INDY-7 Spotify Music Suggestions

SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

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1.0 Introduction

1.1 Overview
A mobile app implemented with JavaScript using React Native that can receive data from a user and view their playlist contents. The app will then be able to parse Spotify's database of music and suggest music tracks based off the content in a playlist.

1.2 Project Goals
- Develop a mobile application using React-Native for both iOS and Android.
- Access the user's Spotify account through integration of the Spotify API into the implemented mobile app.
- Implement a search algorithm which recommends songs for individual playlists of the user

1.3 Definitions and Acronyms
API: application programming interface.

MD: metadata

DB: database

RN: React Native

JSON: JavaScript Object Notation. Open standard file format.

1.4 Assumptions
The user must own a mobile device capable of an internet connection. The user must own a Spotify account.

2.0 Design Constraints
Hardware Constraints

User must have:

- Smartphone
- internet connection on smartphone device
- Spotify account

Software Constraints

- Apple users must have iOS 14 or above.
- Android users must have Android OS 5.0 or above.
- The user will be unable to add songs to their Spotify playlist if the Spotify Server is down.

UI Design

- Spotify Design requirements:
  - Only artwork provided by Spotify can used in association with songs displayed from the Spotify DB

- o All artworks must be kept in its original form.
- o Character count accommodations required by Spotify:
  - ▪ Playlist: 25
  - ▪ Artist name: 18
  - ▪ Track name: 23
- o Use of Spotify logo has specific requirements. Can be seen here.

2.1 Environment

iOS emulation requires MacOS.

2.3 System

- Usage of the app relies on availability of Spotify service.
- The application will access the user's Spotify account. As such, security will be handled through the authentication process.

3.0 Functional Requirements

Need internet access

(List the design, graphic, and operating system requirements and list any constraints here and assign them numbers like 2.1, 2.2, etc.)

1. Gain access to user's Spotify Account.
   a. Send request for user authorization.
   b. Send request for access token.
   c. Send request for refresh token (when access token expires)
2. Load and display a list of the user's playlists.
   a. Send GET request for list of the user's playlists.
   b. Display list of playlists.
      i. Display playlist cover image.
         1. Send get playlist cover image request.
      ii. Display playlist name.
3. Access each of the user's playlist
   a. Send GET playlist request.
4. Display a list of songs within the user's playlist (PHASE 2).
   a. IMPORTANT
      i. All MD displayed from Spotify MUST link back to the Spotify app.
      ii. If the user does not have the Spotify app installed, links must divert them to the app store to download the app.
   b. Display song name from GET playlist request.
   c. Display artist image from GET playlist request.
5. Output a list of song recommendations for each unique playlist.
   a. Pass MD into recommendation algorithm.
   b. Display returned list of a song names.
6. Add songs from recommendation list to the user's playlist.
   a. Send POST request for chosen song by user using MD.

7. Recommendation Algorithm:
    a. Access MD from each song within given playlist.
    b. Access Spotify song DB
    c. Compare MD of user's playlist songs to MD of Spotify database
    d. Generate list of songs matching MD criteria
8. All songs must link to Spotify app.
    a. Display song name and album artwork of selected song at the top of the page.
    b. Newly displayed song links to the Spotify app.
9. Certain actions are restricted for Spotify free users. In these cases, Spotify *recommends* displaying the message depending on usage of either Android or iOS as follows:
    a. Android premium message: "Spotify Premium lets you play any track, ad-free and with better audio quality. Go to spotify.com/premium to try it for free."
    b. iOS premium message. "Spotify Premium lets you play any track, ad-free and with better audio quality." Link to quote.
10. Play preview of selected song. (PHASE 2).
    a. Get preview URL from returned JSON object.