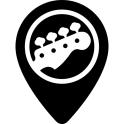
**COMP 4513: BandTracker Summary**

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**Summary**

The primary idea behind our web application [BandTracker](http://wpress.bandtracker.ca/) was to create a web application that people could access from any modern web browser on laptops, tablets, and smartphones so that no matter where a person is, they can use BandTracker to find up to date biographical, social, and of course touring information about both modern and historical bands. The key focus is for users of BandTracker to be able to find their favorite bands, see where they are touring, and be more informed. Having genre sorting and event pages were an important aspect that we feel compliments the focus on musical Artists. We also wanted to tie in various interactive points for BandTracker users, so we ensured that our Google Maps integration for showing event was more than just pins on a map, and we added in social media integration through Instagram photo streaming, a Twitter widget for tweets about touring, Facebook liking and sharing, and a comment system on all Artist, Genre, and Event pages in BandTracker.

**Front End**

We chose to keep using the WordPress (WP) theme Enigma for BandTracker as we liked the minimalistic style it has, as well as the fact that it is based on Twitter’s Bootstrap which we all have experience with so it was fairly straightforward to tailor it to our preferences in our customized child theme. Another major benefit of using the Enigma theme was that it is fully responsively designed without us having to implement anything ourselves, so having that work without having to set up anything ourselves was a great benefit. Our social media outlets (Facebook, Twitter, and YouTube) are all woven directly into the template, and are provided on each page through the top bar.

The core of our website’s functionality revolves around our three custom post types: artists, events, and genres. The artist pages allow users to view the band as a whole, providing information such as a bio, images, tweets, Instagram photos, YouTube videos, genres, events, and most importantly the tour map. If the band is currently touring, the tour map will utilize each artist’s event list to generate a google map showcasing where they are playing in their current tour, including directions and street view functionality. This provides value to each artist page, in addition to the other information presented above. The genre page is utilized to show information about a specific genre, and is structured similarly to the artist pages. It shows a brief summary of the genre, tweets, Instagram photos, and a list of artists that fall under that particular genre. Finally, the event pages showcase more detailed information about a specific event, showing a zoomed in map of its location, as well as a list of bands that will be playing at that event. All of our custom post types are compatible with the website’s search, which will find the specified term in any of the website’s pages.

Users can favourite an artist, genre, or event page to their profile, which will then be displayed on the Favourites page using the database if the user is logged in, and cookies if the user is simply a guest. Additionally, the website has room for testimonials and as well as a form for contacting us.

**Back End**

The back end for BandTracker is primarily driven by artist and event web crawlers, which utilize Wikipedia, Last.fm, and BandsInTown to locate information about artists, events, and genres.

The artists web crawler uses Wikipedia to retrieve a list of artists and general band information such as our biography, genres, and year’s active sections. The format of each Wikipedia page varies so it was important for the crawler to be able to handle different page formats and determine if the band name retrieved is in fact a band. There were some bands however that lacked content on some Wikipedia pages making it hard to determine if they are a band, because of this we chose to remove any bands that were missing genre information. Some bands have multiple meanings as well so we had to find a way to determine the proper Wikipedia page. After finding the information we needed, we go to Last.FM to retrieve that artist’s image.

The event web crawler runs independently from the artist crawler. It looks through the artist database finding artists that have not yet been crawled for events. BandsInTown was our source for all band events. From this website we were able to find venue, date, and address information that was later used in our Google maps plugin to track events.

Our custom posts (artists, genres, and events) all function very similarly, being generated by external scripts that connect with our crawler database and insert HTML into the Wordpress database. These scripts are built such that they can be run multiple times without generating duplicate data. By linking our data this way we are able to utilize our crawled information directly inside of Wordpress, allowing us to make use of the default Wordpress features such as page/post commenting. Additionally, we are able to manage our posts through the Wordpress dashboard, rather than having to interact with them through the database. Each of the custom posts have a Page that is used with a Template to display the correct post type, which in turn allows us to provide paging. Finally, various shortcodes are utilized for most of our plugins, such as the embedded YouTube video playlists and Google Maps, which allows them to be very simple and manageable.

**Plug-ins**

* **Akismet:** Used to protect the website from spam posts. Allows administrators to filter comments inside of the Wordpress dashboard.
* **Comprehensive Google Map Plugin:** Allows us to insert dynamic google maps in for each artist and event.
* **Facebook Like:** Allows us to link posts to Facebook likes.
* **Formidable:** Allows the creation of dynamic forms within the Wordpress dashboard. Used for the “Contact Us” form.
* **Testimonial Basics:** Allows for the creation of testimonial forms with star ratings.
* **UpdraftPlus:** Provides cloud-based backup/restore functionality.
* **WP Favourite Posts:** Allows users to add favourite posts. Required some modifications to allow favoriting of custom posts.
* **YouTube:** Allows us to embed YouTube videos within pages. Used to display YouTube playlists for artists/genres.

**Background Plugins**

* **Google Analytics by Yoast:** Provides us with google analytics to analyze usage of the website.
* **Google XML Sitemaps:** Generates an XML sitemaps for search engines.
* **HTTPS Redirection:** Redirects to HTTPS versions of the website.
* **Wordfence Security:** Anti-virus, firewall, and caching.
* **WordPress SEO:** Provides search engine optimization to the site.