Core Components:

- **Frontend**: React.js to manage dynamic UI based on user roles (Admin/Buyer).
- **Authentication**: Firebase for login/signup and user role management.
- **Backend API**: Node.js + Express for routing and business logic.
- **Database**: MongoDB Atlas for storing users, music tracks, playlists, and orders.
- **Recommendations Engine**: Personalized music recommendations based on user behavior and preferences.

Solution Architecture Diagram:

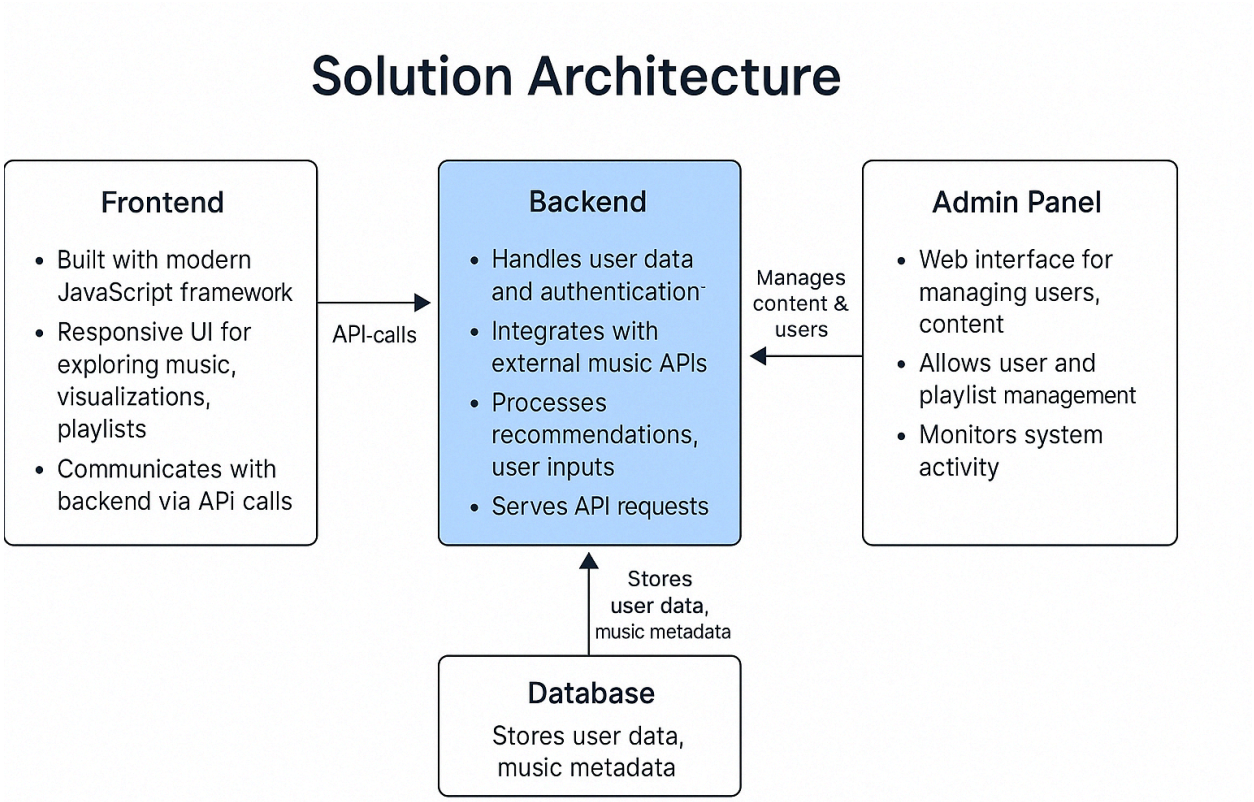

Figure 1: Architecture and data flow of the website