Project Description

 This project consists of three visualizations of data pertaining to tours of the band, The Oh Hellos. The first visualization is a map that shows all stops The Oh Hellos have made on all of their tours since summer 2014. It allows the user to filter by tour to focus on a single tour or compare multiple tours. The second visualization is an animated map that visualizes the locations they visited on their 2018 North American tour over time. The third visualization is a network graph that visualizes relationships between The Oh Hellos and the bands that opened for them on their 2018 North American tour (a relationship being a show they played together). The data for these visualizations was collected from The Oh Hellos’ Facebook page and assembled into a dataset.

Why I am Interested

 The Oh Hellos are my favorite band, and I thought that visualizing data about a band on tour would be a good challenge for practicing my skills visualizing spatial and temporal data. I also thought that creating a dataset would be a good experience, and it would allow me to make something that other people could possibly use to visualize that same data. I also wanted to challenge myself to make different types of visualizations for this project, and I ended up using a different tool for each visualization. I enjoyed visualizing all of the venues The Oh Hellos have visited and seeing all the places they have toured. It was also interesting to see how many times The Oh Hellos played with each opening band on their most recent tour, and how they all were all related by the shows they played together.

Scope of Project

 For this project, I went through all of the images that contained information about The Oh Hellos’ tours on their Facebook page. I did not include one-off shows that were not part of a larger tour. I entered data (tour, date, country, state, city, venue, year) about each show into a spreadsheet, also looking up latitude and longitude coordinates for the venues to add to the spreadsheet as well. I also went through the Facebook events for their 2018 North American tour to get the network data about which opening bands played with The Oh Hellos at each show. I created a spreadsheet with that data in order to make a network graph. I created and processed both of these datasets by hand.

 I aimed to make three visualizations: a map of all tour stops with filtering options, an animated map that showed all venues The Oh Hellos visited on their 2018 North American tour, and a network graph that showed all the opening bands that play shows with each other and The Oh Hellos on the 2018 North American tour. I used Tableau for the first visualization, Animaps for the second visualization, and Cytoscape for the third visualization. The visualizations were bound by the functionalities of these tools, so there were some features that would have been nice to add to the visualizations but were not possible due to the constraints of these tools.

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 These visualizations exist for people that are interested in The Oh Hellos, whether as fans or as professionals. Any user of these visualizations would be expected to have some degree of familiarity with using web applications to access them, so it is expected that they could also navigate the interfaces of the first two visualizations. Fans of The Oh Hellos vary in age, gender, ability, etc. so these visualizations needed to be created for a general audience.

There are several different contexts for these visualizations. All of them are accessible via computers. The first visualization is an interactive map created in Tableau, posted on the Tableau public site. The second visualization was created with Animap, a tool that can animate routes using the Google Maps API. Animaps gives you a link that can be used to view your visualizations. The third visualization is a network graph created in Cytoscape, saved as an image (PNG file). Users can view all of these visualizations through a web browser. These visualizations would most likely appeal to music fans interested in concert data.

 There are several tasks a user may want to accomplish by looking at these visualizations. Fans of the band might want to see all of the venues The Oh Hellos have played it for a variety of reasons: seeing how often the band has played near them, checking back to see venues they’ve seen The Oh Hellos at in the past, comparing the regions of the USA/world The Oh Hellos have visited on different tours, looking at how the tours have grown over the years, etc. A professional may be interested in seeing what markets The Oh Hellos have visited and what markets haven’t been tapped, which areas have not been visited in a while, what venues The Oh Hellos have performed at before, etc.

The second visualization can allow a user to see all the places The Oh Hellos have visited on their most recent tour, creating a route between all of the venues. This allows the user to see where and when the shows were played. This visualization is especially useful for seeing this happen over time, as the visualization steps through the route in proportion to the time between shows. The user also has the ability to move through the dates and start and stop the visualization at whichever time they would like.

The third visualization allows for fans to see what opening bands played with The Oh Hellos and which combinations of bands occurred. It also gives an idea of what the frequency of the combinations was. Through this visualization, it is pretty easy to see how often The Oh Hellos played with each band, and how often the opening bands played with each other. Users may be interested in learning what bands played with The Oh Hellos to get new music recommendations. It may also be of use for professionals to consider other opening acts, either for The Oh Hellos or a different band that may be trying to attract a similar audience.

These are all of the variables that were used to create the first two visualizations:

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| --- | --- |
| **Variable** | **Data Type** |
| Tour | Nominal |
| Date | Temporal |
| Country | Spatial |
| State | Spatial |
| City | Spatial |
| Venue | Nominal |
| Year  | Temporal |
| Latitude | Spatial |
| Longitude | Spatial |

The third visualization was created using network data. The bands were the nodes and a show they played together was represented by an edge.

 The first visualization was created in Tableau. I decided to use size an indicator of how many times The Oh Hellos played at a particular venue. I also wanted to color code the tours so different tours would contrast with each other when users were comparing them. This was difficult to balance, since The Oh Hellos returned to the same venue on different tours, meaning that simply using Circle would end up leaving data off the map as only one tour’s color could be represented. I ended up using the Pie marks in Tableau to represent venues that were visited on multiple tours. The circle becomes a pie chart, slices divided evenly among the number of stops at a particular venue. I also tried to pick colors for each tour that wouldn’t affect colorblind users too badly if a venue was split between tours. I even created an alternate visualization with a colorblind palette. I included the option for the users to filter the map by tour, so they could focus on whichever tour(s) they were interested in. I also included the option to filter by year as another way the user could interact with the map to observe change over time. I included information like venue, city, state, country, date in the tooltip, so users would have the option to get more information by hovering over a point of interest. The map allows users to zoom in and out to explore the data at whatever range is most interesting to them. Overall, this visualization helps the user compare tours and visualize of all the venues The Oh Hellos have toured at over the years.

 The second visualization was created with Animaps, which is a tool that extends the functionality of Google Maps to animate them. I took the 2018 North American tour information from the spreadsheet I made of all of the tours and put it into a csv file, which I then converted to a gpx file so it would be in a format that Animaps would accept. The latitude and longitude coordinates were input into the route. I had to go and add the venue and city manually. I also had to add the dates The Oh Hellos stopped at each place manually. I took the color of the routes from the album art for The Oh Hello’s two newest EPs, *Notos* and *Eurus*. I also used the album art for *Eurus* as an icon to represent the band touring their newest EP. I thought that the flying bird would be a nice touch aesthetically, and it was a good image to use to identify the band. I also changed the speed at which the visualization is animated, because the default setting had it take eighteen minutes to go through the entire route. I sped up the animation to go through the route in 2 minutes, since that was fast enough not to seem tedious, but slow enough to still get a sense of how long the tour took and what venues The Oh Hellos played at. Having the labels appear on the screen for a few seconds is also meant to help the user know exactly what venue and what town The Oh Hellos played at in each stop. Playing the visualization allows the user to experience the route of the tour in proportion to the date each show was played.

 The third visualization was created in Cystoscape with a csv file that had a dataset of relationships between The Oh Hellos and all of their opening bands. I manually adjusted the nodes to get this layout. I wanted to make it easy for the user to get an idea of the quantity of shows the bands played with each other, so I tried to separate the bands in a logical way that made it easy to see who played with who. I chose the node color based on the red associated with the album art for *Eurus*. I picked light blue edges to contrast the node color. Finally, I tried to choose a font with personality to make the graph more visually interesting. I mapped the node size to the degree, so the bands that played more shows with other bands would look larger to reflect those relationships. Overall, this visualization gives a sense of the different combinations of bands present on this tour, as well as number of shows each band played with The Oh Hellos and with each other.

Aspects I Could Not Implement

There were several ideas I wanted to incorporate into my visualizations but could not due to technical or time constraints. I wanted to use some graphics related to The Oh Hellos to make my interactive look more appealing and be more visually associated with The Oh Hellos. However, overlaying images on a map in Tableau is a complicated process, especially with a non-spatial image. Right now, I do not possess the graphical editing skills to make an image that could fit inside a tableau map and still look aesthetically pleasing, so I just stuck with the Tableau defaults.

I wished that the Animap tool gave the user more control. I would have liked to make the map more interactive, giving the user the ability to click on a stop on the tour and read more information about the venue/show. I also would have liked to include markers for each stop, but the data did not import that way, instead creating the route displayed in the final visualization. I also think adding markers would have made the option for the user to move between days more useful. To get the kind of functionality I wanted, I think I would have needed to code my own application using the Google Maps API. That was out-of-scope for this project, but it is something I would like to learn in the future.

Finally, I would have liked to do more with the network graph. A network graph tool like Cytoscape does not have the same interactive capabilities as Tableau. I would have liked to make this interactive so the user could hover over each node and get more information about each band. However, this is outside the scope of Cytoscape. I also would have liked to fill each node with a logo for each artist to make it a more interesting visualization that conveys more about the personality of each band. I do not have the graphical editing proficiency required to do this, however. This project has inspired me to learn to edit graphics so that I can make better visualizations in the future.

Exploratory Visualizations

Non-color coded Oh Hellos tour map

This visualization was before I figured out that the Pie option could be a solution to the issues I was having with color coding. It shows all stops on all tours as the same color. This shows a very basic version of the data I wanted to visualize. From here, I was able to expand upon this visualization and provide more interactivity to the user.

Filled in Map

I wanted to make a chloropleth that showed how often The Oh Hellos have played in each state. This map gets pretty close, however the UK provinces remain as circles instead of filled in. I decided to keep this visualization to show the data for North America, but it didn’t make the final cut because of the issues with the UK. Since UK provinces map differently than North American provinces, there were issues with getting tableau to recognize which province each venue was in.

Botched Animap

<http://www.animaps.com/pb/532640004/8096/oh_hellos_spring_2018_tour_data>

This was my initial attempt at making a visualization with Animap. I was playing around with the functionality and added an automatic stop when the animation reached Cincinnati. However, the functionality to remove the stop would not work. After trying several different tactics, I ended up starting over and copy/pasting most of the information from this map to a new one.