RYTHIMIC TUNES PROJECT DOCUMENTATION
INTRODUCTION

Project Title: RYTHIMIC TUNES :

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Team ID : SWTID1741179589146371

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Project Overview

Purpose:

Rhythmic Tunes is a music streaming web application designed to provide users with a seamless, engaging, and personalized music experience. Built using **React.js** for the frontend and **Node.js** for the backend, the platform enables users to explore, play, and manage their favorite music effortlessly.

Features:

User Authentication: Secure login and signup using JWT authentication.

Music Library: Browse an extensive collection of songs by artists, albums, and genres.

Playlists Management: Create, edit, and delete custom playlists

Favorites & Likes: Mark songs as favorites for easy access.

Architecture:

Component Structure

The application follows a modular component-based architecture:

App.jsx – The main entry component.

Header.jsx – Navigation bar with search and user authentication options.

Home.jsx – Displays a list of songs, albums, and playlists.

MusicPlayer.jsx – A reusable component for playing songs with controls like play, pause, shuffle, and repeat.

Playlist.jsx – Displays user-created playlists and allows adding/removing songs.

SongCard.jsx – A reusable component for individual song display.

LyricsDisplay.jsx – Shows lyrics in sync with the currently playing song.

ThemeToggle.jsx – Dark mode and light mode toggle component.

Footer.jsx – Footer section with links and copyright information.

State Management:

- Uses Context API for managing global state.
- Music Context.jsx handles all music-related data, including songs, playlists, and player controls.
- Local state is used within individual components for UI interactions, such as play/pause status and theme switching.

Routing:

Uses react-router-dom for seamless navigation between pages.

Example Routes:

- **/ → Home Page** (Displays trending and recommended songs)
- **/song/:id →** Song Details Page (Displays lyrics, artist info, and play options)
- **/playlist/:id →** Playlist Page (Shows user-created playlists and songs)
- **/upload →** Upload New Song Page (Admin feature for adding songs)
- **/login →** User Authentication Page

Setup Instructions for Rhythmic Tunes

Prerequisites

- Install **Node.js** (latest stable version recommended)

Installation

1. Clone the repository:

git clone: https://github.com/madurai2004/RythmicTunes-SWTID1741179589146371.git

2. Navigate to the project directory:

cd cookbook

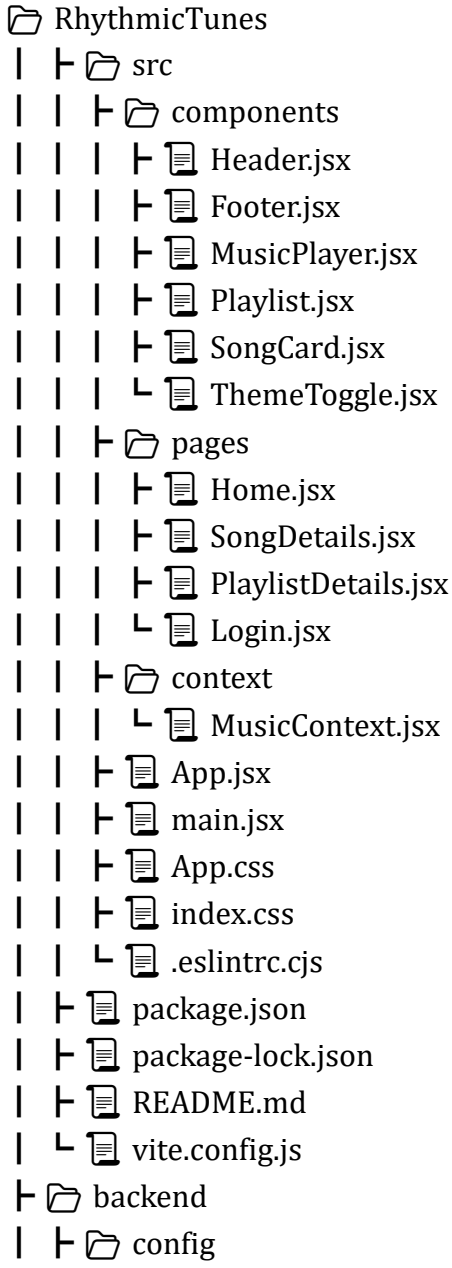
3. Install dependencies:

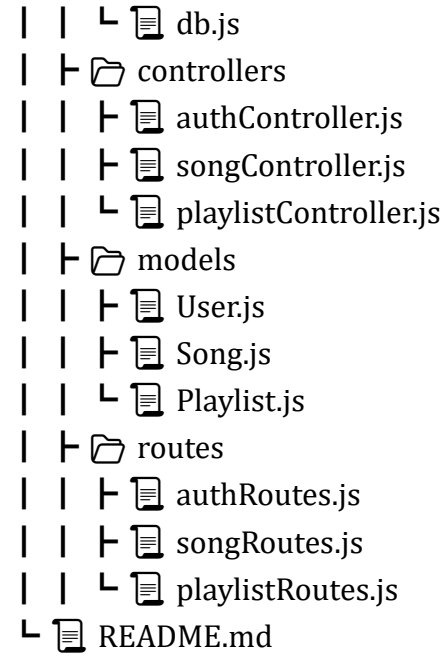
npm install

4. Start the development server:

npm run dev

Folder Structure





Running the Application

- Run the frontend locally:
- npm run dev

Component Documentation

Key Components

```jsx
import React from "react";
import { useNavigate, useParams } from "react-router-dom";
const SongDetails = ({ songs }) => {
  const { id } = useParams();
  const navigate = useNavigate();
  const song = songs.find((s) => s.id === id);
  if (!song) {
    return <p className="loader">Loading...</p>;
  }
  return (
    <div className="song-page">
      <div className="song-container">
        {/* Song Header: Image and Details */}
        <div className="song-header">
          <div className="song-img">
            <img src={song.thumbnail} alt={song.title} className="song-image" />
          </div>
          <div className="song-info">
            <h3>{song.title}</h3>
            <p><strong>Artist:</strong> {song.artist}</p>
            <p><strong>Album:</strong> {song.album}</p>
            <p><strong>Genre:</strong> {song.genre}</p>
            <p><strong>Duration:</strong> {song.duration}</p>
          </div>
        </div>
        {/* Music Player */}
        <div className="music-player">
          <h4>Now Playing</h4>
          <audio controls>
            <source src={song.audioUrl} type="audio/mp3" />
            Your browser does not support the audio element.
          </audio>
        </div>
        {/* Back Button */}
        <button className="back-button" onClick={() => navigate(-1)}>
          Back
        </button>
      </div>
    </div>
  );
};
export default SongDetails;
```

Reusable Components for RhythmicTunes

Header.jsx – Navigation bar for easy access to different sections.
Footer.jsx – Bottom section with credits, links, or additional info.
SongCard.jsx – Displays a single song card (Title, Artist, Album, Image).
SongForm.jsx – Handles adding/editing songs in the playlist.

State Management & UI for RhythmicTunes

Global State:

- Managed using **Context API** in MusicContext.jsx.
- Provides **songs data** to all components for seamless access.

Local State:

- Used within components for **UI interactions**, such as:
- **Handling form inputs** in SongForm.jsx.
- **Managing play/pause state** in the audio player.

User Interface Styling:

- **CSS:** Uses normal CSS for styling.
- **Theming:** Custom styles for buttons, song cards, and navigation.
- **Responsive Design:** Ensures a smooth experience across devices.

Testing Strategy:

- **Testing Framework:** Uses **Jest & React Testing Library** for unit testing.
- **Code Coverage:** Ensures key components like SongCard.jsx and SongDetails.jsx are well-tested
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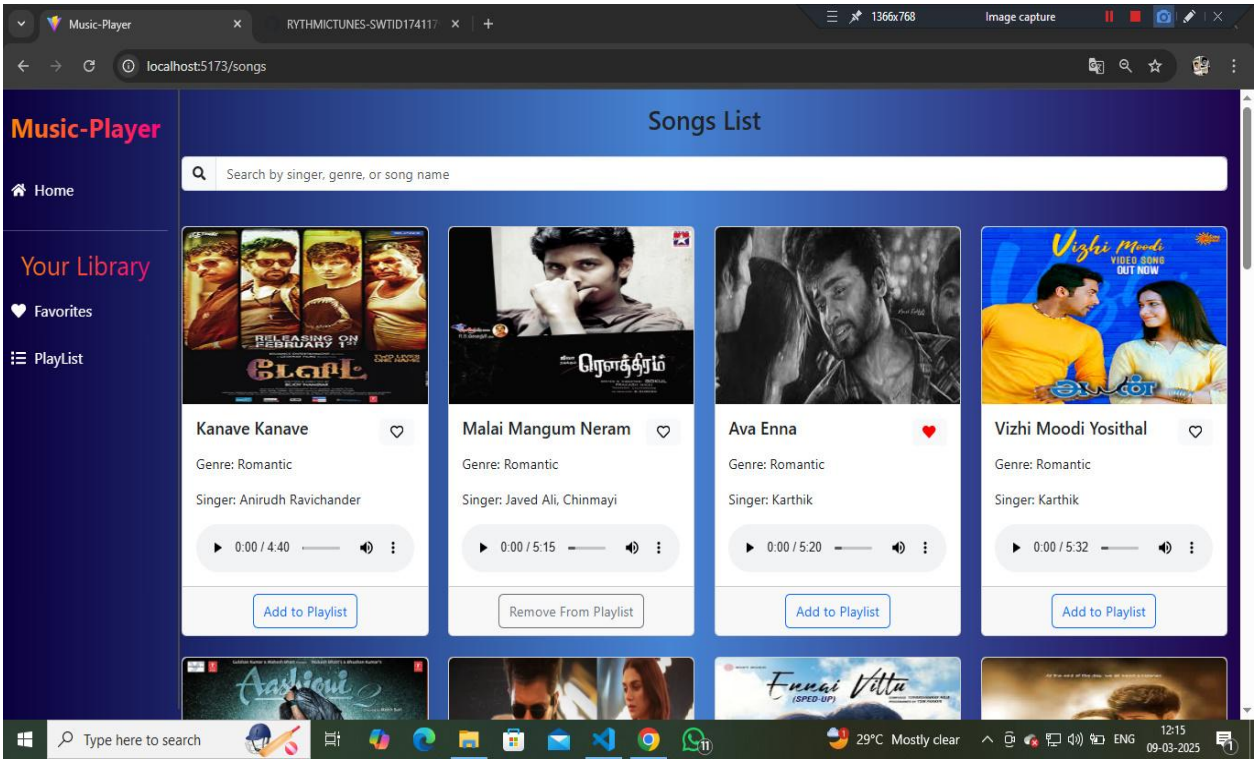
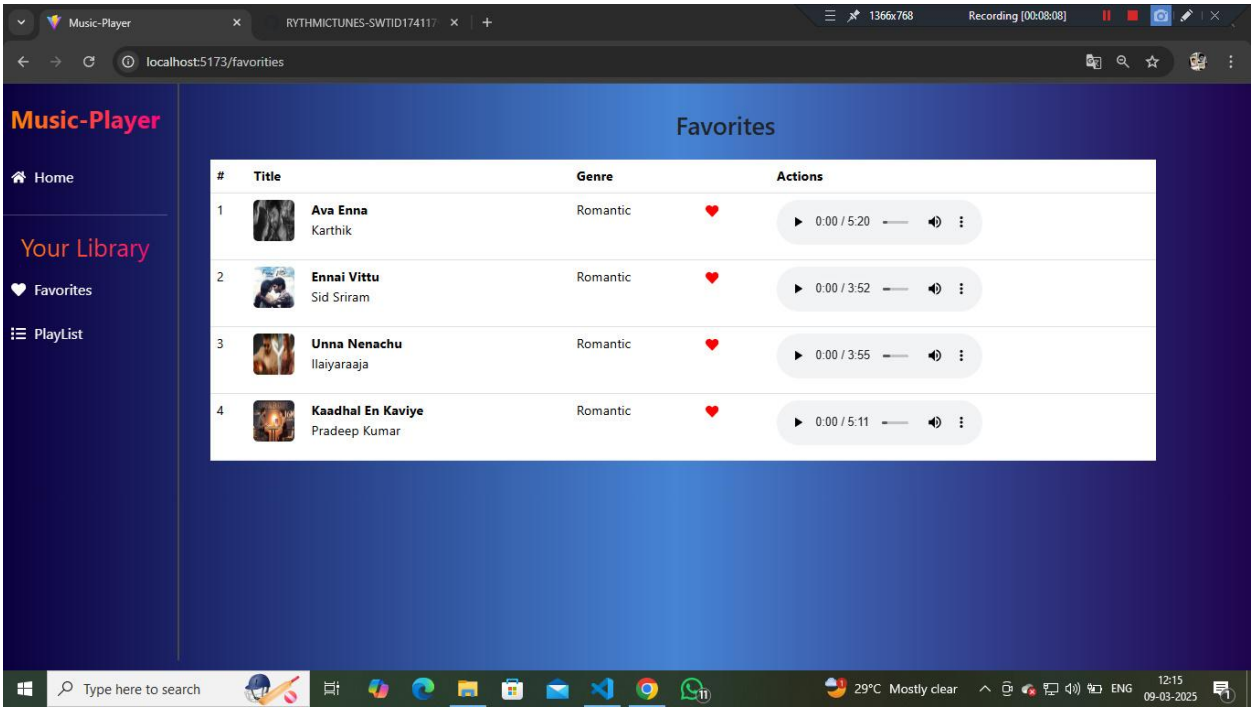
Screenshots or Demo

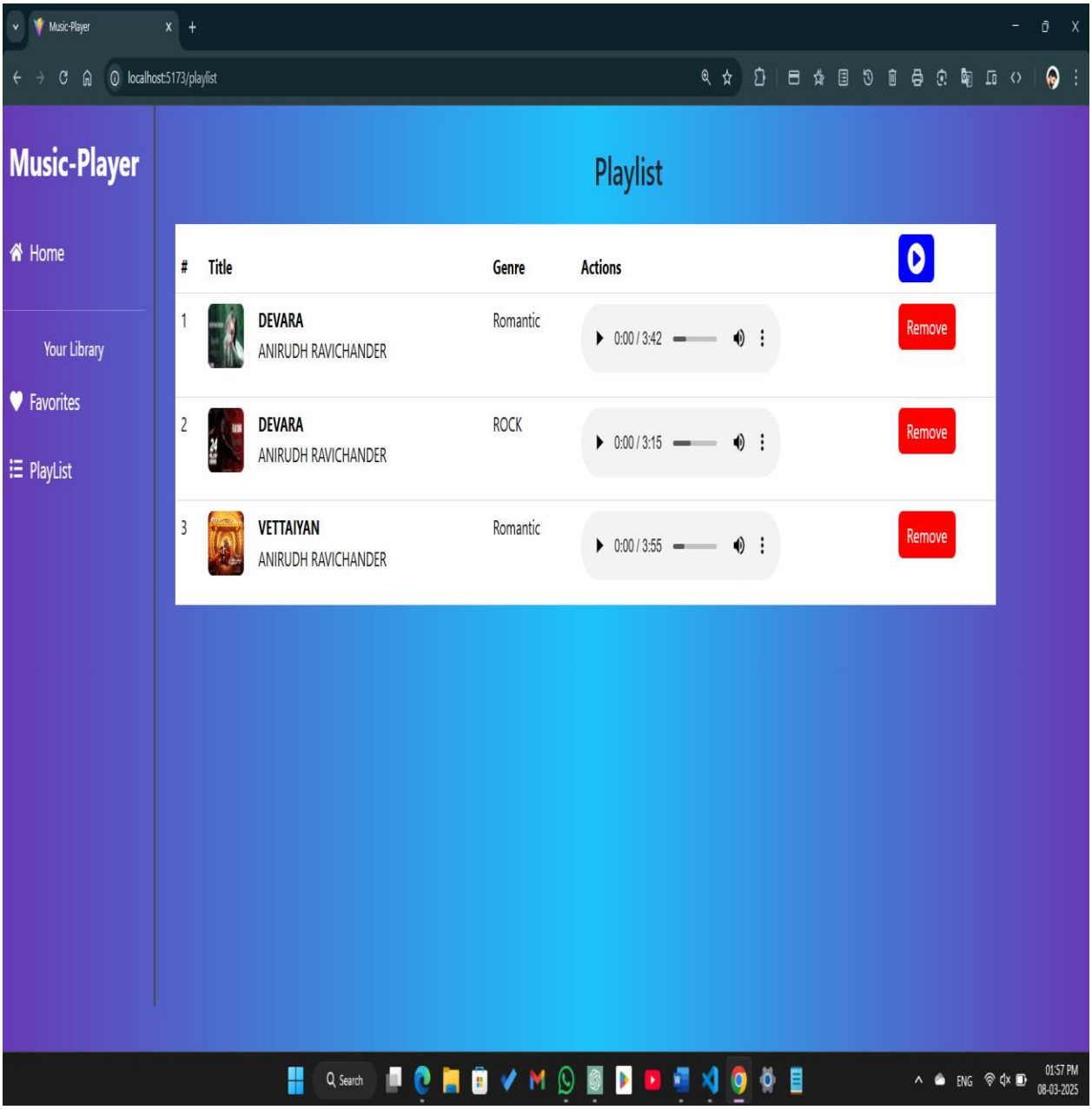
HOME PAGE:


Music-Player
RYTHMICTUNES-SWTID174117
1366x768
Image capture
localhost:5173/songs
Music-Player
Songs List
Home
Search by singer, genre, or song name
Your Library
Favorites
PlayList
Kanave Kanave
Genre: Romantic
Singer: Anirudh Ravichander
0:00 / 4:40
Add to Playlist
Malai Mangum Neram
Genre: Romantic
Singer: Javed Ali, Chinmayi
0:00 / 5:15
Remove From Playlist
Ava Enna
Genre: Romantic
Singer: Karthik
0:00 / 5:20
Add to Playlist
Vizhi Moodi Yosithal
Genre: Romantic
Singer: Karthik
0:00 / 5:32
Add to Playlist
Type here to search
29°C Mostly clear
ENG
12:15
09-03-2025

FAVORITES:


Music-Player
RYTHMICTUNES-SWTID174117
1366x768
Recording [00:08:08]
localhost:5173/favorities
Music-Player
Favorites
Home
Your Library
Favorites
PlayList
Title Genre Actions
1 Ava Enna Karthik Romantic 0:00 / 5:20
2 Ennai Vittu Sid Sriram Romantic 0:00 / 3:52
3 Unna Nenachu Ilaiyaraaja Romantic 0:00 / 3:55
4 Kaadhal En Kaviye Pradeep Kumar Romantic 0:00 / 5:11
Type here to search
29°C Mostly clear
ENG
12:15
09-03-2025

PLAYLIST:


Music-Player
localhost:5173/playlist
Music-Player
Home
Your Library
Favorites
PlayList
Playlist
Title Genre Actions
1 DEVARA ANIRUDH RAVICHANDER Romantic 0:00 / 3:42 Remove
2 DEVARA ANIRUDH RAVICHANDER ROCK 0:00 / 3:15 Remove
3 VETTAIYAN ANIRUDH RAVICHANDER Romantic 0:00 / 3:55 Remove
Search
ENG
01:57 PM
08-03-2025

Demo Link:

https://drive.google.com/drive/folders/12dvESPdI3G_uCwkq8brCYt-2XzaSBh-X

Known Issues

- Song files are not stored persistently yet.
- Filtering options for songs need refinement (e.g., by artist, album, or genre).

Future Enhancements

- Add a favorites/playlist feature to allow users to save songs.

Thanks You