

Project Documentation

RhythmicTunes: Your Melodic Companion

1. Introduction

- **Project Title:** RhythmicTunes: Your Melodic Companion
- **Team ID :** NM2025TMID29559
- **Team Leader:** NARKEES BANU J & narkeesbravegril@gmail.com
- **Team Members:**
 - ASIN D & asin17520@gmail.com
 - JAYASURYA J & suryakomathi212@gmail.com
 - SHRUTHIKA X & shruthix60@gmail.com

2. Project Overview

RhythmicTunes is a personalized music streaming and recommendation platform that offers curated playlists, intelligent mood-based song suggestions, and social features to enhance the way users experience music. It serves as a **melodic companion**, understanding individual preferences, moods, and listening habits to deliver the right music at the right time.

2. Objectives

- 🎧 Offer **personalized music discovery** using AI and user preferences.
 - 🎵 Provide **high-quality audio streaming** and offline access.
 - 💡 Suggest music based on **user mood, activity, and time of day**.
 - 👥 Foster **social engagement** through playlist sharing and music communities.
 - 📊 Offer detailed **listening analytics** for music lovers.
-

3. Key Features

📖 a. Smart Music Recommendation Engine

- AI-based recommendations using user behavior, liked tracks, and listening history.
 - Mood-based suggestions (e.g., chill, workout, focus, happy).
 - Time and context-aware recommendations (morning boost, late-night vibes, etc.).
-

🎵 b. Music Library & Streaming

- Access to a vast collection of global songs, albums, and genres.
- High-fidelity audio options: Normal, High, and Lossless.
- Lyrics support with real-time sync.

- Playlist creation, sharing, and importing from other platforms.
-

c. Offline Mode

- Download songs and playlists for offline listening.
 - Smart download suggestions based on frequently played tracks.
-

d. Custom Playlists & Auto-Mixes

- Auto-generated playlists: “Weekly Discovery,” “Top 25 This Month,” “Daily Mix.”
 - User-created playlists with drag-and-drop song arrangement.
 - Collaborative playlists with friends.
-

e. Listening Stats & Music Journal

- Visual charts: Most played songs, genres, artists, and time-of-day trends.
 - Music mood journal – track how your music tastes change with your mood or activity.
 - Annual music recap (like “Your Year in Tunes”).
-

f. Mood Detection & Activity Modes

- Detect user mood through optional inputs or wearable integrations (e.g., heart rate, activity).
 - Activity modes: Study, Workout, Travel, Relax, etc.
 - Auto-switch between modes based on time and motion.
-

g. Cross-Platform Sync

- Real-time syncing across mobile, web, smart TVs, and wearables.
 - Continue playing a song seamlessly across devices.
-

h. Social Sharing & Community

- Share playlists, songs, or listening stats on social media.
 - Join or follow music communities based on genre, artist, or interest.
 - Comment and like tracks or playlists publicly.
-

i. Artist Connect

- Dedicated profiles for artists with bios, tours, latest releases, and behind-the-scenes content.
- Fans can follow artists for instant updates and exclusive content.
- Tips/donations to support indie artists directly.

3. Architecture

- **Frontend:** React.js with Bootstrap and Material UI
- **Backend:** Node.js and Express.js managing server logic and API endpoints
- **Database:** MongoDB stores user data, project information, applications, and chat messages

4. Setup Instructions

- **Prerequisites:**
 - Node.js
 - MongoDB
 - Git
 - React.js
 - Express.js – Mongoose – Visual Studio Code

- **Installation Steps:**

```
# Clone the repository git clone
```

```
# Install client dependencies cd  
client npm install
```

```
# Install server dependencies cd  
../server npm install
```

5. Folder Structure

```
SB-Works/  
|-- client/           # React frontend  
    |-- components/  
        |-- pages/  
|-- server/           # Node.js backend  
    |-- routes/  
        |-- models/  
        |-- controllers/
```

6. Running the Application

- **Frontend:**

```
cd client  
npm start •
```

- **Backend:**

```
cd server npm  
start
```

- **Access:** Visit <http://localhost:3000>

7. API Documentation

- **User:**
 - `/api/user/register`
 - `/api/user/login`
- **Projects:**

- /api/projects/create
 - /api/projects/:id • **Applications:** /api/apply
- **Chats:**
 - /api/chat/send
 - /api/chat/:userId

8. Authentication

- JWT-based authentication for secure login
- Middleware protects private routes

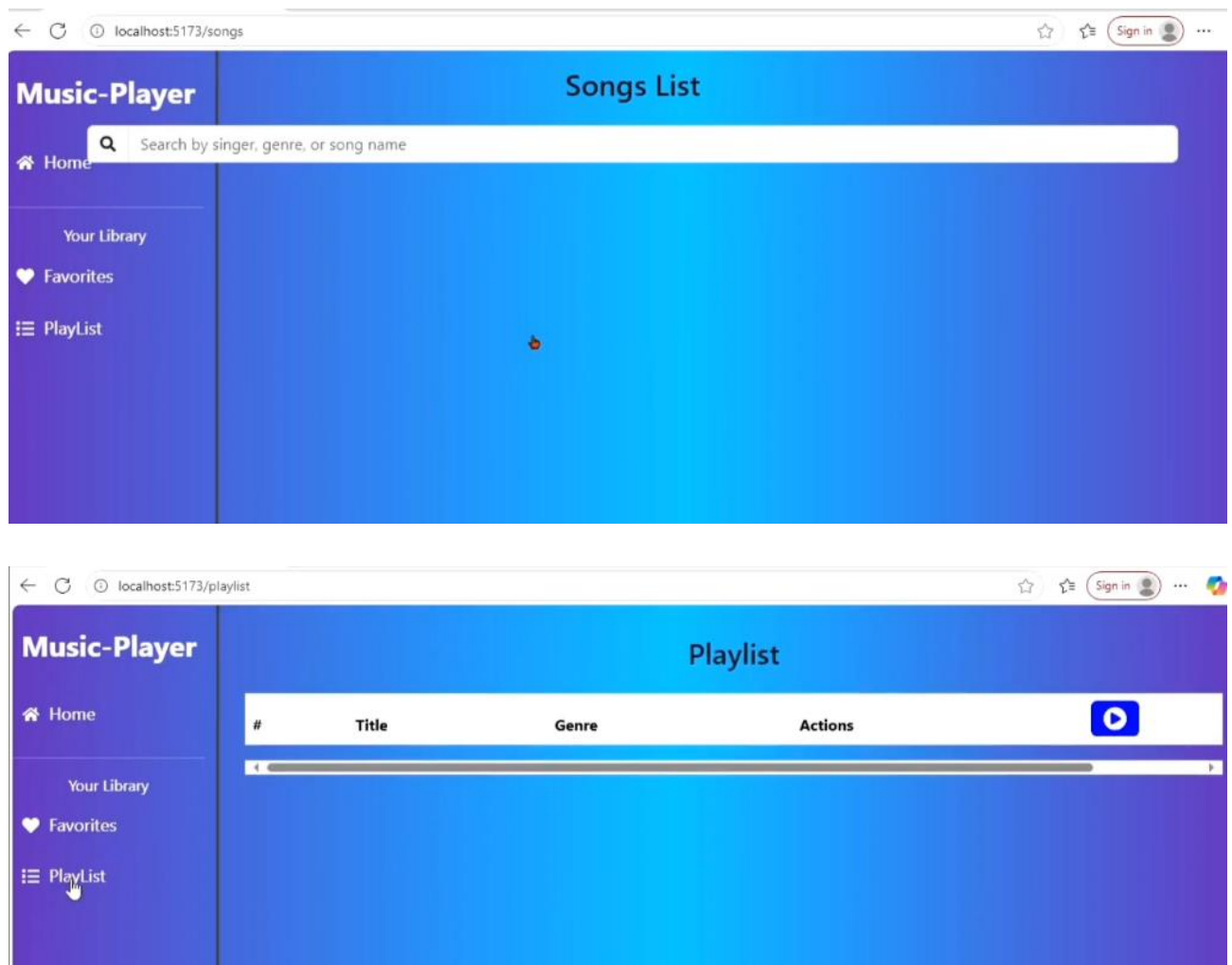
9. User Interface

- Landing Page
- Freelancer Dashboard
- Admin Panel
- Project Details Page

10. Testing

- Manual testing during milestones
- Tools: Postman, Chrome Dev Tools

11. Screenshots or Demo



12. Known Issues

13. Future Enhancements



1. AI-Generated Playlists

- **Description:** Use generative AI to create personalized playlists on the fly based on a mood, theme, or a single song.
- **Use Case:** “Make me a playlist for a rainy evening” or “Create a mix like this song.”
- **Benefit:** Hyper-personalized listening with minimal user effort.



2. Voice Assistant Integration

- **Description:** Integrate with smart voice assistants like Siri, Google Assistant, and Alexa.
- **Use Case:** Users can say, “Play my workout mix on RhythmicTunes” hands-free.
- **Benefit:** Improves accessibility and ease of use, especially on-the-go or during activities.

3. Live Radio & Podcasts Integration

- **Description:** Introduce curated internet radio stations and podcast content directly within the app.
- **Use Case:** Include talk shows, music interviews, or genre-specific radio streams.
- **Benefit:** Diversifies content offering and keeps users engaged longer.

4. Music Gamification

- **Description:** Add gamified elements like listening streaks, badges, quiz games (guess the song), and music trivia.
- **Use Case:** “Earn points for 7-day listening streaks” or “Unlock ‘Rock Expert’ badge.”
- **Benefit:** Increases user engagement, retention, and makes music discovery more fun.

5. Emotion Detection via Facial Recognition (Opt-in)

- **Description:** Use phone camera (with permission) to detect the user’s mood and suggest music accordingly.
- **Use Case:** If the user looks tired, suggest calming or uplifting music.
- **Benefit:** Deepens personalization through emotional context.

6. Music Therapy Mode

- **Description:** Curated playlists and soundscapes designed for stress relief, anxiety, focus, and sleep.
- **Use Case:** Guided audio sessions combining music with breathing or meditation techniques.
- **Benefit:** Adds health and wellness value to the platform.

7. Music NFT & Collectibles (Web3 Optional)

- **Description:** Let users buy, trade, or collect unique music-related NFTs like limited edition tracks, artist artwork, or badges.
- **Use Case:** “Own a collectible version of a live concert recording.”
- **Benefit:** Empowers artists and fans with ownership-based experiences.

8. Visualizer & Music Video Playback

- **Description:** Add dynamic audio visualizers and support for music video playback within the app.

- **Use Case:** Play synced visuals for lo-fi beats or view official music videos for top hits.
 - **Benefit:** Enhances the visual aspect of music listening, especially for relaxed or party settings.
-

9. Real-Time Listening with Friends ("Group Listen")

- **Description:** Allow multiple users to sync and listen to the same playlist or track in real-time, with live chat or emoji reactions.
 - **Use Case:** Friends listen to an album drop together, even when apart.
 - **Benefit:** Builds a community and makes music a shared experience.
-

10. Global Music Explorer

- **Description:** Discover music by country, region, or culture with interactive maps or curated regional playlists.
- **Use Case:** “Explore trending sounds from Brazil” or “Traditional Japanese lo-fi.”
- **Benefit:** Promotes global music diversity and discovery.