**Fronted Development With React.js**

**Project documentation. Format**

**Rhythmic Tunes: your melodic companion**

1. **Introduction :**

**Project Title : Rhythmic Tunes your melodic companion**

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**2. Project Overview :**

* **Purpose : Rhythmic Tunes is a modern music streaming application designed to offer users an immersive listening experience. It’s provides the vast collection of songs, playlists and personalized and recommendations. The app ensures a seamless interface for browsing, discovering and enjoying music.**
* **Features :**
  + **Browse Songs by Genre, Artist or Album.**
  + **Personalized Playlist Creation**
  + **Search Functionality with Real-Time Suggestions**
  + **Media Player with Play /Pause ,Next Previous, and Volume Control**
  + **Bookmark Feature for Saving Favorite Tracks**
  + **Light/Dark Mode for Improved User Experience**
  + **Responsive Design for Desktop and Mobile Devices**

**3.Architecture :**

**Component Structure :**

* **App .js \_\_ Root Component Structure managing layout and routing**
* **Header .js \_\_ Navigation bar with search Functionality**
* **SongList .js \_\_ Display a list of available Songs**
* **SongCard .js \_\_ Individual card showing songs details and Controls**
* **Playlist .js \_\_ manager user created Playlist.**
* **Media Player .js \_\_ provides audio play back Controls**
* **Footer .js \_\_ Display copyright and app links.**

**State Management :**

**Context API \_ used for managing the global States such as theme Preferences, playlists data, and Bookmarked songs.**

**Routing :**

**React router : Implemented for seamless navigation between the music categories, playlists view, songs details**

**4. Setup instructions :**

**Prerequisites :**

* **Node. Js ( v18 or higher)**
* **Npm or yarn**

**Installation :**

1. **Clone the Repository :**

**’’’ bash**

**Git clone** [**https://github.com/darunraj0071/Rhythmic**](https://github.com/darunraj0071/Rhythmic) **\_ Tunes. Git**

**Cd Rhythmic Tunes**

**’’’**

1. **Install dependencies :**

**’’’ bash**

**Npm Install**

**’’’**

1. **Create .’env’ file (for API keys for environment variables):**

**’’’env**

**REACT\_ APP\_MUSIC\_ API\_ KEY = your \_ api\_ key\_ here**

**’’’**

**4.Run the Application :**

**’’’Bash**

**Npm start**

**’’’**

**5.Folder Structure**

**/src**

**| \_\_\_/Component**

**| \_\_\_ Header .js**

**| \_\_\_\_songList .js**

**| \_\_\_songCard .js**

**| \_\_\_playlist .js**

**| \_\_\_mediaplayer .js**

**| \_\_\_ Footer. Js**

**|-\_\_\_/pages**

**| \_\_\_ Home .js**

**| \_\_\_ discovering. Js**

**| \_\_\_ playlists. Js**

**| \_\_\_favorites .js**

**|-\_\_/ assets**

**| \_\_\_ images**

**| \_\_\_ icons**

**| \_\_\_ styles**

**| \_\_/utils**

**| \_\_\_api.js**

**| \_\_\_ helpers .js**

**|\_\_\_ constants .js**

**| \_\_\_\_app .js**

**| \_\_\_\_ index .js**

**6.Running the Application**

**Frontend server command :**

**’’’bash**

**Npm start**

**’’’**

**7. Component Documentation**

**Key Components :**

* **Header: provides navigation, search Functionality, and theme toggling**
* **SongList: Display categories or search songs in a Structured format**
* **SongCard : Display Individual songs details with Play/Pause Controls**
* **Media Player: Controls audio play back,Volume, and track navigation**

**Reusable Components:**

* **Button component: used for action like “play” ,” Pause “,or “add to playlists**
* **Local State: Managed using react’s useState() for tracks progress, user interaction, and dynamic updates**

**9. User interface:**

* **Clean ,minimalistic UI designed for seamless navigation**
* **Fully Responsive layout with smooth transitions**
* **Light/Dark Mode toggle for personalized visual comfort**

**10. Styling**

**Css Frameworks/Libraries**

**Tailwind css \_ used for fast and modern UI design**

* **Theming :**

**Integrated theme switcher for enhanced user experience**

**11. Texting**

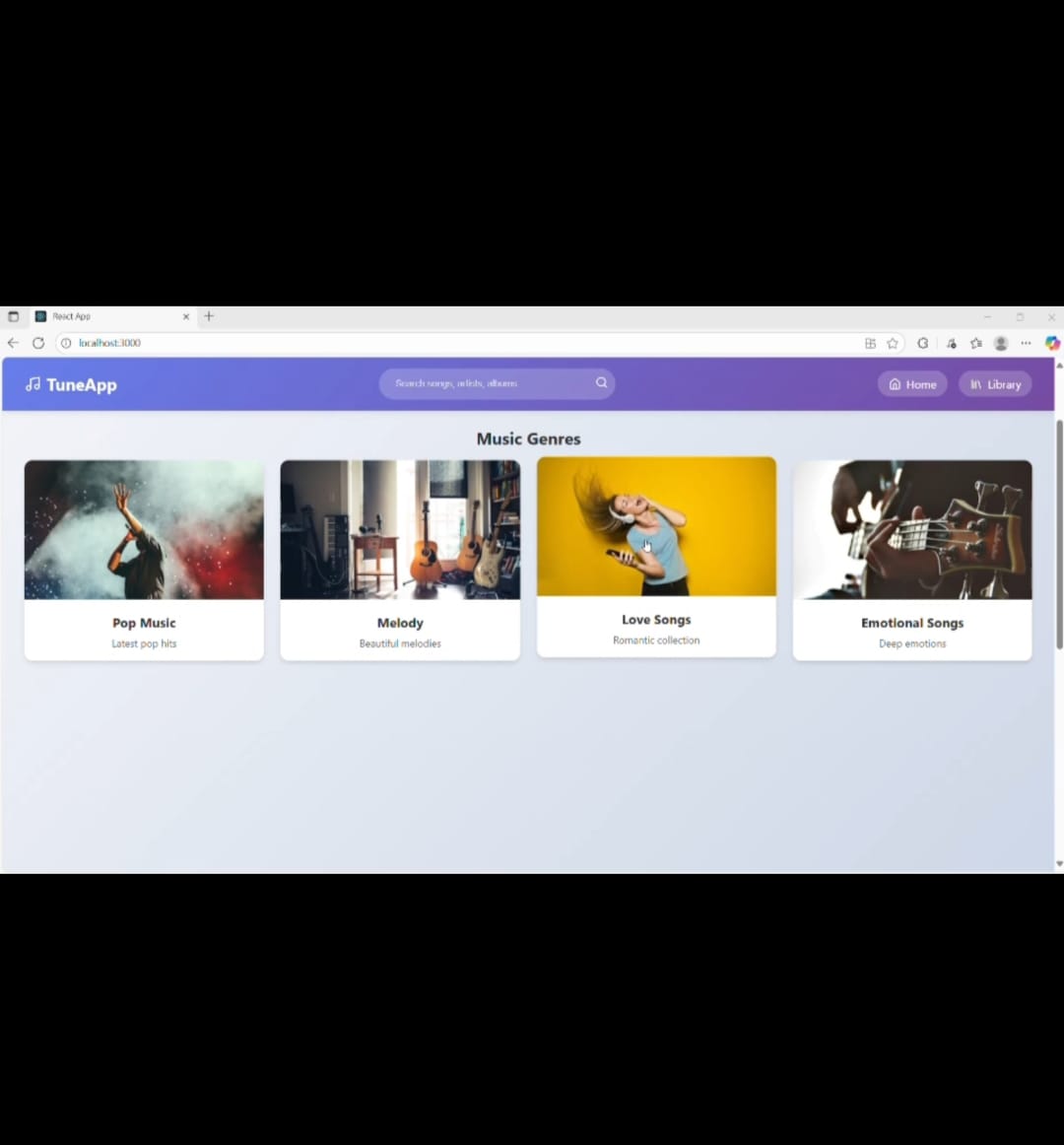
**Testing Strategy:**

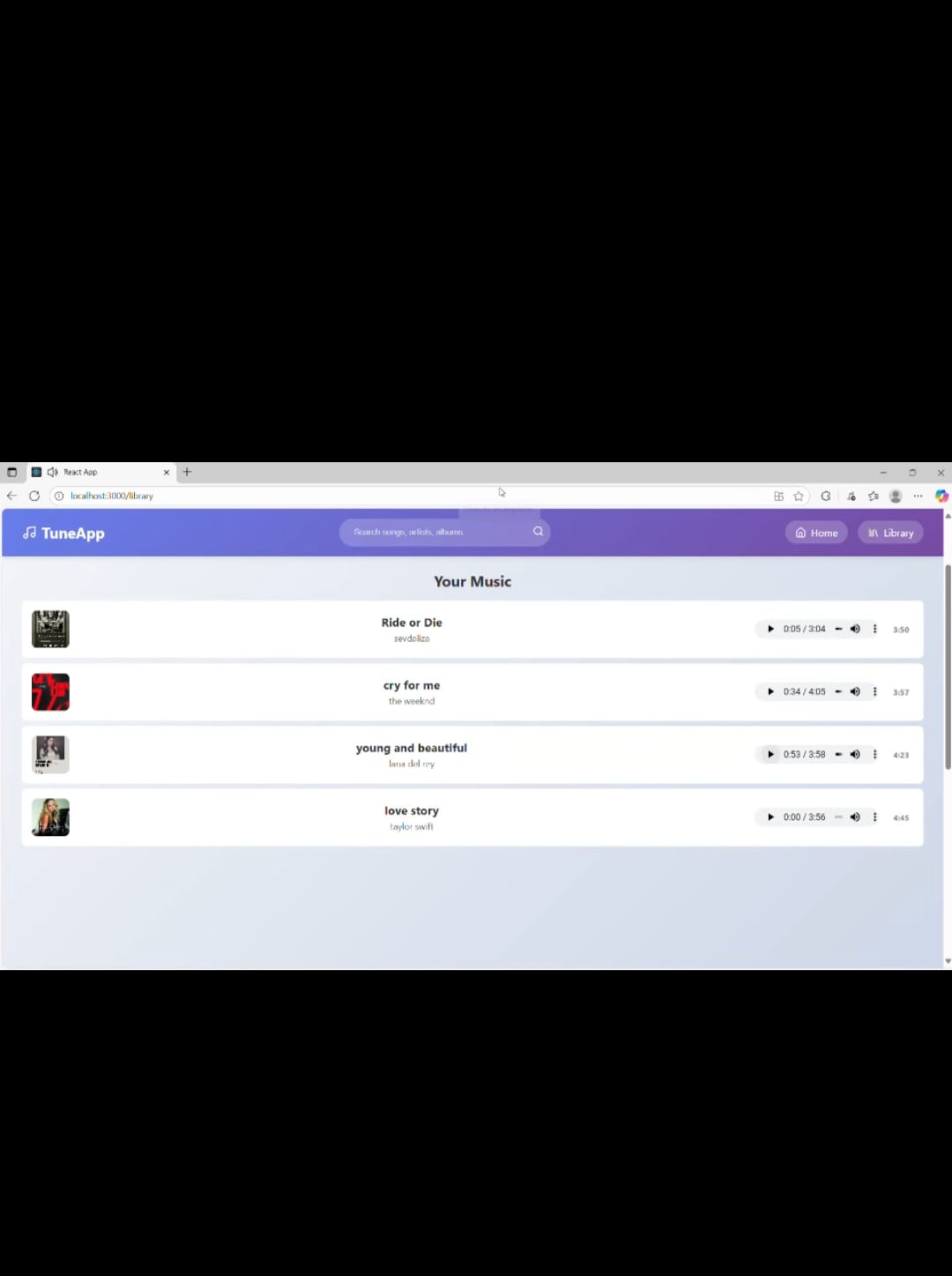
* **Jest for unittesting**
* **React Testing Library for comprehensive component testing**

**Code coverage:**

* **Ensured high code coverage with Jest reports.**

**12. Screenshots or Demo**

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**demo**

**13.known issue**

* **Occasional delays in song loading due to API limits**
* **Playlist feature may require additional optimization for large data sets**

**14. Future Enhancements**

* **Implemented user Authentication for personalized playlists**
* **Introduce Podcast and Radio Streaming Integration**
* **Social Sharing Feature for tracks and playlists**
* **Offline Mode for saved playlists without and internet connection**