CA326 Year 3 Project Proposal Form

**Project Title:** LiveWire

**Student 1 Name:** Andrew Cullen **ID Number:** 17378471

**Student 2 Name:** Daniel Rowe **ID Number:** 17492572

**Student 3 Name:** Eoin Mc Keever **ID Number:** 17436202

**Staff Member Consulted:** Rob Brennan

**Project Description**

Our project is to develop an Android app that will notify users of local concerts, based on their listening preferences.

To start off, we plan on using the Spotify API to track user data and recommend/notify users of local upcoming concerts and ticket releases. Using the internet as a source of local gigs, and harvesting them through an API or web scraper, we can then match this to each user through a Recommender System as well as their linked Spotify account, and feed the results back to each user through app notifications.

This is a very scalable project and has a lot of scope. We plan on tackling the problem modularly, firstly building only off the Spotify API for user personalization, and the Facebook Graph API for local music events. In time, we plan on expanding the platform to include user accounts, location-based services, other music API's and social media integration to create a music hub with cross platform playlists and sharing. Filtering concerts through different criteria is another feature planned.

Spotify API: The Spotify API is very powerful, and allows for very specific information on user’s listening preferences. The Spotify API will be used to get user’s listening preferences.

Web Scraper: Used to get local gigs from the internet.

The App works as follows:

1. Read a user’s library and/or recently played songs
2. Use the Spotify API to filter these songs into predefined categories. This lets us personalize the gigs needs of each user.
3. With our users’ gig needs, we can then match them up with gigs local to them. This is done by carefully pre-selecting where we scrape from. A good first candidate is the [Facebook Graph API](https://developers.facebook.com/docs/graph-api/overview), which lets us pull all Facebook events, filter them by categories (for us it would be MUSIC\_EVENT) and acquire either through description or the Featuring subview, the artists playing, as well as any other useful information (Time, Cost, Place, Cancellation).
4. This would then be provided to the User through an Android app. The app should passively provide notifications of relevant concerts, as well as allowing basic searching.
5. This is the barebones functionality needed for the app. It is very scalable as an idea, however, and has a lot of scope.

User’s Spotify Music Data

(My Music, Recently Played, etc)

Local Gigs and Concerts

Livewire App

Local Gigs that match user’s music preferences

Spotify API

Web

Scraper

Notifications

on Local Gigs

*Breakdown of LiveWire’s process*

**Division of Work**

The workflow will be split separately at different stages of development, at the first stage development will be between the web scraper, implementation of the spotify API and the UI. Further it will be split between social media integration, location-based services, the rating system and user accounts.

**Programming Language(s)**

Kotlin

**Programming Tool(s)**

Android Studio

**Learning Challenges**

**Using Android Studio**  
Android Studio is a development environment for Android operating system apps. As we have not used this development environment before, this is one more tool to get used to.

**Web scraping for Concert Listings**To gain an accurate listing of all local concerts, we will be looking at the [Facebook Graph API](https://developers.facebook.com/docs/graph-api/overview) as a good first candidate, which lets us pull all Facebook events, filter them by categories and acquire either through description or the Featuring subview, the artists playing, as well as any other useful information (Time, Cost, Place, Cancellation). This can be expanded to other sites, depending on how friendly the website is to web scraping.

**Personalization**

The main aim of this app is to accurately recommend concerts that are of interest to users. Making sure that each concert listing provided to each user is uniquely tailored to them is very important. The Spotify API as well as a construction of a rudimentary Recommender system will help in this regard.

**Spotify/Future Music API’s**

We will need to implement the Spotify API and if we expand the scope of the project, other APIs, into our app. This is one more piece of documentation/one more library to get used to, and therefore will be a learning challenge for our team.

**Hardware/Software Platform**

Ubuntu Linux

**Special Hardware/Software Requirements**

Spotify API, Facebook Graph API