Web Science Project Proposal
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Group 8
Product Name: SingleStream

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Idea: All-In-One Music Player and Social Network

Summary: Music Is Everywhere but now you will not have to be. Music lovers should not have to decide what media platform they would like to use when their favorite songs are scattered across them. *SingleStream* puts your favorite songs from various media platforms in one place -- a combination of your favorite tracks from Spotify, freestyles from SoundCloud, and remixes from YouTube together like they should be. But *SingleStream* is not only a music hub -- it is a social network made of and for music enthusiasts. Share your favorite songs, explore new artists, challenge your friends in music trivia and more.

Similar Products:

Tomahawk- A desktop/mobile app that allows you to access and play music from your local storage and any cloud-based subscription services you may belong to. The application has some other notable features such as the ability for you to “Listen Along” to music with your friends, and to create and share playlists with friends. However, it falls short in the delivery of these features due to lag, unhandy design, and several bugs. Additionally, you can only use Tomahawk on devices where the software is already installed.

Ampache- A web-based music streaming application and file manager that that lets you listen to music from “any Ampache compatible client.” It lacks any type of social network integration and requires a basic understanding of the LAMP stack to install the software (initially). It also little built-in integration with music subscription services.

Soundizz- A web-based media hub that allows you to sync playlists from various music service platforms (i.e. Spotify, Tidal). The application’s user interface lacks simplicity and can be difficult to navigate initially. Additionally, there is no social aspect of the application.

Subscription Services (such as Amazon Music, Google Music, Spotify)- Each service has their own native applications (mobile, desktop, web-based) and a massive catalog

of songs to go along with them. However, not all songs are available on every platform. Other songs are not available through any of these services at all, but rather venues such as YouTube and SoundCloud. If you belong to multiple music platforms -- and most people do -- and want to listen to tracks from more than one source, you need to switch between multiple applications. This is not only an inconvenience, but it prevents you from mixing and matching songs from various sources to create the playlists of your desire.

Stakeholders/Users:

Target User: In short, *SingleStream's* target user is anyone who loves music. To be more precise *SingleStream* is built for:

- Those who belong to multiple subscription/cloud-based music services such as Spotify, Last.fm, etc.
- Those who like to listen and share music with their friends
- Those who listen to media on non-mainstream music/media services such as YouTube and Spotify
- Those who enjoy posting, reviewing, polling, *trivia-ing*, and all in all engaging in an online community dedicated to music

Developers: The Developers of *SingleStream* may decide to place ads in select places of the site to cover costs associated with web hosting and site maintenance due to constantly changing API formats. However, at the moment *SingleStream* remains a not-for-profit project created by and for music enthusiasts.

Technologies/Requirements:

SingleStream is a web-based application that will use the MEAN stack technologies. Frontend technologies include AngularJS, HTML5, CSS3, and Jquery. Backend technologies include MongoDB, Express, and NodeJS. GitHub will be used as a code management system.

SingleStream will run on any internet connected device and requires no software to be installed with the exception of a web browser. It will run on smartphones, tablets, and laptops alike when it is finished (Note: all features may not be available on mobile devices initially).

At a minimum, *SingleStream* will utilize YouTube, SoundCloud, and Spotify API's to play music stored in their databases. It will also integrate various social network APIs, including those designed by FaceBook and Twitter, to create the overall social music

community. A tentative list of APIs and links to their documentation have been provided at the end of this proposal.

Features:

- Sync playlists from various music platforms (YouTube, SoundCloud, Spotify, and possibly more) in one place
- Create and share playlists with friends
- Socialize: a “mini Facebook” centered around music
- Ability to add privacy to playlists to in order for users to choose which playlists are publicly visible to their friends
- More features yet to come!

Roles and Responsibilities:

Robert Rotering - Will work as a full-stack developer. Helping to integrate the API’s into the project and turn the resulting data into a usable form for the front end.

Roshni Vachhani - Will work with helping to integrate API’s into the project and designing the front end interface.

Ryan Flynn - Assist building an HTML framework, integrating API’s, and front-end scripting.

Will Stone - Will work to integrate API’s and add back-end functionality.

John Fantell - Will focus on overall design and implementation, and assist in bridging the front-end and back-end interfaces.

APIs:
The following list includes some of the APIs that may be used in the design of *SingleStream*. This list may vary from the one used in the final design.

SoundCloud API
https://developers.soundcloud.com/docs/api/guide

Spotify API
https://developer.spotify.com/web-api/

YouTube API
https://developers.google.com/youtube/v3/getting-started

Music Trivia API
https://market.mashape.com/roomtek/music-trivia

Last.fm API
http://www.last.fm/api

Facebook API
https://developers.facebook.com/products/

Twitter API
https://dev.twitter.com/index