**FRONTEND DEVELOPMENT WITH REACT.JS**

**PHASE 1: INTRODUCTION**

**Project Title:**

* *Rythmic Tunes - Your Melodic Companion (Music Streaming)*

**Team Members:**

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**PHASE 2: PROJECT OVERVIEW**

**Purpose:**

RythmicTunes is an interactive web application designed to deliver an engaging music streaming experience. It allows users to play songs seamlessly, create personalized playlists, and manage their favorite tracks effortlessly.

**Key Features:**

* **Song Playback:** Users can play a variety of songs directly on the platform.
* **Favorites List:** Users can save and quickly access their favorite tracks.
* **Personalized Playlists:** Users can create, customize, and manage their own playlists based on preferences and moods.

**PHASE 3: ARCHITECTURE DESIGN**

**Component Structure:**

* **SongList:** Displays a list of available songs.
* **Playlists:** Manages and displays user playlists.
* **Favorites:** Shows the user's favorite songs.

**State Management:**

* **Global State:** Managed using React’s Context API.
* **Local State:** Managed using the useState hook.

**Routing:**

* React Router is used to enable smooth navigation within the application.

**PHASE 4: SETUP & INSTALLATION**

**Pre-requisites:**

* Node.js, VS Code

**Installation Steps:**

1. Install Node.js and VS Code on the local machine.
2. Navigate to the project directory in the terminal.
3. Run npm install to install dependencies.
4. Start the development server using npm start.

**PHASE 5: FOLDER STRUCTURE**

**Client-Side Structure:**

* **Components:** Contains all React components.
* **Pages:** Includes different pages of the application.
* **Assets:** Stores static files like images and stylesheets.
* **Utilities:** Houses custom hooks and utility functions.

**PHASE 6: APPLICATION EXECUTION**

To run the frontend server locally, use:

npm start

**Commands Used:**

cd db

npm install npx

npx json-server --watch db.json

npm i

npm run dev

**PHASE 7: COMPONENT DOCUMENTATION**

**Key Components:**

* **SongList:** Renders a list of songs and handles playback.
* **Playlists:** Manages playlist creation, deletion, and display.
* **Favorites:** Displays and manages the user’s favorite songs.
* **Reusable Components:** Includes SongCard and Button for reusability.

**PHASE 8: USER INTERFACE DESIGN**

The UI is designed to be:

* **Intuitive** with easy navigation.
* **Visually appealing** with clear playback and playlist management features.

**CSS & Styling:**

* **Framework:** Material-UI for a responsive design.
* **Custom Themes:** Implemented for branding consistency.

**PHASE 9: TESTING**

**Testing Strategy:**

* **Jest & React Testing Library** for unit and integration testing.
* **Code Coverage:** Ensuring high test coverage for quality maintenance.

**Known Issues:**

Currently, there are no significant issues. Minor performance optimizations will be addressed in future updates.

**PHASE 10: FUTURE ENHANCEMENTS**

To improve user experience, future updates will include:

* **AI-driven Music Recommendations** based on user preferences.
* **Offline Mode** for playing downloaded tracks without an internet connection.
* **Social Sharing Features** for sharing playlists and songs.
* **Multi-Device Synchronization** for seamless playback across devices.
* **Lyrics Display** for real-time lyrics integration.
* **Dark Mode** for better user experience in low-light environments.
* **Live Streaming & Radio Integration** for broader music content.
* **User-Curated Public Playlists** to allow community-driven music discovery.

**PHASE 11: DEPLOYMENT & MAINTENANCE**

**Deployment Steps:**

1. Choose a hosting platform (Netlify or Vercel).
2. Build the production version:

npm run build

1. Deploy and obtain a live URL.

**Maintenance & Bug Fixes:**

* Track known issues.
* Plan new features and updates.