
Playlist Generator Design Document

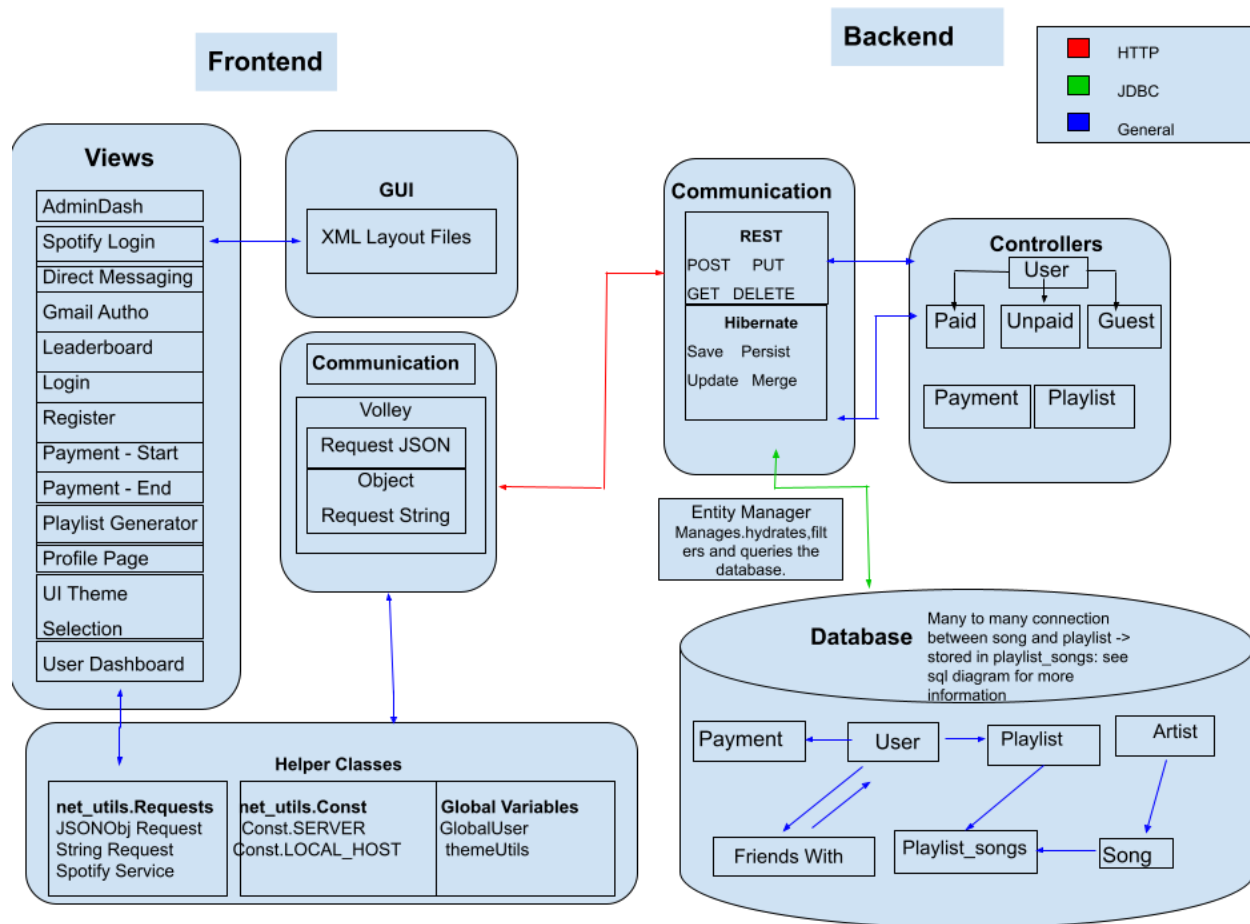
Group SD_325

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Frontend

Spotify Service

- Allows a user to search for a song or artist to generate a similar playlist. Connects to the SpotifyAPI search endpoint through android volley and retrieves the top few results. Sends information (type: song/artist, query: spotifyID, username, length of playlist) to playlist generator end point (uses implicit grant auth, as we are only accessing public information).

SpotifyAPI Auth (Spotify Login on Block Diagram)

- Utilizes OAuth2 to log a user into their personal Spotify account. Prompts users to give our app access to update, modify, and create playlists within their account.
- Activity uses a code generation and verifier method to include with Spotify code grant. This code is then exchanged for a token, which is then used as authorization to create a playlist within the users' account.

UIThemes and Profile Pictures

- Allows users to customize the look of their app, and stores this information with their user account on the backend so preferences may be loaded up as soon as they log in.
- Utilizes the themeUtils class to refresh an activity with the users selection (as in Android Studio, themes must be applied before activity is created).
- Lays the groundwork for adding more complex themes.

Gmail Authentication

- On a user registering for our app we ask for their email, in order to assure that it's a valid email, our program will send a security code to their given email.
- It's randomized (not implemented yet) and in order for the user to finish registration, they must correctly enter the security code sent to their email
- This is done through Gmail's smtp port and service

Global User

- Front end keeps track of which user is currently logged in using a global user class
- Tracks username, email, full name, and profile preferences
- When a user has logged in or registered, a call to back end to populate global user is made

Backend

Controllers

Playlist Generator

- Receives type(song/artist), spotify id, username, length of playlist, and playlist name as parameters.
- If the user chose a song, the playlist generator connects to the SpotifyAPI to retrieve the artist and their ID.
- Method then connects to the Similar Artists endpoint from Spotify, grabs every similar artist and pulls every top track.
- Finally, each song is added to an array list, the array list is then shuffled, and the length of the playlist is grabbed from the start of the list.
- Ensures that the user will not receive the same playlist if they run the same song/artist request.

User

- Receives input from front end to either populate a new user profile (registering) or to log an existing user into their account
- Mapped to a playlist using a one to many relationship (one user can have many playlists)
- Includes fields to set or change profile preferences (UITheme, profile page, payments).

