

Tourviz

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Visualizing Music History Like Never Before

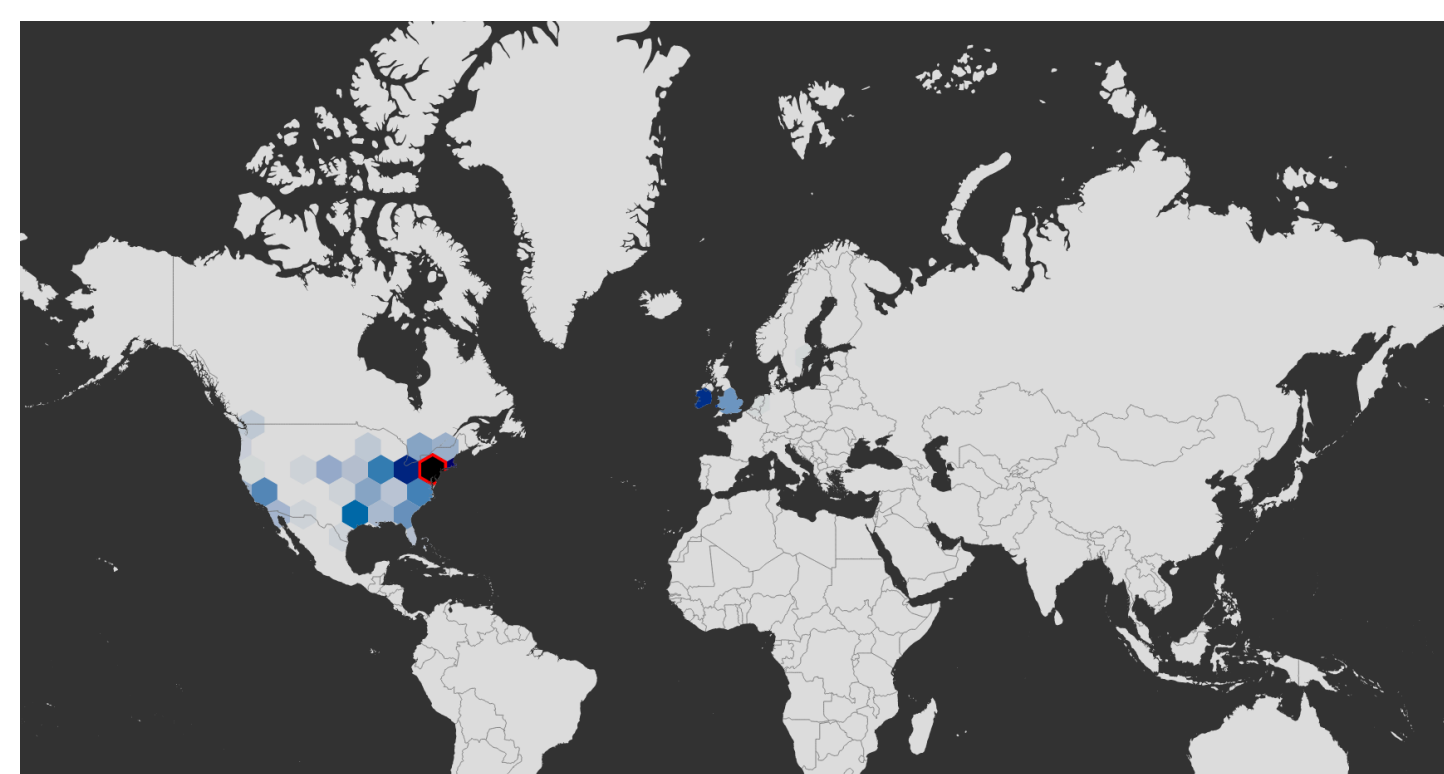
Problem

Music fans want to **learn about the performing histories of their favorite artists.**

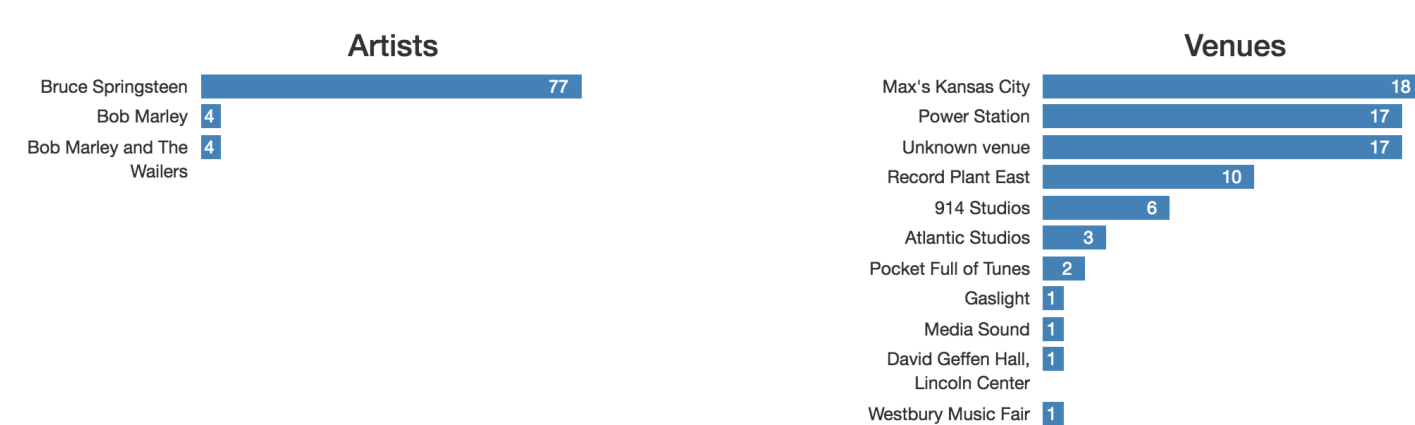
Currently, there are no effective public tools/apps for visualizing this information.

Motivation

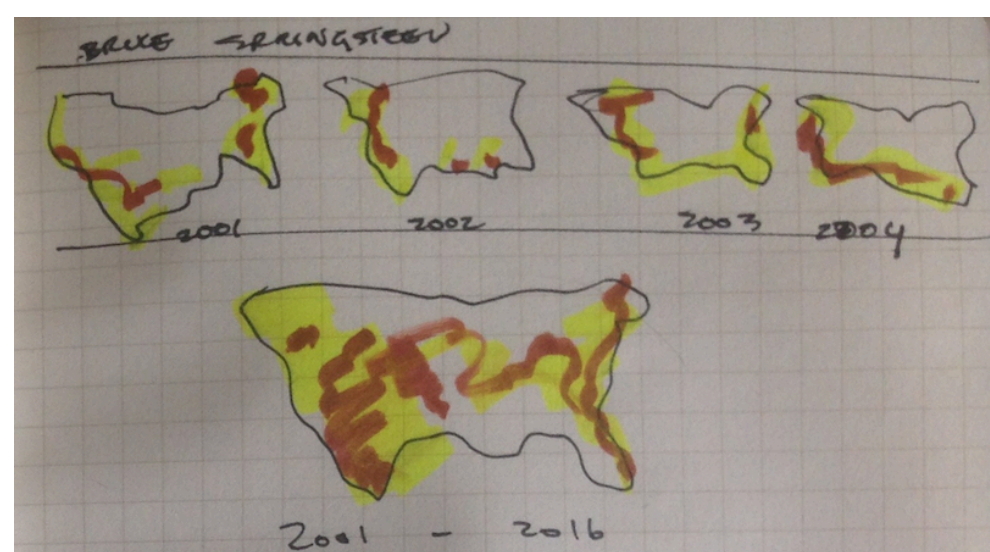
By creating an interactive visualization for artists' touring histories, we provide users with a way to learn more about their favorite artists. We hope that this helps satiate users' curiosity and facilitate their discovery of new artists. In addition, our project will have experimented with a novel approach to visualizing aggregate trends in the music industry over time.



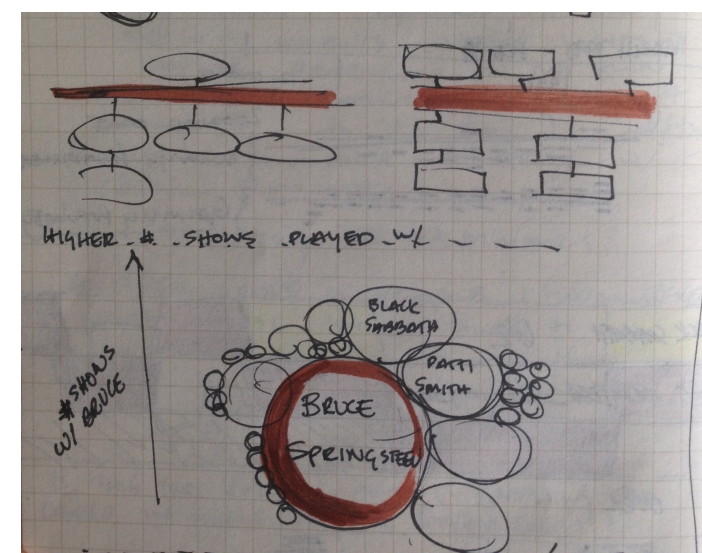
New York, NY, US



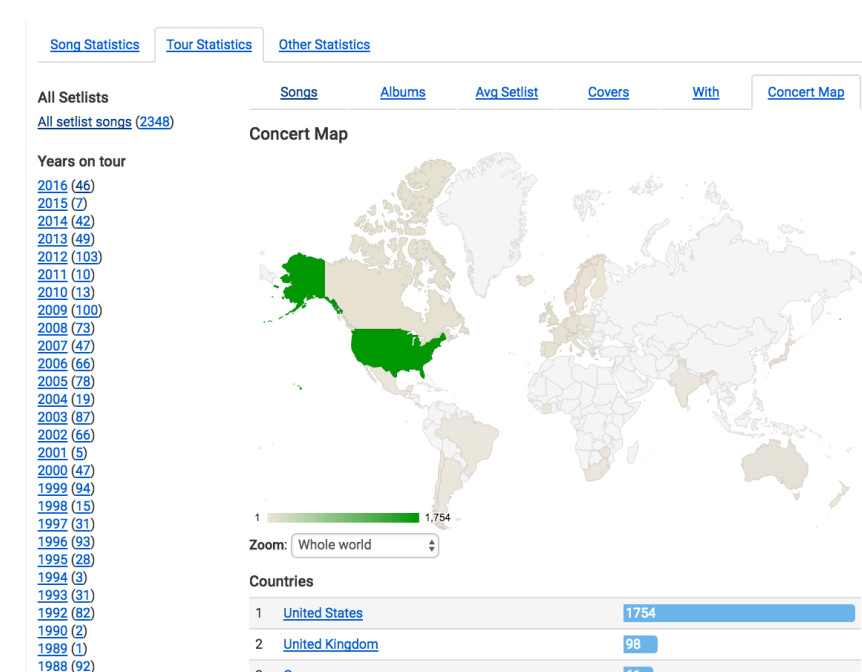
The heat-map view after a city has been selected. The lower panel displays how frequently an artist played in the city and the distribution of shows at different venues. This split-view allows users to see performance-related statistics for individual cities while still staying aware of the overall context.



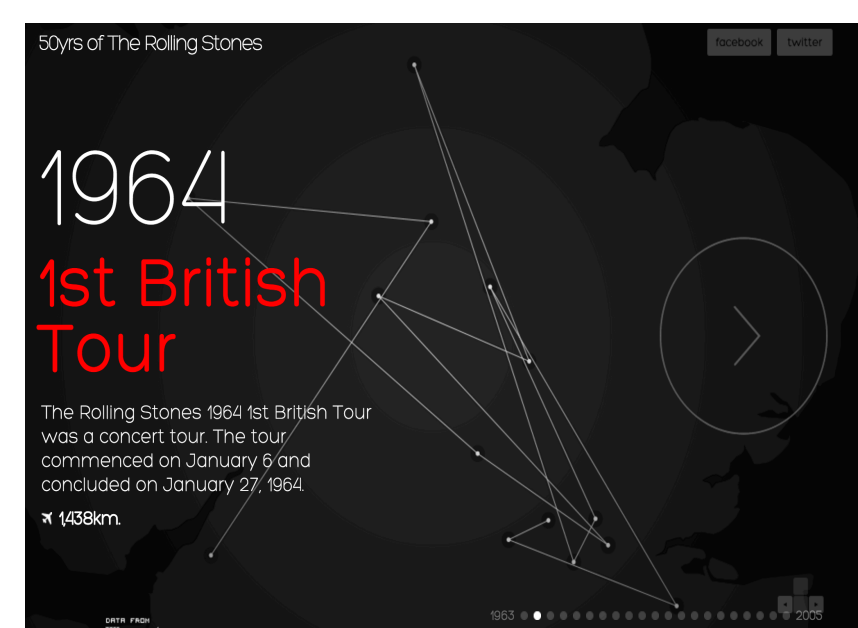
Design sketches of our heat-map.



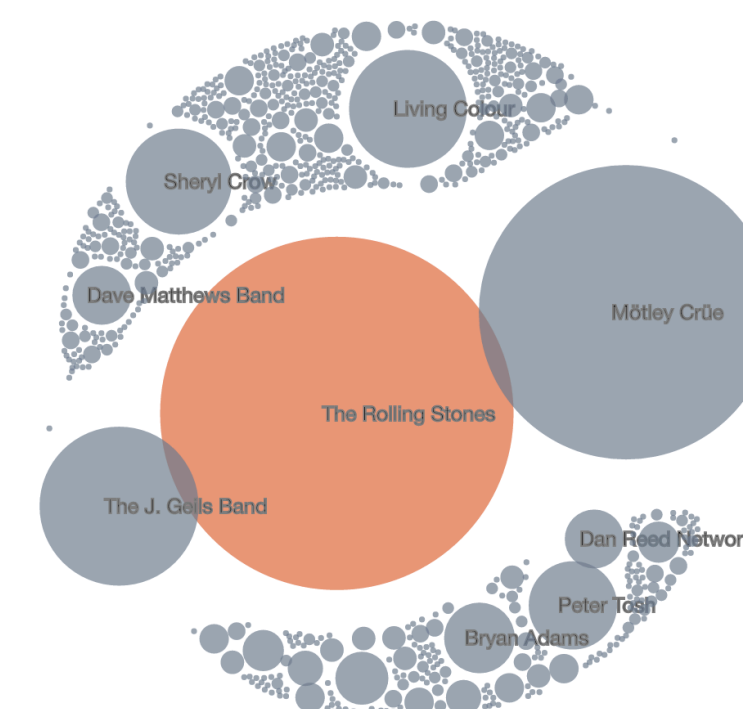
Design sketches of our bubble chart.



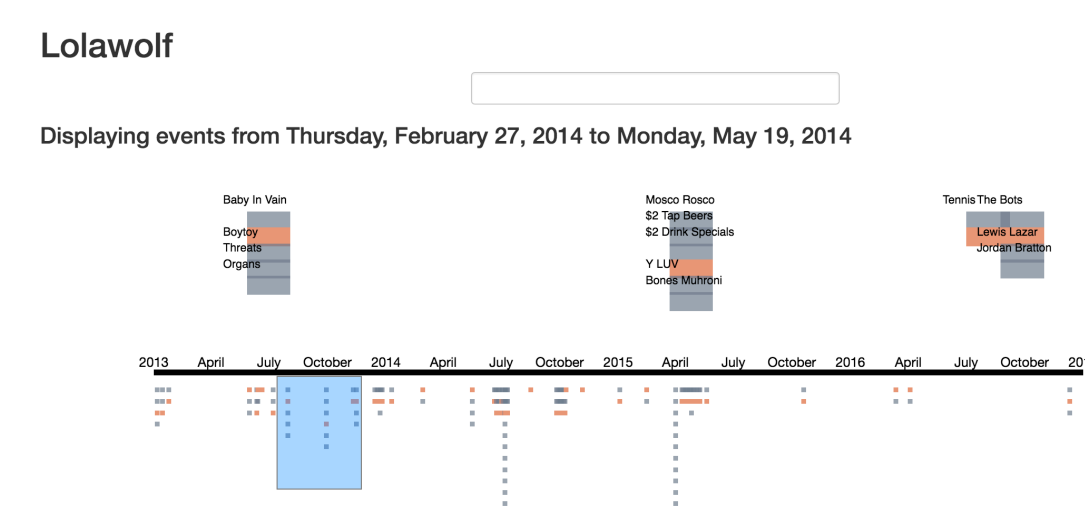
An existing choropleth of tour data for individual artists. Unfortunately, this visualization lacks enough granularity to provide any interesting regional trends.^[1]



An existing path-based visualization of tour data for individual artists. Unfortunately, this visualization lacks sufficient labeling or visual detail to communicate the points' significance. In addition, the paths between nodes are of no interest to the average user.^[2]



A force-directed bubble chart seemed like the most appealing way to quickly communicate who an artist has performed with most frequently.



Timeline visualization of an individual artist's touring history. The upper timeline panel allows a detailed view of the selected segment on the lower timeline. This UI allows users to see the types of shows the artist has played over time (festivals vs. small shows) and how important that artist was for each billing (headliner vs. supporting), in addition to visualizing the sequence of performances.

Approach

We started by researching appropriate data sources. We investigated manually web-scraping different websites for tour data, but realized these data were too sparse to be of use. Then, we discovered that Songkick has an open API that provides historical performance data. From scraping billboard.com, we derived a list of 2k top artists from which we aggregated data for 400k concerts from the Songkick API.

We used D3.js to create a hexagonally-binned heat map, that could be interactively filtered by time and artist. This improved upon previous work that relied on node-and-path charts, which often lacked detail and emphasized the uninteresting aspects of the data.

From this point, we extended our visualization to explore artist-level performing histories. Class feedback indicated that viewing an artist's related performing partners would be very interesting and potentially useful for discovering new music. For this visualization, we combined our map interface with a force-directed bubble chart and a timeline to give sequential performance history and aggregate information about the frequency of different touring partnerships.

Results

Because we decided to work with concert data from top artists, we immediately ran into challenges related to the scale of the data. First, creating an API was necessary to serve the appropriate data to the front-end given a user's requests. Searching through a static JSON file was too slow. Additionally, the scale of an individual artist's performing history also caused a lot of visual occlusion in the timeline and bubble charts. This necessitated that we experiment with different types of filtering and selective labeling.

We feel that this project was successful as a minimum-viable-product for a more refined visualization in the future. We prototyped new visualizations that directly addressed the interests of users and we determined that Songkick's data is sufficient for very detailed visualizations.

Future Work

We believe that the most desirable future extensions would further explore the similarity between artist's performing histories. Comparing the arc of different artist's careers might provide the basis for interesting predictive analytics or a better understanding of the influence network in the music industry.