420-203-RE – Program Development in GUI Environment

Assignment 3 – Spotify Web API in JavaFX

Worth: 12.5%
Due: **Sunday November 12th, end of day**
Teams: To be done individually or in teams of 2 maximum

Topics
- Interacting with a Web API
- Parsing JSON data in Java
- Developing a JavaFX Graphical User Interface

Description

As seen in the Lab, being able to parse JSON data in Java allows us to create dynamic applications connecting to Web APIs. For this assignment, you will need to get familiar with the Spotify Web API (https://developer.spotify.com), create an account, an application and receive a Client ID and Client Secret that you need to paste in the SpotifyController class provided. At the end of the exercise, you will get an application similar to the one in the screenshot above.

Mandatory tasks to complete **[8 points]**

1. **Create Graphical User Interface in JavaFX which includes at least: [4 points]**
   a) Label with a Title for your Application
   b) Message label, each successful action should show an appropriate message, and each failed action should show an error message.
   c) Image View to display album covers
   d) Text field and Button for searching albums for a band
   e) Previous and Next buttons to change the current album cover

2. **Using the Spotify Web API, implement a Spotify Controller with the following features [4 points]**
   a) A method to retrieve the Spotify band id from the string entered in the search text field.
   b) A method to retrieve the URLs of all the albums from a Spotify Band ID found in a)
   c) Once the albums are retrieved, you must load the first album cover in the image panel. Information about the number of albums retrieve of the band entered must be displayed in the message label
   d) Pressing the next or previous buttons should show the next/previous album from the band.

Optional Tasks, you can choose any task from the list **[up to 2 points]**

- Add a functionality to see all the tracks for the selected album (track number, name and duration). **[2 point]**
- Add a file menu, with an option to save all the artists album covers in this folder structure (./images/*[ARTIST NAME]/[ALBUM_NAME]*.png **[2 point]**
- Preload all the album images for a given band after the search. That will make your app more responsive so you don't have to download the next image when you change cover **[1 point]**
- Add an option to save the current album cover to a file using a file chooser dialog **[1 point]**
- Show all of the albums for a band (not just the first 20 or 50 albums) **[1 point]**
- If you have another idea, ask you instructor to know how many points it would give. For example, there was a hiccup with the Marvel API, but if you want to show all the comic books related to a superhero name, that would be acceptable!

Submission

You can zip your Netbeans project and submit it on Omnivox (Assignment 3). It is not acceptable to copy/paste or paraphrase parts of another team's assignment. To collaborate, you can help a classmate debug his code, explain your approach, but never share your code! Such practice would be considered plagiarism.

Late submissions are penalized by 10% per day, and won't be accepted after one week past the submission deadline.