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COMP 4513: BandTracker Summary

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Summary

The primary idea behind our web application BandTracker was to create an accessible hub that people could use to find up to date biographical, social, and of course touring information about both modern and historical bands. We wanted this application to be accessible from any modern web browser on laptops, tablets, and smartphones so that a large audience could use the application. 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 and event pages and sorting were all important aspects that we feel compliment the focus of BandTracker 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 Events was more than just simply pins on a map. Social media integration was also added in to fulfill similar purposes. This was done through Instagram photo streaming, a Twitter widget for tweets, Facebook liking and sharing, and a comment system on all artist, genre, and event pages available.

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, and we did not have to design or fully implement this usability based functionality ourselves, this 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 for easy and direct access.

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, a visual tour map will utilize each artist's event list to generate a Google Map on the page, showcasing where a band can be playing in their current tour. The functionality of these maps includes directions and street viewing, as well as the address of the venue in the pop-up balloon. 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 both visually and informatively. 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, the date of the event, as well as a list of bands that will be playing. 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. This is used to have a cohesive search experience despite having a large amount of content on the web application.

Users can also 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 includes testimonials and as well as a form for contacting BandTracker if end users have in depth inquiries.

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 in polite fashions.

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 (and not a utensil as in the case of "Spoon", for example). 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 discard 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 to crawl. After going through the process of

finding the information we needed and storing it in our database, our crawlers then go on to Last.FM to retrieve that artist's image (be exacting a URL for the profile image on Last.FM servers).

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 the venue, date, and address information for our events that was later used in our Google Maps integration as debriefed earlier.

Our custom posts (artists, genres, and events) all function very similarly, being generated by external scripts that connect with our crawler database and insert custom HTML into the WordPress database in the wp_posts table. 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 WP features such as pages, posts, and 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 plug-ins, such as the embedded YouTube video playlists and Google Maps, which allows them to be very simple and manageable to implement and maintain.

Plug-ins

Plug-in	Usage
Artist Init	Created by our developers to make Artist custom posts.
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. Also prevents us from exceeding Google's 2,500 requests per day with its Google Maps API.
Event Init	Created by our developers to make Event custom posts.
Facebook Like	Allows us to link posts to Facebook likes, bring user social media sharing and interaction to BandTracker.
Formidable	Used for the creation of dynamic forms within the WordPress dashboard. Utilized for the "Contact Us" form.
Genre Init	Created by our developers to make Genre custom posts.
Testimonial Basics	Allows for the creation of testimonial forms with star ratings.
Updraft Plus	Provides cloud-based backup/restore functionality for the entire site to our server and to external sources.
WP Favourite Posts	Adds functionality that lets users to add favourite posts to a list. Required some modifications to allow favoriting of our various custom post types.
YouTube	Allows us to embed YouTube videos within pages. Used to display YouTube playlists for artists/genres.

Background Plug-ins

Plug-in	Usage
Google Analytics by Yoast	Provides us with direct integration of Google Analytics to assist in the tracking and analysis of BandTracker usage.
Google XML Sitemaps	Generates an XML sitemaps on the fly for search engines.
Wordfence Secturity	Anti-virus, firewall, and caching.
WordPress SEO	Provides search engine optimization and analysis for the site. Assists us in predicting what our results will appear like in search engine listings.
Facebook Like	Allows us to link posts to Facebook likes, bring user social media sharing and interaction to BandTracker.