RYTHMIC TUNES

Project Documentation

Introduction

- **Project Title**: RYTHMIC TUNES

Team Members

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1. **Project Overview**
   - **Purpose**
   - The primary purpose of this music application is to provide users with a comprehensive and engaging platform for discovering, listening to, and sharing music. The app aims to achieve the following objectives:
   - **Music Discovery**: To help users discover new artists, genres, and songs tailored to their personal tastes through accurate playlists, recommendations, and trending music features.
   - **Seamless Listening Experience**: To offer a high-quality audio playback experience with an intuitive music player that allows users to easily navigate their music library, create playlists, and enjoy their favourite tracks without interruptions.
   - **Social Interaction**: To foster a community of music lovers by enabling users to share their playlists, follow friends, and engage with others through social media integration, thereby enhancing the overall music experience.
   - **Personalization**: To provide personalized music recommendations based on users' listening habits, preferences, and interactions within the app, ensuring that each user feels a unique connection to the music they love.
   - **Accessibility**: To ensure that users can access their music library anytime and anywhere, whether they are using a mobile device or a web browser, making music an integral part of their daily lives.
   - **User Empowerment**: To empower users to take control of their music experience by allowing them to create, manage, and share their playlists, thus encouraging creativity and self-expression through music.

- **Offline Listening**: To provide users with the option to download their favorite songs and playlists for offline listening, ensuring that they can enjoy music without needing an internet connection.
- **User Engagement**: To keep users engaged through features like music quizzes, challenges, and interactive content that encourages exploration and interaction with the app.
- **Artist Support**: To create a platform that supports emerging and independent artists by providing them with a space to showcase their music and connect with fans, thereby promoting diversity in the music industry.

- **Features**:

Song Listings: Display a comprehensive list of available songs with details such as title, artist, genre, and release date.

Playlist Creation: Empower users to create personalized playlists, adding and organizing songs based on their preferences.

Playback Control: Implement seamless playback control features, allowing users to play, pause, skip, and adjust volume during music playback.

Offline Listening: Allow users to download songs for offline listening, enhancing the app's accessibility and convenience.

Search Functionality: Implement a robust search feature for users to easily find specific songs, artists, or albums within the app.

1. **Architecture**
   - **Component Structure**:
   - Here are some components for developing a frontend application using React.js:

Node.js and npm:

Node.js is a powerful JavaScript runtime environment that allows you to run JavaScript code on the local environment. It provides a scalable and efficient platform for building network applications.

Install Node.js and npm on your development machine, as they are required to run JavaScript on the server-side.

● Download: https://nodejs.org/en/download/

● Installation instructions: https://nodejs.org/en/download/package-manager/

React.js:

React.js is a popular JavaScript library for building user interfaces. It enables developers to create interactive and reusable UI components, making it easier to build dynamic and responsive web applications.

Install React.js, a JavaScript library for building user interfaces.

● Create a new React app:

npm create vite@latest

Enter and then type project-name and select preferred frameworks and then enter

● Navigate to the project directory:

cd project-name

npm install

● Running the React App:

With the React app created, you can now start the development server and see your React application in action.

● Start the development server:

npm run dev

This command launches the development server, and you can access your React app at http://localhost:5173 in your web browser.

- HTML, CSS, and JavaScript: Basic knowledge of HTML for creating the structure of your app, CSS for styling, and JavaScript for client-side interactivity is essential.
- Version Control: Use Git for version control, enabling collaboration and tracking changes throughout the development process. Platforms like GitHub or Bitbucket can host your repository.

Routing:

1. **Overview of Routing**

Routing allows users to navigate between different parts of the application without reloading the page.

It helps in creating a single-page application (SPA) experience, where different views are rendered based on the URL.

1. **Key Routes**

Here are some common routes you might implement in a music application:

Home Route (/)

Displays featured playlists, trending songs, and recommended artists.

Search Route (/search)

Provides a search interface for users to find songs, artists, and albums.

Library Route (/library)

Shows the user's music library, including their songs, albums, and playlists.

Playlist Route (/playlist/:id)

Displays a specific playlist based on the playlist ID in the URL.

Song Route (/song/:id)

Shows detailed information about a specific song, including playback options.

User Profile Route (/profile)

Displays the user's profile, including their playlists and listening history.

Settings Route (/settings)

Allows users to manage their account settings and preferences.

1. **Setting Up Routing in React**

4. Dynamic Routing

Use dynamic routing to handle routes that require parameters, such as playlist or song IDs.

For example, the route /playlist/:id allows you to access a specific playlist based on its ID.

5. Navigation Links

Implement navigation links to allow users to navigate between different routes easily. You can use the Link component from React Router:

```jsx
import { Link } from 'react-router-dom';

const Navigation = () => {
  return (
    <nav>
      <ul>
        <li><Link to="/">Home</Link></li>
        <li><Link to="/search">Search</Link></li>
        <li><Link to="/library">Library</Link></li>
        <li><Link to="/profile">Profile</Link></li>
        <li><Link to="/settings">Settings</Link></li>
      </ul>
    </nav>
  );
};
```

6. Handling Not Found Routes

Implement a catch-all route to handle 404 errors for undefined routes:

```jsx
<Route path="*" element={<NotFound />} />
```

1. **Setup Instructions**

● Installation of required tools:

Open the project folder to install necessary tools.In this project, we use:

- React Js
- React Router Dom

- React Icons
- Bootsrap/tailwind css
- Axios

● For further reference, use the following resources

- https://react-bootstrap-v4.netlify.app/getting-started/introduction/
- https://axios-http.com/docs/intro
- https://reactrouter.com/en/main/start/tutorial

●Setup React Application:

• Create React application.

• Configure Routing.

• Install required libraries.

Setting Up Routes:-

```
import 'bootstrap/dist/css/bootstrap.min.css';
import './App.css'
import { BrowserRouter,Routes,Route } from 'react-router-dom'
import Songs from './
import Sidebar from '
import Favorities fro
import Playlist from './Components/Playlist';

function App() {

  return (
    <div  >
     <BrowserRouter>
     <div>
     <Sidebar/>
     </div>
            <div>
            <Routes>
              <Route path='/' element={<Songs/>} />
              <Route path='/favorities' element={<Favorities/>} />
              <Route path='/playlist' element={<Playlist/>} />
            </Routes>
            </div>
        </BrowserRouter>
    </div>
  )
}

export default App
```

module "c:/Users/arsha/OneDrive/Desktop/MY PROJECTS/Music-Player(Frontend)/src/Components/Playlist"

Code Description:-

● Imports Bootstrap CSS (bootstrap/dist/css /bootstrap.min.css) for styling components.

● Imports custom CSS (./App.css) for additional styling.

● Imports BrowserRouter, Routes, and Route from react-router-dom for setting up

client-side routing in the application.

● Defines the App functional component that serves as the root component of the

application.

● Uses BrowserRouter as the router container to enable routing functionality.

● Includes a div as the root container for the application.

● Within BrowserRouter, wraps components inside two div containers:

*The first div contains the Sidebar component, likely serving navigation or additional content.

*The second div contains the Routes component from React Router, which handles rendering components based on the current route.

*Inside Routes, defines several Route components:

● Route with path='/' renders the Songs component when the root

path is accessed (/).

● Route with path='/favorities' renders the Favorities component

when the /favorities path is accessed.

● Route with path='/playlist' renders the Playlist component when the

/playlist path is accessed.

● Exports the App component as the default export, making it available for use in

other parts of the application.

Fetching Songs:-

1.Two Two

2.Chaleya

3.Humnava Mere

4.Saari Duniya Jalaa Denge

5.kissik

6.Mattikinaru Mattikinaru

7.Kannadi prove

Code Description:-

● useState:

●items: Holds an array of all items fetched from

http://localhost:3000/items.

● wishlist: Stores items marked as favorites fetched from http://localhost:3000/favorities.

● playlist: Stores items added to the playlist fetched from http://localhost:3000/playlist.

● currentlyPlaying: Keeps track of the currently playing audio element.

●searchTerm: Stores the current search term entered by the user.

● Data Fetching:

●Uses useEffect to fetch data:

▪ Fetches all items (items) from http://localhost:3000/items.

▪ Fetches favorite items (wishlist) from http://localhost:3000/favorities.

▪ Fetches playlist items (playlist) from http://localhost:3000/playlist.

●Sets state variables (items, wishlist, playlist) based on the fetched data.

● Audio Playback Management:

● Sets up audio play event listeners and cleanup for each item:

▪ handleAudioPlay: Manages audio playback by pausing the currently playing audio when a new one starts.

▪ handlePlay: Adds event listeners to each audio element to trigger handleAudioPlay.

●Ensures that only one audio element plays at a time by pausing others when a new one starts playing.

● addToWishlist(itemId):

● Adds an item to the wishlist (favorities) by making a POST request to http://localhost:3000/favorities.

● Updates the wishlist state after adding an item.

● removeFromWishlist(itemId):

●Removes an item from the wishlist (favorities) by making a DELETE request to http://localhost:3000/favorities/{itemId}.

●Updates the wishlist state after removing an item.

● isItemInWishlist(itemId):

● Checks if an item exists in the wishlist (favorities) based on its itemId.

● addToPlaylist(itemId):

●Adds an item to the playlist (playlist) by making a POST request to http://localhost:3000/playlist.

●Updates the playlist state after adding an item.

● removeFromPlaylist(itemId):

●Removes an item from the playlist (playlist) by making a DELETE request to http://localhost:3000/playlist/{itemId}.

●Updates the playlist state after removing an item.

● isItemInPlaylist(itemId):

●Checks if an item exists in the playlist (playlist) based on its itemId.

● filteredItems:

● Filters items based on the searchTerm.

● Matches title, singer, or genre with the lowercase version of searchTerm.

● JSX:

● Renders a form with an input field (Form, InputGroup, Button, FaSearch) for searching items.

●Maps over filteredItems to render each item in the UI.

● Includes buttons (FaHeart, FaRegHeart) to add/remove items from wishlist and playlist.

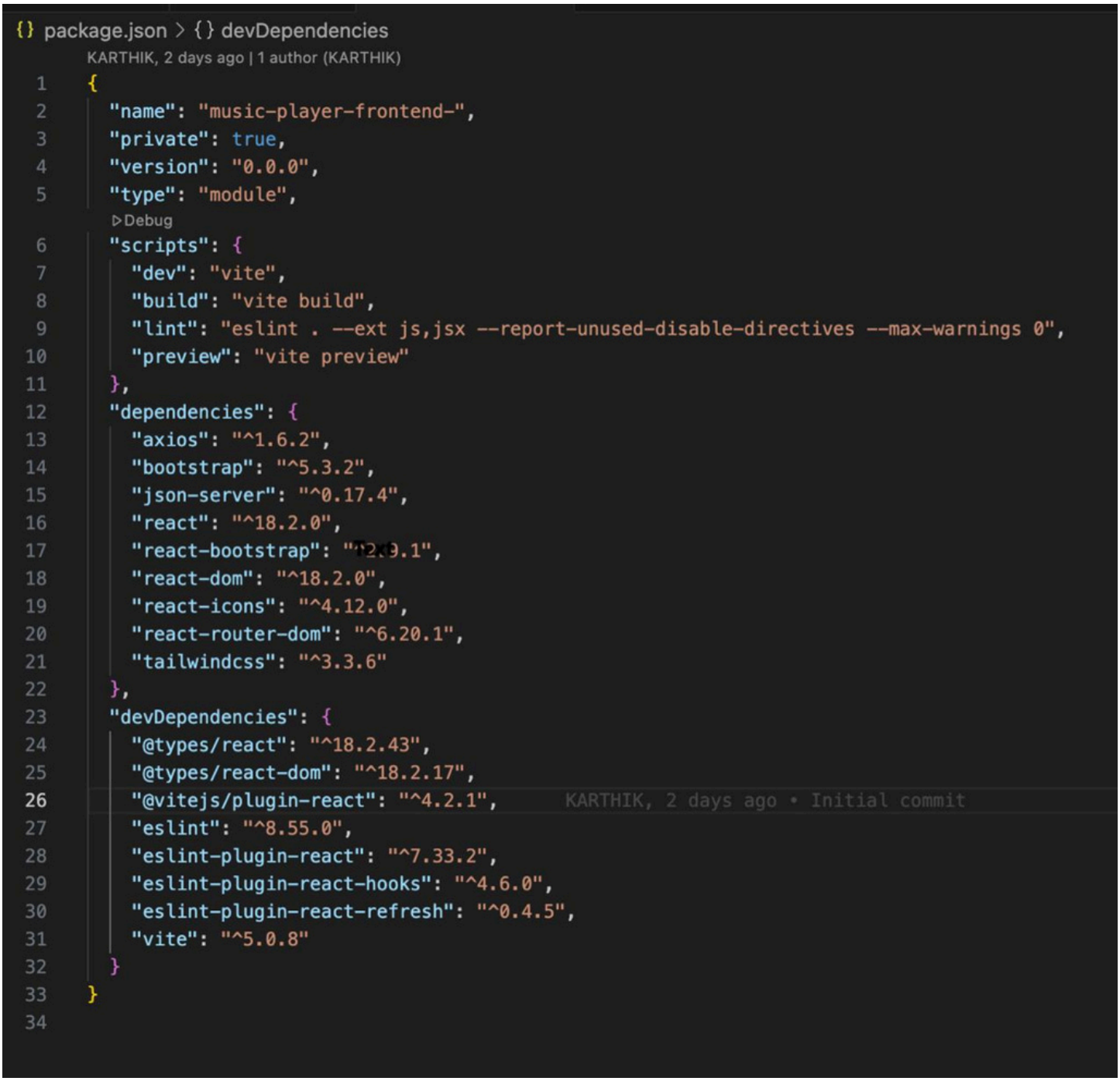
● Renders audio elements for each item with play/pause functionality.

● Error Handling:

●Catches and logs errors during data fetching (axios.get).

●Handles errors when adding/removing items from wishlist and playlist.

Frontend Code For Displaying Songs:-



Code Description:-

- Container Setup:
- Uses a div with inline styles (style={{display:"flex", justifyContent:"flex-end"}}) to align the content to the right.
- The main container (songs-container) has a fixed width (width:"1300px") and contains all the UI elements related to songs.
- Header:
- Displays a heading (<h2>) with text "Songs List" centered

(className="text-3xl font-semibold mb-4 text-center").

- Search Input:
- Utilizes InputGroup from React Bootstrap for the search functionality.
- Includes an input field (Form.Control) that allows users to search by singer, genre, or song name.
- Binds the input field value to searchTerm state (value={searchTerm}) and updates it on change (onChange={(e) => setSearchTerm(e.target.value)}).
- Styled with className="search-input".
- Card Layout:
- Uses Bootstrap grid classes (row, col) to create a responsive card layout (className="row row-cols-1 row-cols-md-2 row-cols-lg-3 row-cols-xl-4 g-4").
- Maps over filteredItems array and renders each item as a Bootstrap card ( ).
- Card Content:
- Displays the item's image (<img>), title (<h5 className="card-title">), genre (<p className="card-text">), and singer (<p className="card-text">).
- Includes an audio player (<audio controls className="w-100" id={audio-${item.id}}>) for playing the song with a source (<source src={item.songUrl} />).
- Wishlist and Playlist Buttons:
- Adds a heart icon button (<Button>) to add or remove items from the wishlist (isItemInWishlist(item.id) determines which button to show).
- Includes an "Add to Playlist" or "Remove From Playlist" button (<Button>) based on whether the item is already in the playlist (isItemInPlaylist(item.id)).
- Button Click Handlers:
- Handles adding/removing items from the wishlist (addToWishlist(item.id), removeFromWishlist(item.id)).

• Manages adding/removing items from the playlist

(addToPlaylist(item.id), removeFromPlaylist(item.id)).

• Card Styling:

• Applies Bootstrap classes (card, card-body, card-footer) for styling the

card components.

• Uses custom styles (rounded-top, w-100) for specific elements like images

and audio players.

Project Execution:

•After completing the code, run the react application by using the command “npm start” or

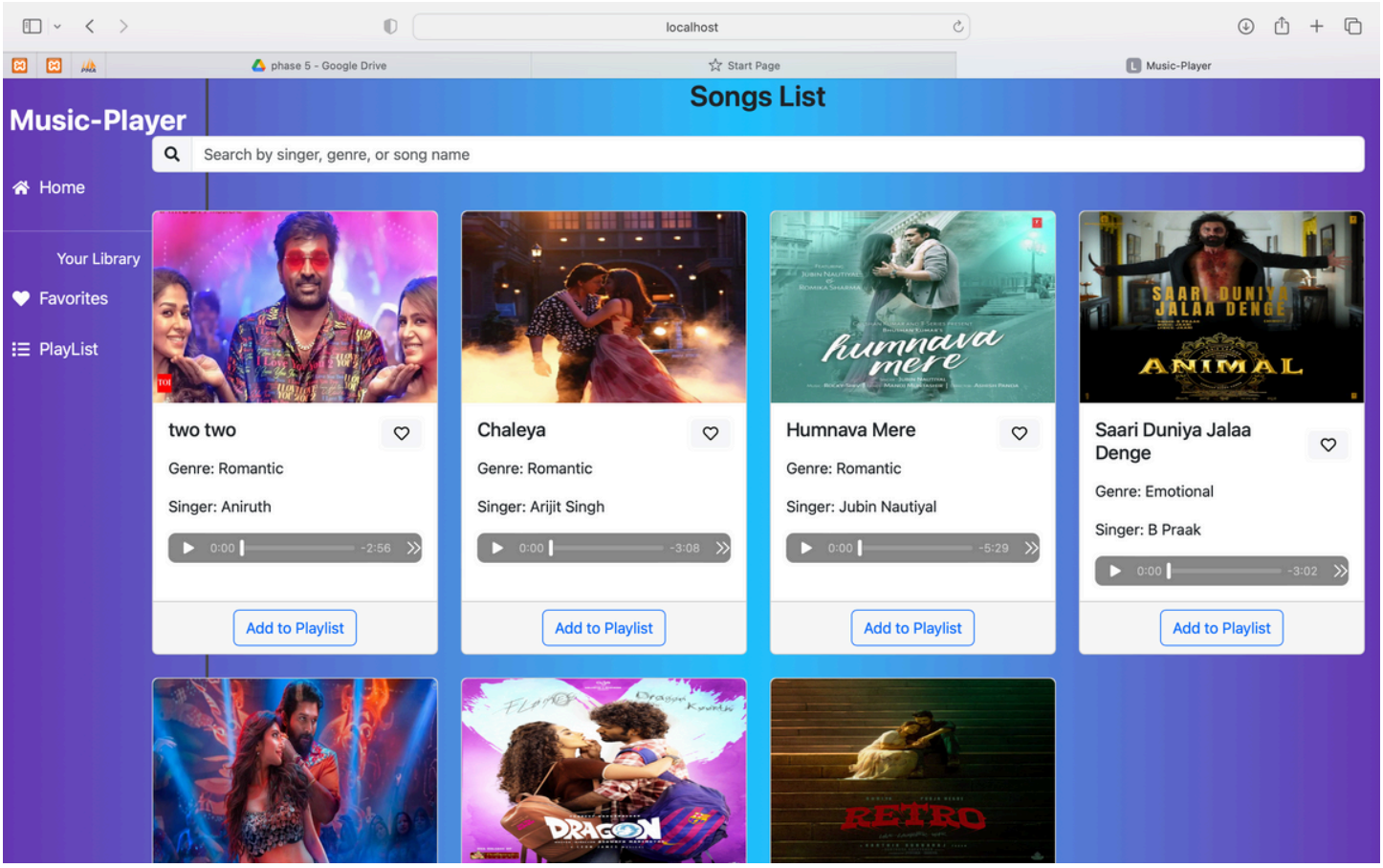
“npm run dev” if you are using vite.js

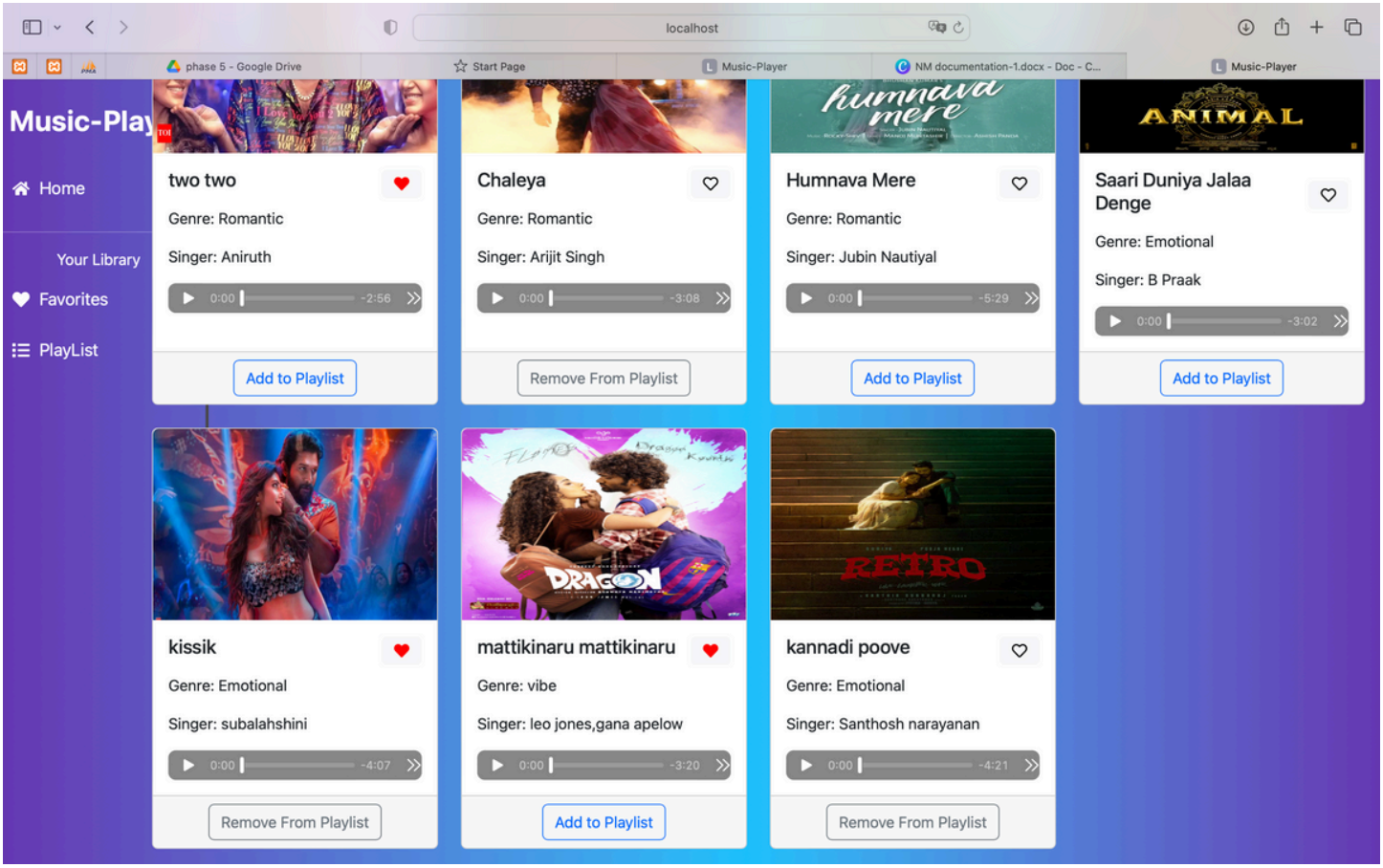
•And the Open new Terminal type this command “json-server --watch ./db/db.json” to start the json server too.

•After that launch the Rythimic Tunes.

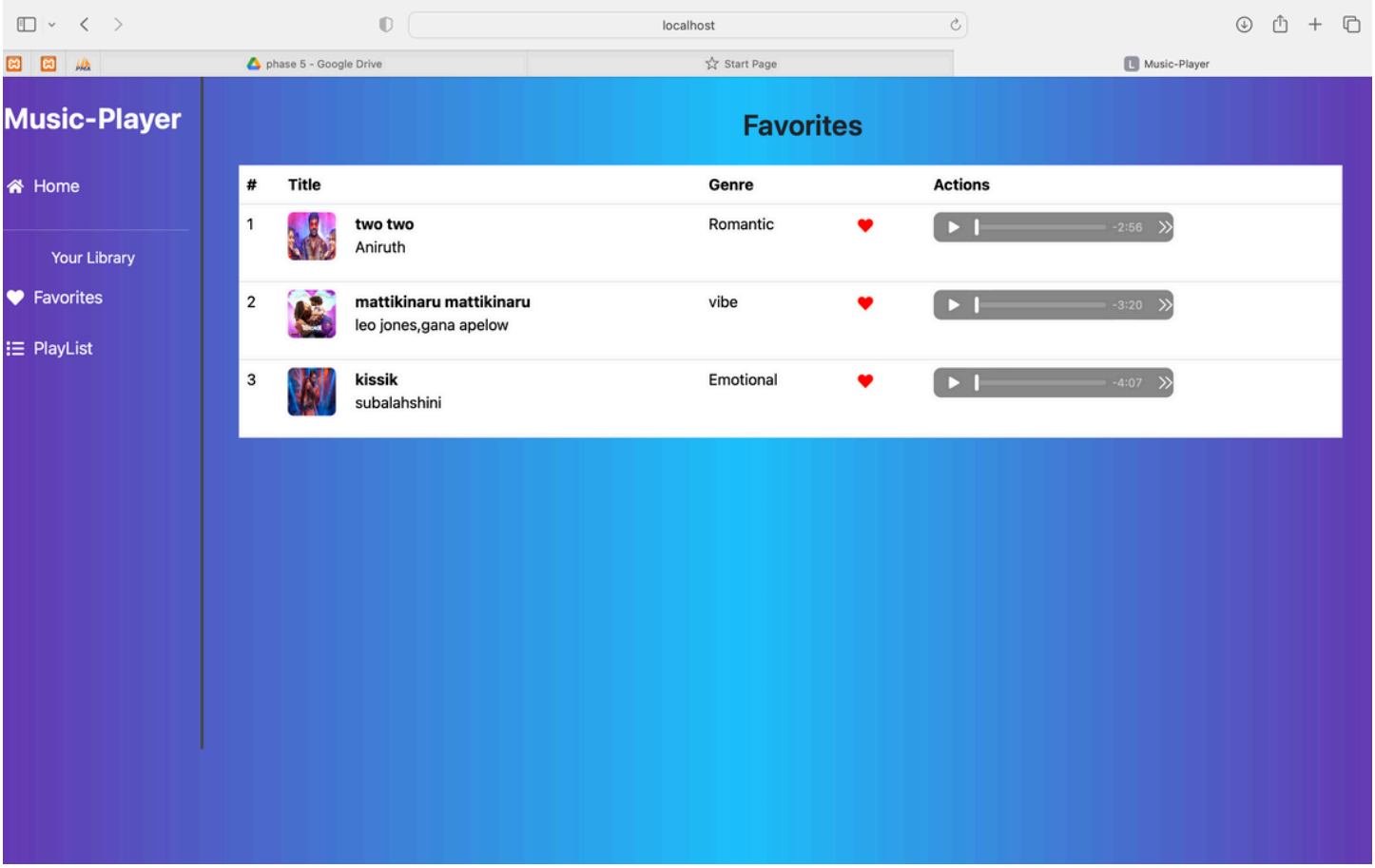
Here are some of the screenshots of the application.

Hero components :

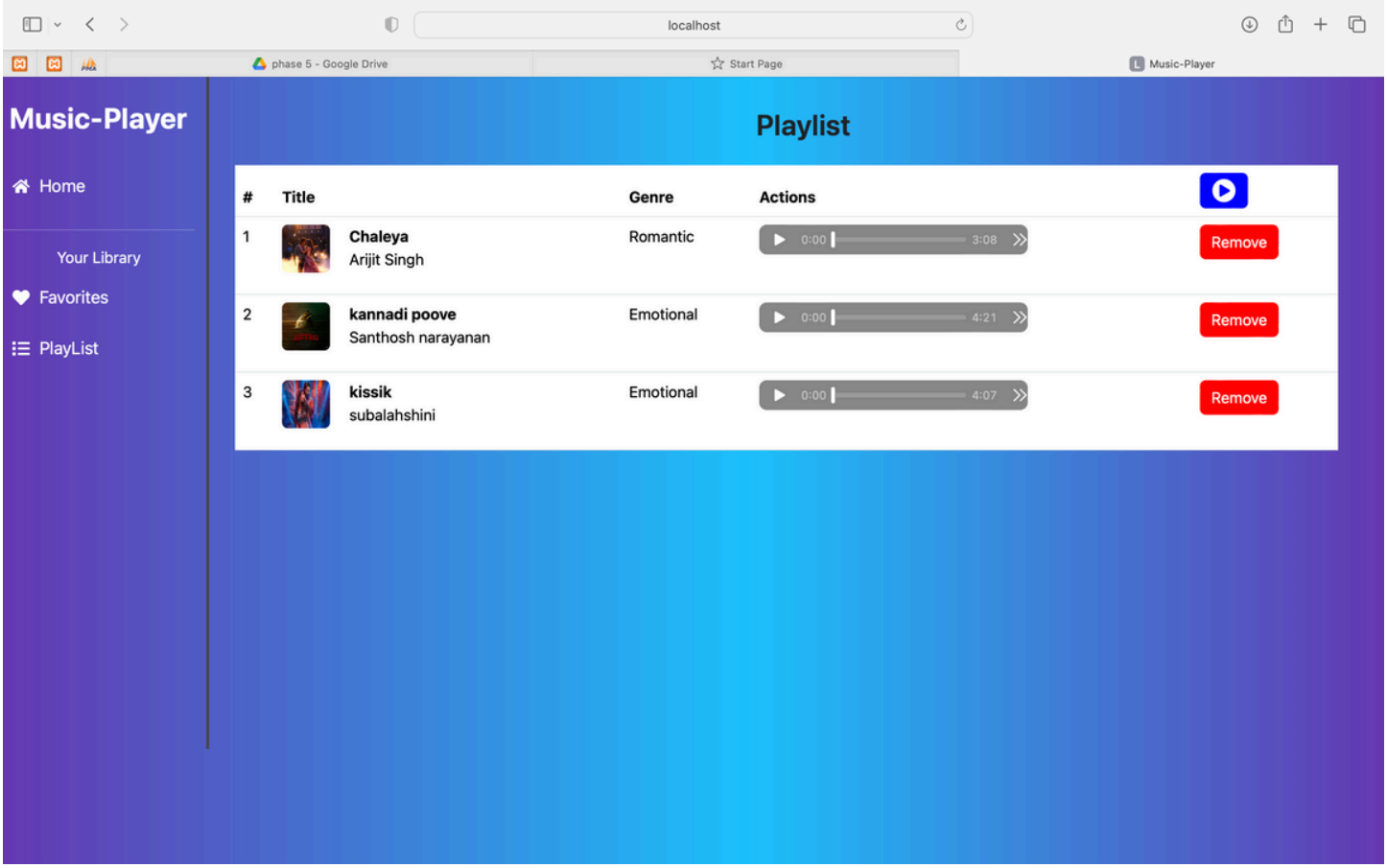



localhost
phase 5 - Google Drive
Start Page
Music-Player
NM documentation-1.docx - Doc - C...
Music-Player
Music-Play
Home
Your Library
Favorites
PlayList
two two
Genre: Romantic
Singer: Aniruth
0:00
-2:56
Add to Playlist
Chaleya
Genre: Romantic
Singer: Arijit Singh
0:00
-3:08
Remove From Playlist
Humnava Mere
Genre: Romantic
Singer: Jubin Nautiyal
0:00
-5:29
Add to Playlist
Saari Duniya Jalaa Denge
Genre: Emotional
Singer: B Praak
0:00
-3:02
Add to Playlist
kissik
Genre: Emotional
Singer: subalahshini
0:00
-4:07
Remove From Playlist
mattikinaru mattikinaru
Genre: vibe
Singer: leo jones,gana apelow
0:00
-3:20
Add to Playlist
kannadi poove
Genre: Emotional
Singer: Santhosh narayanan
0:00
-4:21
Remove From Playlist

Favourites :


localhost
phase 5 - Google Drive
Start Page
Music-Player
Music-Player
Home
Your Library
Favorites
PlayList
Favorites
Title Genre Actions
1 two two Aniruth Romantic -2:56
2 mattikinaru mattikinaru leo jones,gana apelow vibe -3:20
3 kissik subalahshini Emotional -4:07

Playlist :



Demo link:https://drive.google.com/drive/folders/1tsWvxphZh-qwtBjAH98bMW0n13aJBeJP?usp=share_link

Source code drive link:https://drive.google.com/drive/folders/1tsWvxphZh-qwtBjAH98bMW0n13aJBeJP?usp=share_link