

Project Design Phase
Solution Architecture

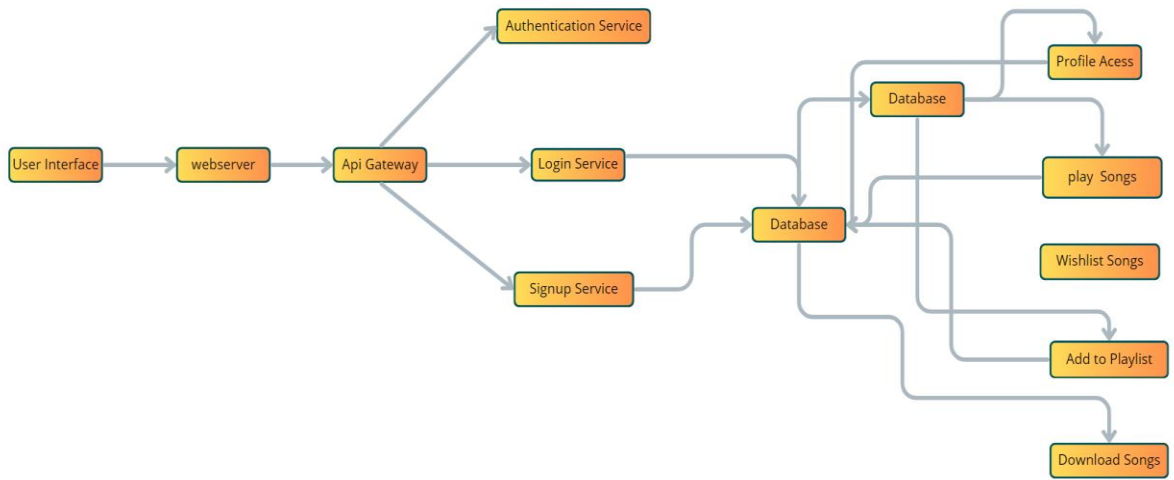
| | |
|---------------|------------------|
| Date | 15 February 2025 |
| Team ID | SWTID1741150324 |
| Project Name | Rhythmic Tunes |
| Maximum Marks | 4 Marks |
| Team Leader: | C Auxilia Sharin |
| Team Member: | Prenitha K |
| Team Member: | V KavyaShree |
| Team Member: | G Divya Bharathi |

Solution Architecture:

The solution architecture for **HarmonyStream**, the Rhythmic Tunes Application, ensures a **scalable, high-performance, and immersive platform** for discovering, streaming, and organizing music across genres, artists, and personalized playlists. The architecture prioritizes seamless audio delivery, real-time recommendations, and cross-device synchronization to enhance user engagement.

- Find the best tech solution to solve existing business problems.
- Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
- Define features, development phases, and solution requirements.
- Provide specifications according to which the solution is defined, managed, and delivered.

Example - Solution Architecture Diagram:



Project Design Phase
Problem – Solution Fit Template

| | |
|---------------|------------------|
| Date | 6 March 2025 |
| Team ID | SWTID1741150324 |
| Project Name | Rhythmic Tunes |
| Maximum Marks | 2 Marks |
| Team Leader: | C Auxilia Sharin |
| Team Member: | Prenitha K |
| Team Member: | V KavyaShree |
| Team Member: | G Divya Bharathi |

Problem – Solution Fit Overview:

The **Problem-Solution Fit** ensures that the identified problem aligns with the needs of music listeners and that the proposed solution effectively addresses it. This validation is crucial before further development.

Purpose:

- Address the fragmented music streaming experience, where users struggle to find a comprehensive platform that caters to diverse musical tastes and offers personalized recommendations.
- Provide an intuitive and engaging platform for users to discover new music, artists, and playlists without relying on multiple sources.
- Offer seamless playback, offline listening, and social sharing features to enhance user engagement and satisfaction.
- Provide a platform that empowers independent artist to gain exposure.
- Improve accessibility and engagement through an **interactive UI, responsive design, and well-structured data flow.**

Problem Statement:

Many music enthusiasts face challenges in finding a single platform that offers:

- A vast and diverse music library.
- Accurate and personalized music recommendations.
- Reliable offline listening capabilities.
- A strong social community around music.
- Fair exposure for independent artists.

Solution:

“Rhythmic Tunes”, a music streaming web and mobile application, will provide:

- An extensive music library through partnerships with major and independent record labels.

- personalized recommendations based on user listening history and preferences.
- Offline listening mode for downloaded playlists and albums.
- Dedicated artist pages, to help users find more information about the artist.
- A freemium business model, that allows for free and paid users.

Project Design Phase Proposed Solution Template

| | |
|---------------|------------------|
| Date | 15 February 2025 |
| Team ID | SWTID1741150324 |
| Project Name | Rhythmic Tunes |
| Maximum Marks | 2 Marks |
| Team Leader: | C Auxilia Sharin |
| Team Member: | Prenitha K |
| Team Member: | V KavyaShree |
| Team Member: | G Divya Bharathi |

Proposed Solution for Music Streaming App

| S. No. | Parameter | Description |
|--------|--|---|
| 1 | Problem Statement (Problem to be solved) | Users often struggle to find a seamless, personalized music streaming experience that offers high-quality playback, real-time recommendations, and an intuitive user interface. This project aims to provide a responsive and engaging music streaming platform that integrates with a third-party API. |
| 2 | Idea / Solution Description | The Music Streaming App is a React-based frontend solution that allows users to search, stream, and manage their favourite music. It leverages a third-party API to fetch music data and ensures an intuitive and interactive UI/UX for a seamless experience. Users can create and manage playlists, search for songs/artists, and enjoy personalized recommendations. |
| 3 | Novelty / Uniqueness | - Personalized Playlists & Recommendations using AI-powered API suggestions - Intuitive UI/UX with responsive design across devices - Cross-Platform Support for both mobile and web users - Seamless Integration with third-party music APIs for vast content availability |
| 4 | Social Impact / Customer Satisfaction | - Provides an ad-free music streaming experience with customizable playlists - Brings emerging artists to a wider audience through recommendations - Increases user engagement through interactive features like favourite tracks, genre-based suggestions, and social sharing |
| 5 | Business Model (Revenue Model) | - Freemium Model : Free tier with ads, premium subscription for an ad-free experience - In-App Purchases : Exclusive access to curated playlists, offline downloads - Affiliate Partnerships : Integration with brands and music merchandise stores |
| 6 | Scalability of the Solution | - Can be expanded globally by integrating multiple third-party music APIs - Supports multi-user profiles for enhanced personalization - Can be extended to mobile applications for iOS & Android using React Native - Potential integration with AI-driven recommendation engines for improved user experience |