Spotify Printout Generator

For CS 242
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Introduction: This mobile application allows users to turn their Spotify playlists or albums into paper printouts that they can share with others. Each printout includes the playlist/album cover photo, the names and artists of the first 15 songs on the playlist, and a scannable QR code that links directly to the playlist or album on Spotify.

Prerequisites:
- Python 3.7 or above
- React Native Expo
- Expo Go iOS/Android Application installed on smartphone
- Jest
- Python External Dependencies
  - json
  - PIL
  - flask and flask_cors
  - os
  - requests
  - spotipy
  - qrcode
  - re

Environment Setup:
- Download the project folder and use a terminal to navigate inside
- Run "npm install" to install Node and its dependencies
- Python 3.7 or above must be installed on your machine along with all of the dependency libraries mentioned above
- All files must be downloaded and in the same directory
- In fetchData.js, enter your IPv4 address on line 4 instead of the one currently given
- Run from your command line by running "npm start"
- Scan the QR code on the http://localhost:19002/ page in your browser
- The current build only works on iOS or Android. It does NOT work in Xcode's iOS simulator or Expo's web server
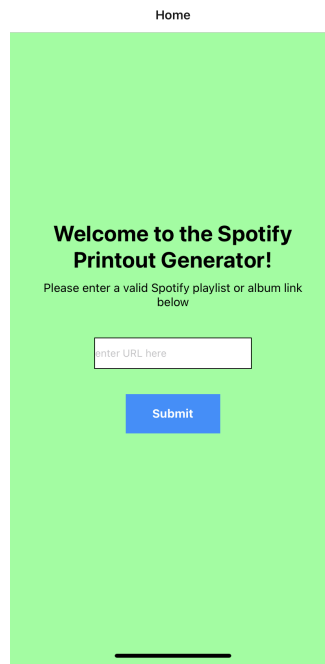
Unit Testing
- Python (in the backend folder)
  - Run fetch_data_unit_tests.py to test Spotify data collection
  - Run printout_creation_unit_tests.py to test printout file generation
  - Each test should print a statement like the following: "example_test PASSED"
- React Native
  - Make sure Jest is installed properly within your project file
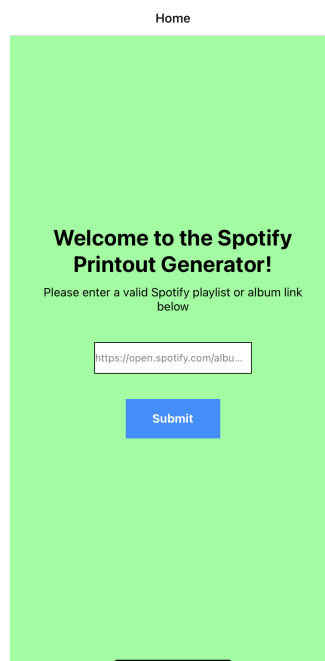 - Run "npm test" to run App.test.js

Using the Program (iOS used as an example):
1. **Entry Screen (home screen)**
   a. When you first open the app, the home screen should look like this

Welcome to the Spotify Printout Generator!

Please enter a valid Spotify playlist or album link below

enter URL here

Submit

   b. Copy a URL from a Spotify playlist or album, paste it into the text box, and press the Submit button

Welcome to the Spotify Printout Generator!

Please enter a valid Spotify playlist or album link below

https://open.spotify.com/albu...

Submit

c. Invalid URLs will reveal this red text prompting the user to enter a valid Spotify playlist or album URL

Welcome to the Spotify Printout Generator!

Please enter a valid Spotify playlist or album link below

The URL you entered is not for a Spotify playlist or album. Please try again.

Invalid

Submit

d. When submitted, a valid URL will generate the printout and move the user to the Preview Screen
   i. NOTES: You may see some refreshes and errors flash across the screen. These are known bugs, but should not hinder app performance

2. **Preview Screen**
   a. When the Preview Screen is loaded, your generated printout should be fully rendered on the page with 2 buttons
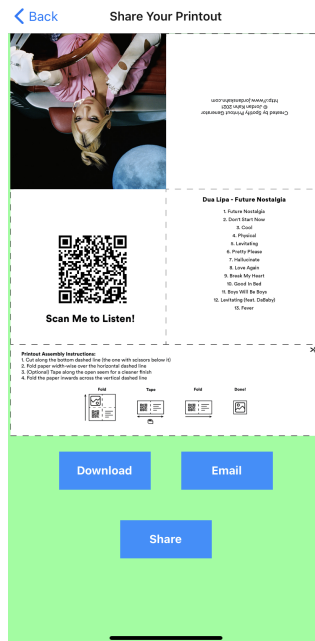

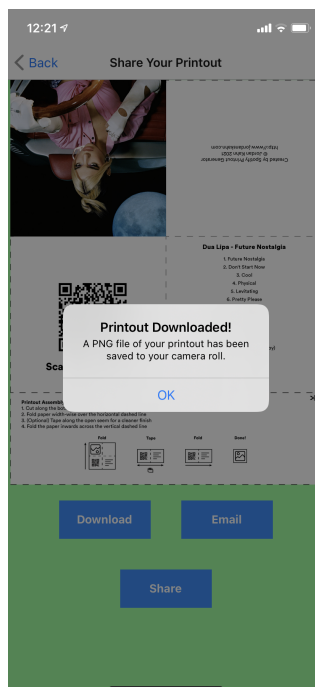   b. Pressing the Flip button should rotate the image 180 degrees with each press

   c. Pressing the Share button will bring you to the Share Screen

3. Share Screen

    a. When the Share Screen loads, the same image should load as well as 3 buttons
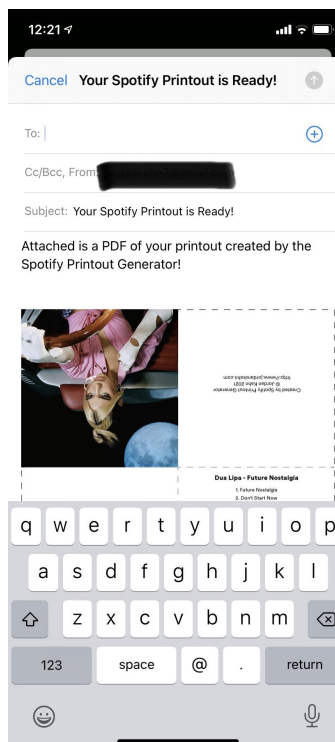

    b. The Download button will save a PNG image of the printout to your photo library and generate a confirmation message

        i. If this is your first time running the app, you will be prompted to allow access to your photos. Please accept this request in order for it to work
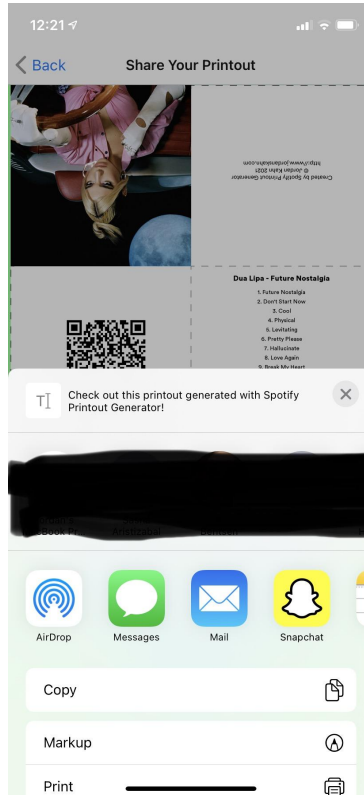
c. The Email button will open an email dialog box with a pre-written message, subject, and an attached PDF of your printout

d. The Share button will open the multi-option share panel where you can share a PDF of your printout in many different ways (contacts have been blocked out for privacy reasons)

Known Bugs and Shortcomings:
- Web
  - This current build of the app does not work on web. There is an issue with the fetch requests completely reloading the app, so it cannot navigate past the Entry Screen for more than a few seconds without going backwards.
- iOS Simulator (XCode)
  - For unknown reasons, it is currently impossible to copy and paste into the input box on the Entry Screen. This may work on other machines, so feel free to try it out for yourself
  - The Email button on the Share Screen will not work on iOS simulator. Pressing it will break the program
- General
  - Sometimes the album/playlist cover art is rendered off-center on the printout image. This has been debugged and the current best answer for why this happens is some of Spotify's cover images are saved in different formats. However, there is no way to confirm this