

## Rhythmic Tunes - The Music Streaming App

### Team Members:

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### Project Overview:

#### Purpose:

Rhythmic Tunes is a music streaming app designed to provide users with a seamless and personalized music experience. It allows users to explore, play, and manage their favorite songs with ease, offering curated playlists, artist recommendations, and real-time streaming.

#### Features:

The front-end of the music streaming app includes user-friendly navigation, audio playback controls, playlist management, song recommendations, search functionality, and real-time streaming.

### Architecture:

#### Component Structure:

React components are used to build the user interface, structured as functional or class-based components. They interact through props (data passed down) and state (data managed within a component).

#### State Management:

State management is handled using React's Context API for global state and Firebase for backend services. This ensures smooth data flow and real-time updates.

#### Routing:

Rhythmic Tunes uses React Router for navigation between different views, such as the home page, playlist page, artist details, and settings, ensuring a seamless user experience.

### Prerequisites:

Ensure you have the following installed before starting development:

### Node.js:

Ensure you have Node.js installed on your system. You can download it from the official website.

### Package Manager:

Use npm or yarn as the package manager for installing dependencies.

### Using Create-React-App:

1. Open your terminal or command prompt.
2. Run ``npx create-react-app rhythmic-tunes`` (replace 'rhythmic-tunes' with your desired project name).
3. This command will set up the project structure and install dependencies.

### Using Vite:

1. Open your terminal or command prompt.
2. Run ``npm create vite@latest rhythmic-tunes`` (replace 'rhythmic-tunes' with your desired project name).
3. Choose 'React' as the framework and TypeScript if needed.
4. Navigate to the project directory using ``cd rhythmic-tunes``.
5. Install dependencies using ``npm install``.

### Folder Structure:

1. Open the terminal and navigate to the directory where you want to create the project.
2. Create the project using ``npx create-react-app rhythmic-tunes`` or ``npm create vite@latest rhythmic-tunes``.
3. Enter the project folder using ``cd rhythmic-tunes``.
4. Install the required dependencies using ``npm install``.
5. Run ``git init`` to initialize Git in the project and create a ``.gitignore`` file.
6. Create a `README.md` file to document project details.
7. Create an ``.env`` file to store sensitive credentials.
8. Structure the project with ``components`` (for reusable UI elements) and ``pages`` (for full-page layouts).

### Utilities:

Rhythmic Tunes utilizes helper functions, utility classes, and custom hooks to optimize code structure, making the app efficient and maintainable.