CSC-207 Final Project

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Introduction & Goals

The goal of this project was to create an Android app (built in Java) that would allow a user to integrate their Spotify account and guess the names of songs in a particular genre.

To do this, I planned to:

- Integrate the Spotify Player SDK (authenticated with OAuth)
- Create Activities (Android's equivalent of Java classes) for each of the app's screens.
- Design a GUI to make the user experience enjoyable

I decided to call my app **TuneUp**

Resources Used

- The initial challenge of this project was to learn Android development with Java and Android Studio.
- Since I do not own an Android phone, I tested the app using an Android Emulator (Google Pixel 2 phone).
- The biggest challenge was Spotify API integration
  - For each API call, the app inputs a token (received during authorization) and receives a JSON object that has to be parsed appropriately.
  - For example, to add a song to a user's library, I had to use the API to access a user's currently playing track and then write a method to add that track to the user's Spotify library.
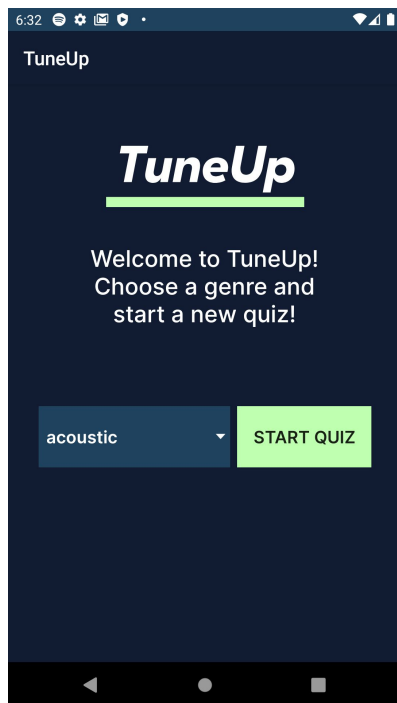
App Flow

1. User opens TuneUp, which performs an API call to receive an authorization token from Spotify
2. Spotify authenticates the session with the user's account information and allows TuneUp to access playback data
3. Using Spotify's recommendation API and a seed genre chosen by the user, TuneUp does the following to initialize a quiz:
   a. Generates four songs and randomly plays one of them
   b. Initializes a timing and scoring system
   c. Verifies the user's guess and displays the correct answer
   d. Adds correct song to the user's Spotify library (API call)
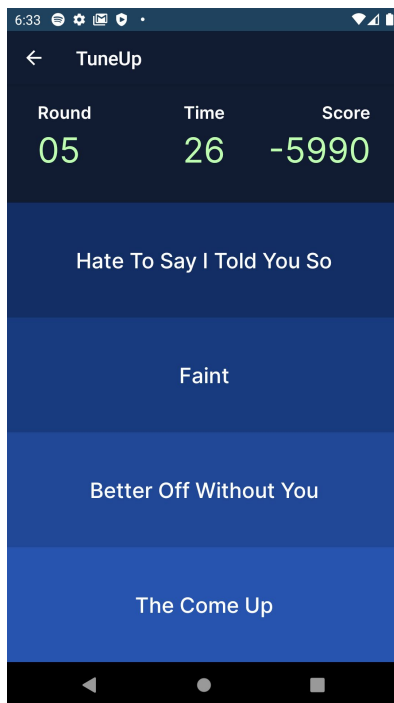   e. Moves to the next round of the quiz

App Organization

- **SplashActivity.java** (class to authenticate with Spotify API)
- **MenuActivity.java** (screen for user to choose a genre and begin quiz)
- **MainActivity.java** (screen to update playback during the quiz)
- **SongService.java** (class to handle API calls for user playback/library)
- **Song.java** (class used to store song data)
- **User.java** (class used to store user details)

Each of the activity screens is linked to a separate XML "layout" file which defines its visual appearance and UX.
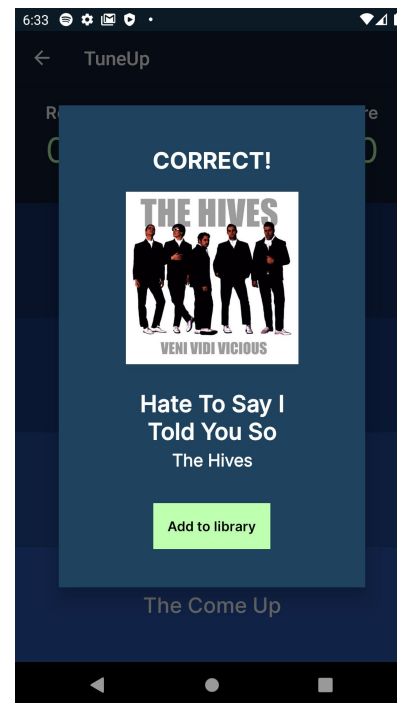
Screenshots (from Android Emulator on Google Pixel 2)

Menu Screen

Quiz Screen

Guess Reveal

Conclusion

View this project on Github:
https://github.com/jeevp/tuneup

Or view a video demonstration of TuneUp in action:
https://drive.google.com/file/d/1Cr9sMPeckgIUKMJUvbpnooIHU
utwZNw_/view?usp=sharing

Thanks for watching!