

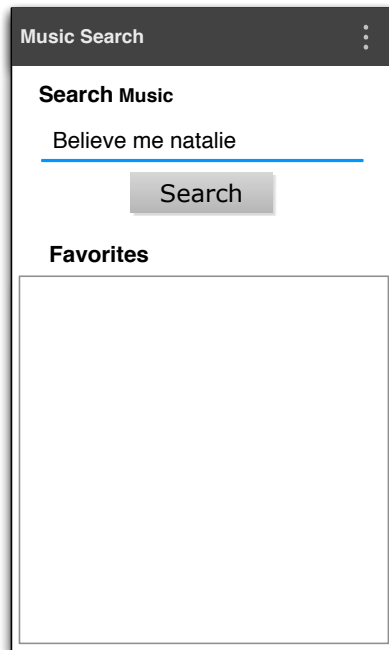
ITIS/ITCS 5180 Mobile Application Development
Homework 5

Basic Instructions:

1. In every file submitted you **MUST** place the following comments:
 - a. Assignment #.
 - b. File Name.
 - c. Full name of all students in your group.
2. Each group should submit only one assignment. Only the group leader is supposed to submit the assignment on behalf of all the other group members.
3. Your assignment will be graded for functional requirements and efficiency of your submitted solution. You will loose points if your code is not efficient, does unnecessary processing or blocks the UI thread.
4. Please download the support files provided with this assignment and use them when implementing your project.
5. Export your Android project and create a zip file which includes all the project folder and any required libraries.
6. Submission details:
 - a. Only a single group member is required to submit on Canvas for each group.
 - b. The file name is very important and should follow the following format:
Group#_HW05.zip
 - c. You should submit the assignment through Canvas: Submit the zip file.
7. **Failure to follow the above instructions will result in point deductions.**
8. **The required Android Virtual Device (AVD) should have minimum SDK version set to 20 and target SDK at 25.**

Homework 05 (100 Points)

In this assignment you will be developing a Music Search application using ListViews, Shared Preferences, and JSON Parsing.



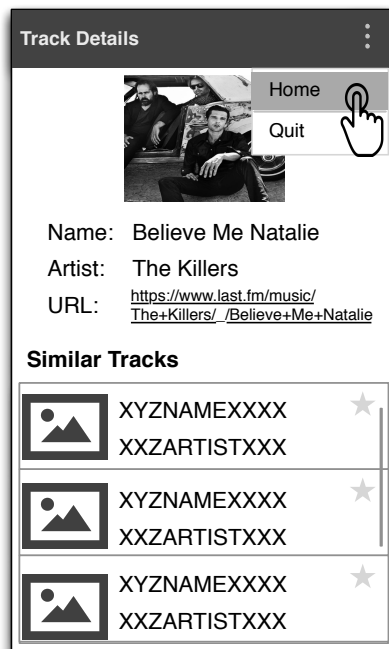
(a) Home Screen, search a track



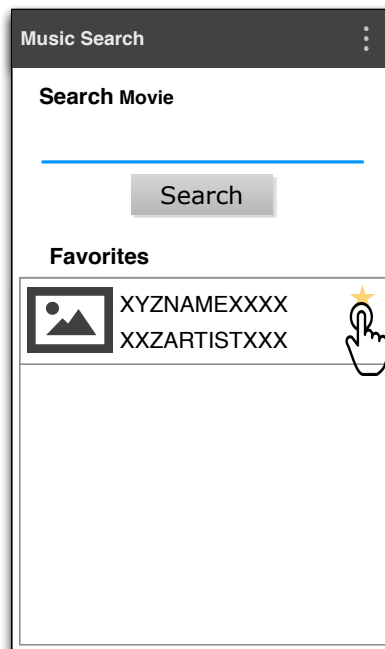
(b) Search Result ListView



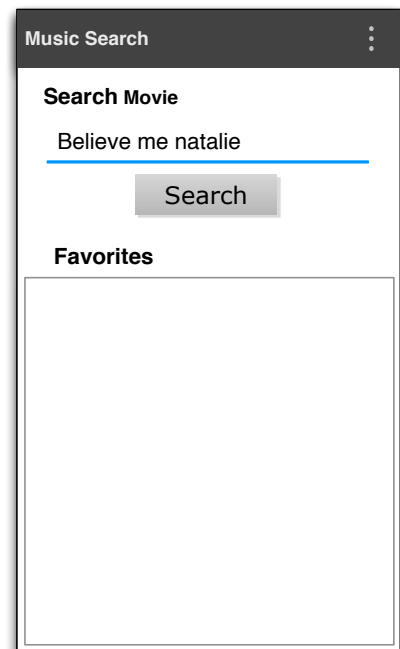
(c) Details



(d) Menu, clicked Home



(e) Removing an item from the favorites



(f) Removed from favorites

Part 1: Main Activity (40 Points)

The Main activity is responsible for searching a music track, parsing from the API, and displaying a list of favorites using a ListView. Please follow the instructions:

1. Action Bar menu: you need to add two menu options in the Action Bar: Home, and Quit (see figure 1(d)). You need to display this action bar menus in all activities.
 1. Clicking on Home button should take you to the Main screen.
 2. And, clicking on Quit button should close the app.
2. Search EditText: the app should have an EditText to take input (track to be searched).
3. Search button: Below the EditText, there should be a button named Search. Clicking on this button should parse the results using the API, and take you to the Search Results activity.
4. API: the API we are using is the Last FM track search API.
 1. Base URL: <http://ws.audioscrobbler.com/2.0/?format=json>
 2. Parameters : `method=track.search`, `track=<TRACKNAME>`, `api_key=<YOUR_API_KEY>`, `limit=20`
 3. Example : http://ws.audioscrobbler.com/2.0/?format=json&method=track.search&track=<TRACKNAME>&api_key=<YOUR_API_KEY>,limit=20
 4. Track name: use the search keyword from the EditText in `track=<TRACKNAME>`.
 5. API key: create a API account here: <https://www.last.fm/api/account/create> and get your key.
 6. Format and method: format should be JSON. Method should be track.search.
 7. Limit: should be set to 20.
 8. Reference: <https://www.last.fm/api/show/track.search>
5. You need to parse name, artist, url, small image url, and large image url from JSON.
6. Favorites ListView: This ListView should display a list of music tracks you mark as favorites. You should follow up with the instructions for implementing the next activities to understand it well.
 1. In each of the elements in the ListView there should be four elements.
 2. An ImageView with the image retrieved from API. (small one from JSON)
 3. Name of the track.
 4. Artist of the track
 5. Star ImageButton (Gold, as it is already a favorite).
7. The ListView should be capable of holding up to 20 items.
8. Clicking on any of the items on this list should take you to the track details activity.
9. Clicking on the Gold star button should unmark the item and remove it from the list.

Part 2: Search Results Activity (25 Points)

Clicking on Search button should take you to the search results activity. Please follow the instructions:

1. You should send the parsed results from the Main Activity to this activity.
2. This activity includes a ListView of the searched results.
3. Each of the item should include four elements just like the ListView in the Main Activity:

1. An ImageView with the image retrieved from API. (small one from JSON)
2. Name of the track.
3. Artist of the track
4. Star ImageButton (Initially Silver, as it is not marked as a favorite yet).
4. Clicking on any item in the list should take you to the corresponding track details activity.
5. Clicking on the silver star button should mark the track as your favorite, and turns it to Gold.
6. Make a toast acknowledging that you have favorited a track. Do not remove the item from the list.
7. You need to save favorite tracks in Shared Preferences. (See <https://developer.android.com/reference/android/content/SharedPreferences.html> , Example: https://androidexample.com/Android_SharedPreferences_Basics/index.php?view=article_discription&aid=126).
8. If you now navigate the menu button to go to home, in main activity, you should see the favorited track in the ListView.
9. If you restart the app, the favorited items should be marked favorited if you find anything that matches any of your favorited tracks in the search results.

Part 3: Track Details Activities (35 Points)

Clicking on any item from ListViews of main screen or the search results screen should take you to this activity. Please follow the instructions:

1. Details of the track:
 1. At the top there should be a track image (see figure 1(c)). Use the large image from JSON.
 2. Then you should display the name, followed by, artist, and clickable URL of the track.
2. Then you need to display the similar tracks like it. You need to use the API again.
 1. API URL: `http://ws.audioscrobbler.com/2.0/?method=track.getsimilar&artist=<ARTISTNAME>&track=TRACKNAME&api_key=YOUR_API_KEY&format=json &limit=10`
 2. You need to use **track.getsimilar** method.
 3. Use the artist name, and track name of the track.
 4. And, put the limit to 10.
3. Parse the returned result, and display it in the ListView.
4. ListView items' actions should be similar to the previous ListViews.
5. Clicking on any item on the ListView should display a Track Details activity for that particular item.
6. You need to implement 'mark as favorite' options here too.

NOTE:

1. Use Toast messages to confirm any change in the ListViews accordingly.
2. For ActionBar, you can follow the example here: <https://www.androidhive.info/2013/11/android-working-with-action-bar/> , or <https://www.sitepoint.com/better-user-interfaces-android-action-bar/>