

CSEE 5590 - 003 Project Report



Project Title: Tune Link

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[Video Demonstration](#)

Introduction & User story

TuneLink is an online, interactive concert search engine that uses a simple API to find concerts that are relevant to a user. As live music enthusiasts, we want a place to view concerts that might be interesting to us. Our search algorithm factors in personal music preference to find vibrant local events. Several online services have concert search engines, but each comes with advantages and drawbacks. TuneLink seeks to solve some of the problems that we've identified with these competitors.

We've identified in-person concerts as a resurging market. Covid-19 originally eliminated the possibility for these events, but with lockdowns ending TuneLink is primed to fulfill user needs.

With TuneLink we want to enter a small amount of information about ourselves (ie Spotify userID) and receive a list of events that are relevant to our music preference. When a user selects one of these events, we would like to display information about that event such as the location and time. When a user clicks on the location, we would like the user to be routed to that location using google maps.

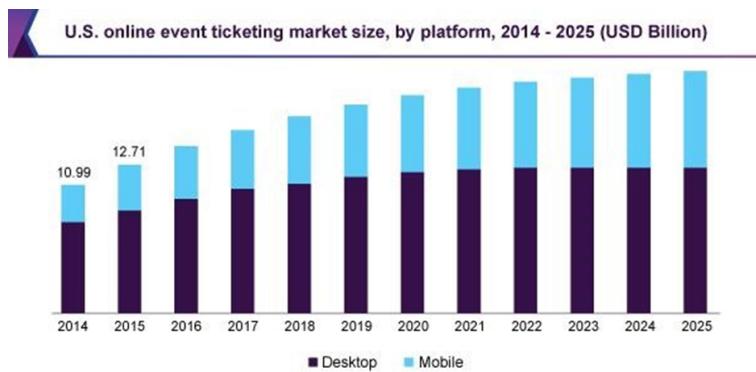
Background/Related work

Our project has 2 main competitors, Spotify and SongKick.

Spotify is a premier music streaming service, Spotify allows users to create playlists and follow artists. The Spotify algorithm creates tailored suggestions to the user which allows them to discover new music and keeps them coming back for more. Spotify does have a concert interface where users can find interesting concerts but this functionality is hidden behind several layers and actions and the interactivity is limited (no artist search).

SongKick is a concert based online service. Its flagship service is a concert finding search engine. This engine is robust and can return artists, venues, locations, and more. SongKick needs the user to input specific search criteria/artists and cannot ingest lists into the search.

We have also identified a business need for TuneLink. Online ticketing sales has been an increasing market over the last 20 years. (46.59b market in 2017). Physical music media (CDs/Vinyl) markets have dropped from \$13.2 billion in 2000 to \$1.65b in 2021 with streaming music comprising 83% of the market. Large players currently exist in both the online ticketing and streaming markets, but none merge data to make smart recommendations for concerts.



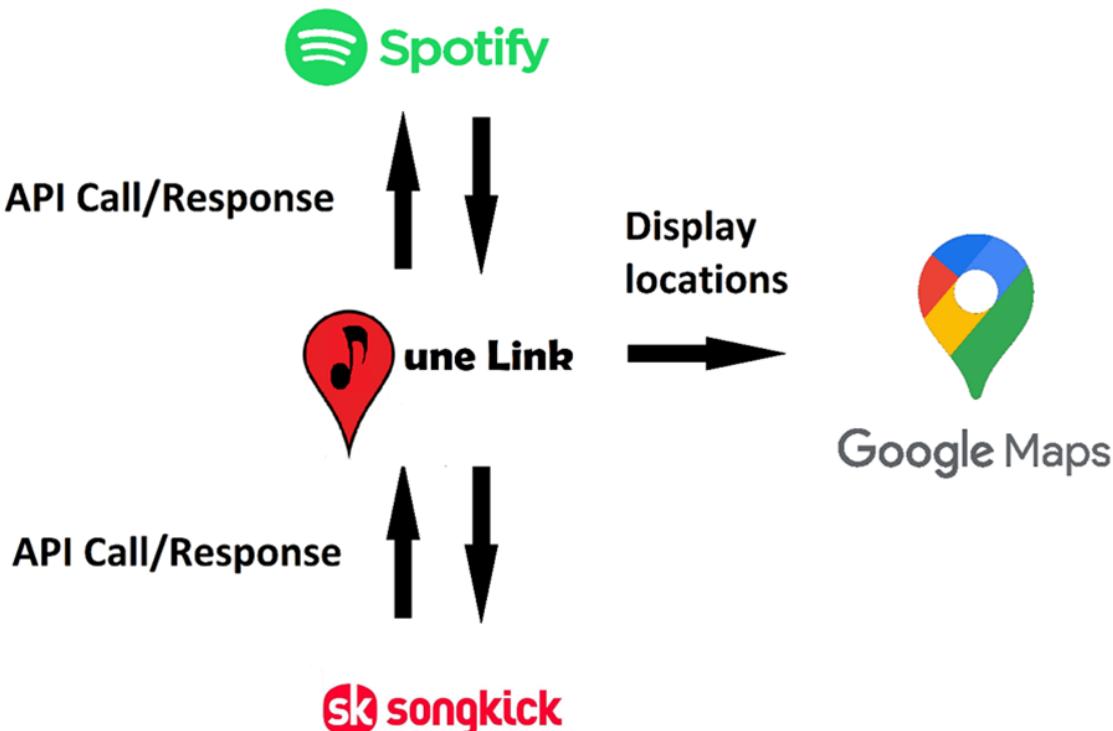
Proposed idea

With TuneLink we want to bridge the gap between the Spotify and SongKick APIs. We'd like a user to be able to enter their Spotify ID, and have the robust SongKick API return a list of relevant concerts in the area. We also want the user to be able to search by location and by artist. We want to package these searches into a clean and simple UI so that the user does not need to dig through several screens to get their desired output. Finally we'd like to be able to connect to the Google Maps API so that a user can be given directions to their event although this is not yet implemented as on 4/11/2021.

Methodology/Approach

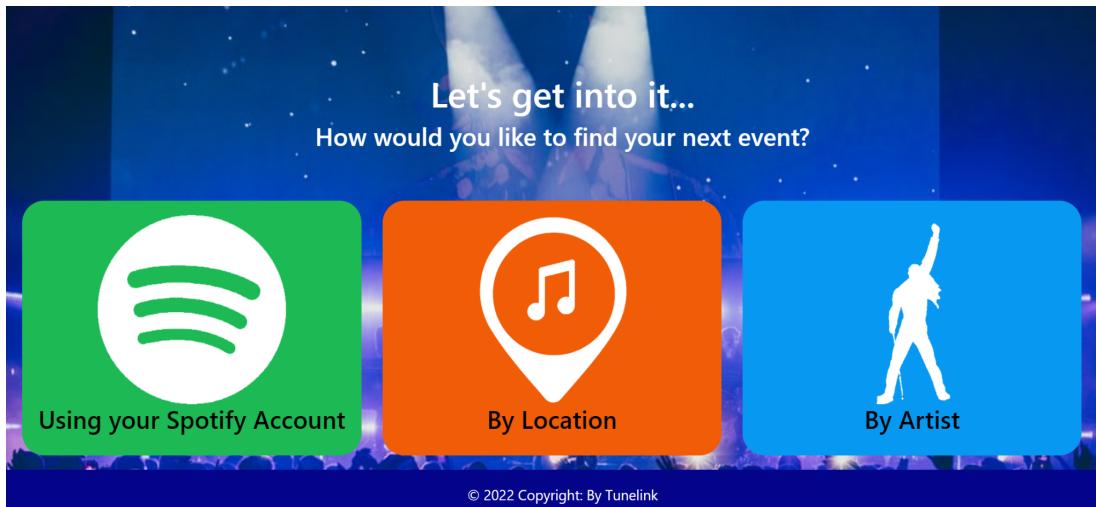
We have implemented TuneLink using Angular and RESTful APIs. TuneLink communicates with both the Spotify and SongKick APIs. When a user wants to search for concerts, they are able to enter their Spotify User ID. This ID is then used to query the Spotify database and GETs a list of artists from that users created playlists. With the list of artists we then query the SongKick API to get any available concert information. In this way we are tailoring the results to fit the users tastes. The results will eventually have a Google Maps link that will show the user utility information about the venue such as directions and opening/closing times.

The project is broken up into over a dozen different Angular modules. There are modules for the navbar, artist search, location search, spotify search, results and more. These modules communicate with each other to get relevant results. We have also included error pages, a nav bar, footer, and search pages. The user interface is implemented with HTML and CSS.

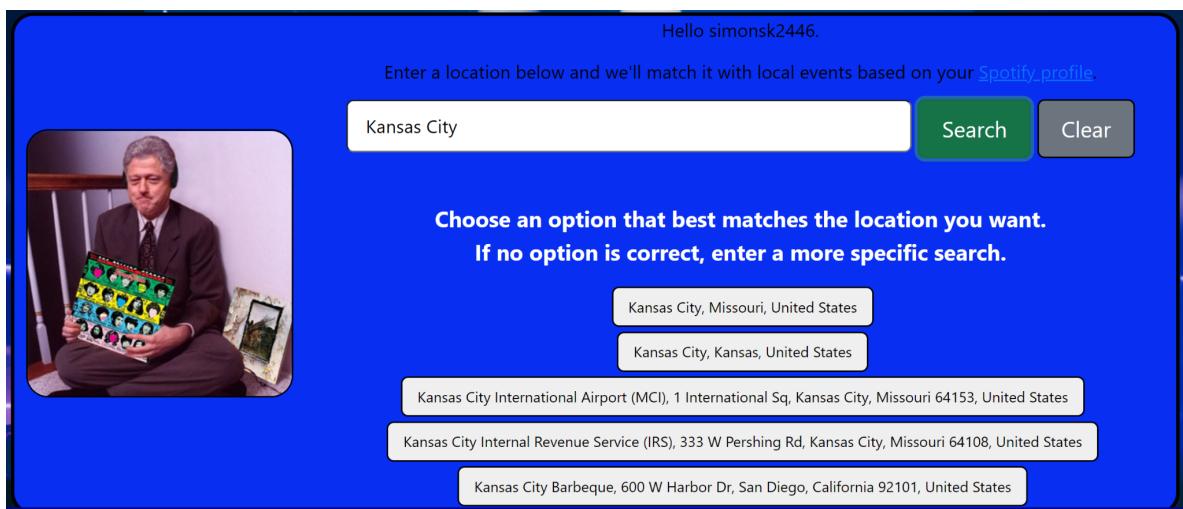


Features

The primary feature of our app is a concert search engine. This search engine is delivered through 3 distinct searches. The user can search by Spotify User ID, location, and artist. There is a simple UI design that directs the user to the relevant page for each search option.



The Spotify ID search asks for the user's Spotify ID. It directs the user to a new screen where it shows the profile picture for that Spotify account and asks the user to enter a location. The algorithm will then return concerts in the area that are relevant to that Spotify account.



Hello kdog_70.

Enter a location below and we'll match it with local events based on your [Spotify profile](#).

Artist(s)	Event	Status	Performance Date	Venue	Location
alt-J Portugal. The Man Cherry Glazerr	alt-J with Portugal. The Man and Cherry Glazerr at Cable Dahmer Arena (April 7, 2022)	On Schedule	2022-04-07	Cable Dahmer Arena	Independence, MO, US
Buku	Buku at Aura KC (April 9, 2022)	On Schedule	2022-04-09	Aura KC	Kansas City, MO, US

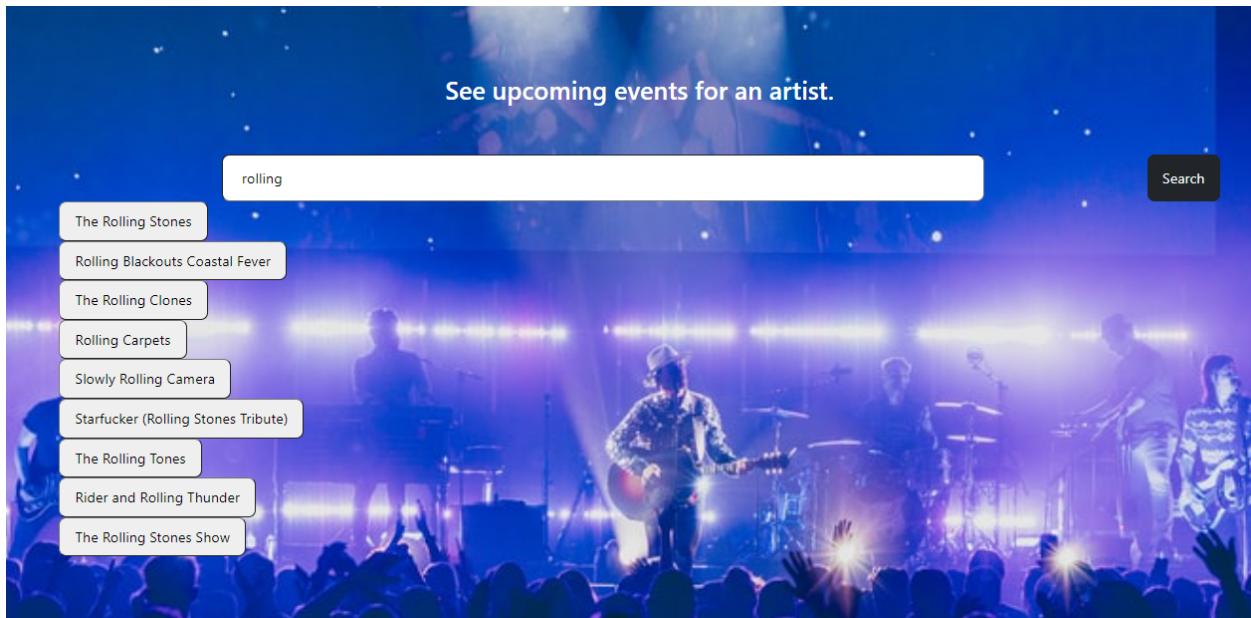
The location search asks the user for a location such as a City, State, Country or Venue. If you enter a broad query, the engine asks you to further specify your search by showing a list of relevant locations. It then connects to the SongKick API and returns concerts that are listed to happen in that specific location.

Choose an option that best matches the location you want.
If no option is correct, enter a more specific search.

[Kansas City, Missouri, United States](#)
[Kansas City, Kansas, United States](#)
[Kansas City International Airport \(MCI\), 1 International Sq, Kansas City, Missouri 64153, United States](#)
[Kansas City Internal Revenue Service \(IRS\), 333 W Pershing Rd, Kansas City, Missouri 64108, United States](#)
[Kansas City Barbeque, 600 W Harbor Dr, San Diego, California 92101, United States](#)

Artist(s)	Event	Status	Performance Date	Venue	Location
Sloppy But Lucky	Sloppy But Lucky at Bar K Dog Bar (August 1, 2021)	On Schedule	2021-08-01	Bar K Dog Bar	Kansas City, MO, US
Lucy Sings	Lucy Sings at Uptown Theater (March 12, 2022)	On Schedule	2022-03-12	Uptown Theater	Kansas City, MO, US
The Talbott Brothers Evan Bartels	The Talbott Brothers and Evan Bartels at recordBar (April 5, 2022)	On Schedule	2022-04-05	recordBar	Kansas City, MO, US
Ministry Melvins Corrosion of Conformity	Ministry with Melvins and Corrosion of Conformity at Arvest Bank Theatre at The Midland (April 6, 2022)	On Schedule	2022-04-06	Arvest Bank Theatre at The Midland	Kansas City, MO, US

The artist search asks the user to input a specific artist. Once an artist is entered it will bring up a list of artists that match that user's input. For example, if a user input the word 'rolling', the search would return a screen that looks like this.



The user would then be able to select the artist 'The Rolling Stones' and be shown a list of upcoming concerts that look like the following.

A screenshot of a web application interface showing a list of events for 'The Rolling Stones'. The page has a blue banner at the top with a concert photo and the text "See upcoming events for an artist.". Below the banner is a search bar with the text "rolling" and a "Search" button. A table lists seven events, each with a red border. The columns are labeled: Artist(s), Event, Status, Performance Date, Venue, and Location. The data is as follows:

Artist(s)	Event	Status	Performance Date	Venue	Location
The Rolling Stones	The Rolling Stones at Estadio Wanda Metropolitano (June 1, 2022)	On Schedule	2022-06-01	Estadio Wanda Metropolitano	Madrid, Spain
The Rolling Stones	The Rolling Stones at Olympiastadion (June 5, 2022)	On Schedule	2022-06-05	Olympiastadion	Munich, Germany
The Rolling Stones	BST Hyde Park 2022	On Schedule	2022-06-09	Anfield Stadium	Liverpool, UK
The Rolling Stones	The Rolling Stones at Johan Cruijff Arena (June 13, 2022)	On Schedule	2022-06-13	Johan Cruijff Arena	Amsterdam, Netherlands
The Rolling Stones	The Rolling Stones - SIXTY STONES EUROPE 2022	On Schedule	2022-06-17	Stadion Wankdorf	Bern, Switzerland
The Rolling Stones	The Rolling Stones at San Siro (June 21, 2022)	On Schedule	2022-06-21	San Siro	Milan, Italy
The Rolling Stones	BST Hyde Park 2022	On Schedule	2022-06-25	Hyde Park	London, UK

Results, Evaluation & Conclusion

TuneLink fills a gap in the concert market. Concert goers are not always tech savvy, and TuneLink offers a streamlined way to browse for concerts. Users can often be lazy, and when they are presented with applications that take work on their part (such as importing their music library), they will most likely find alternative solutions.

TuneLink is one of these alternative solutions. Users only need to enter a minimal amount of data, such as a Spotify ID or a location and be connected with meaningful concerts. Though we still have work to do, such as implementing Google Maps, we are proud to present TuneLink.

Project GitHub Link

- <https://github.com/WebProject-CSEE5590/project/tree/master>

Video Link

- <https://youtu.be/0Axdd8SoQ3s>

References

- API for music information: <https://developer.spotify.com/documentation/web-api/>
- API for concert and festival listings: <https://www.songkick.com/developer>
- Business info about concert sales
<https://www.thedenverchannel.com/news/national/cd-sales-see-resurgence-as-overall-physical-music-sales-grew-for-first-time-since-1996>
<https://www.grandviewresearch.com/industry-analysis/online-event-ticketing-market>