

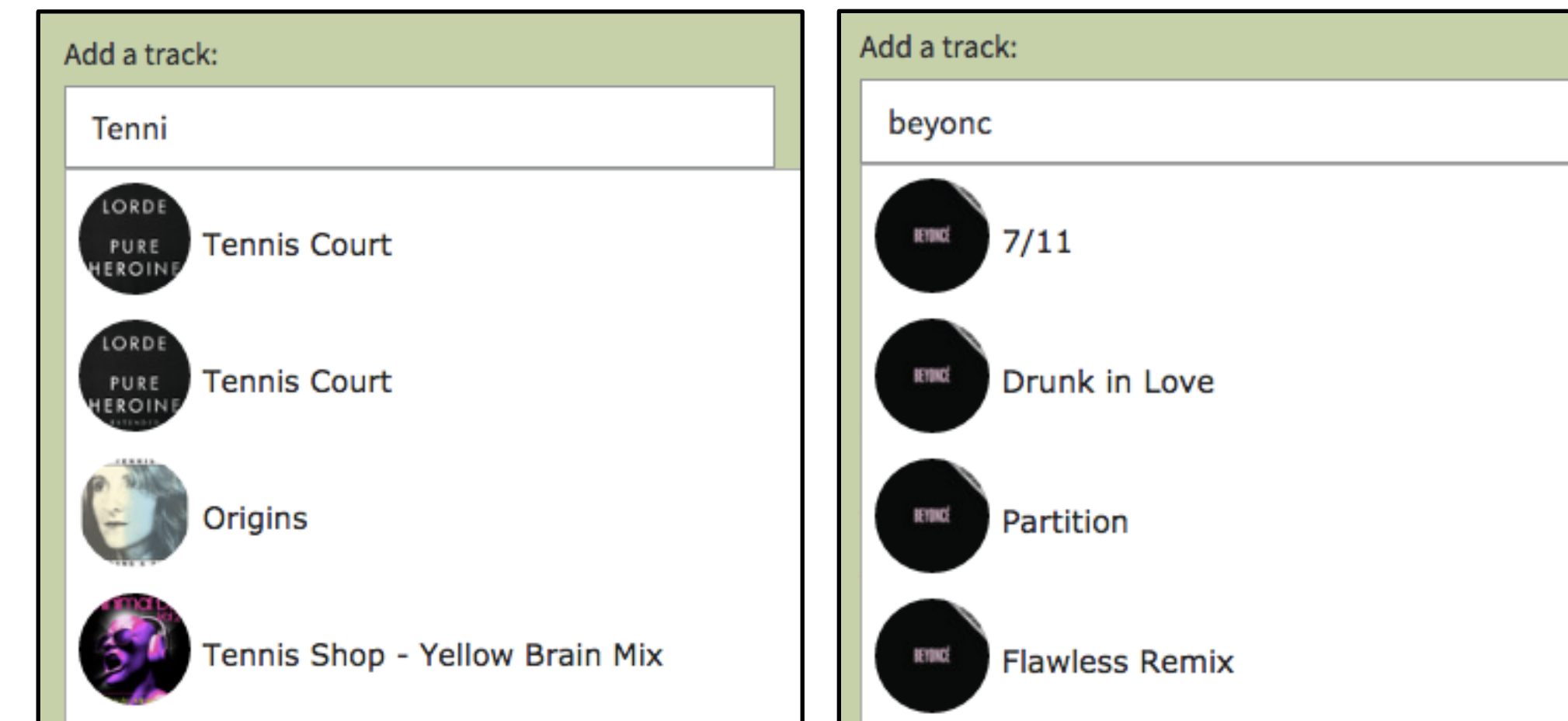
Audio Features Visualizer

Problem

On most music streaming service platforms like Spotify and SoundCloud, users can find only so much metadata on a particular song they like (i.e. artist name, album title).

Motivation

Most audio features are float values ranging from 0 to 1. Coming up with an effective way to communicate different float values that enable comparison against other values comprises an interesting visualization challenge.



Users can search for tracks by typing in parts of the song title, artist name, and album title.

Approach

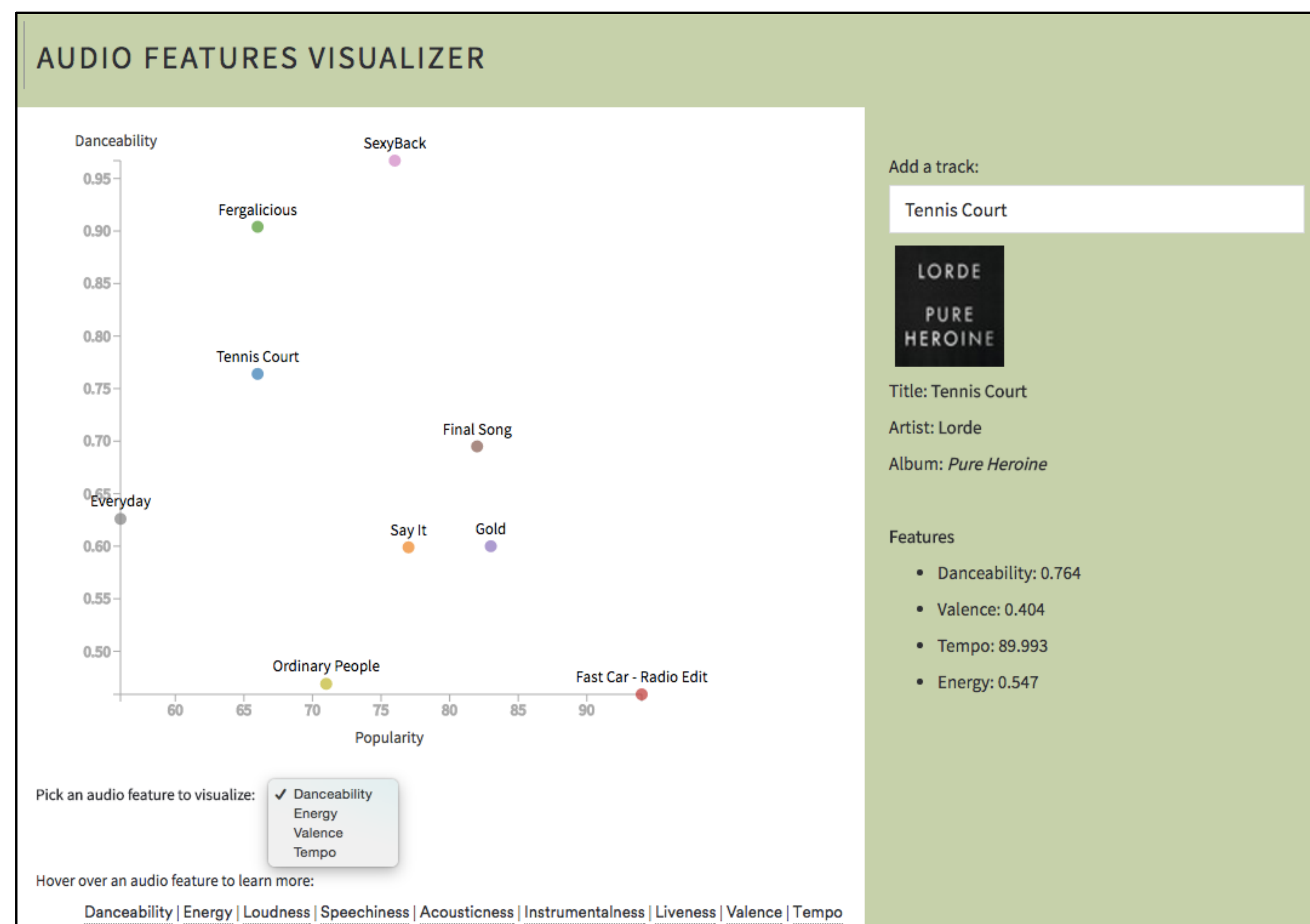
After trying out many forms of visualization including bar charts, gauge charts, and radial progress charts, we chose the two-dimensional scatter plot (which begins with danceability vs. popularity by default) because it's a simple yet effective medium that people are used to, and it leaves a lot of room for users to interpret the plot and reach their own conclusions. We used the Spotify API and D3.js to build a pipeline from track search to the main plot; the pipeline involved non-trivial data wrangling, ranging from forming, processing, and integrating individual queries to scaling the y axis based on the range (max - min) of the audio features of the dataset at any given moment.

Results

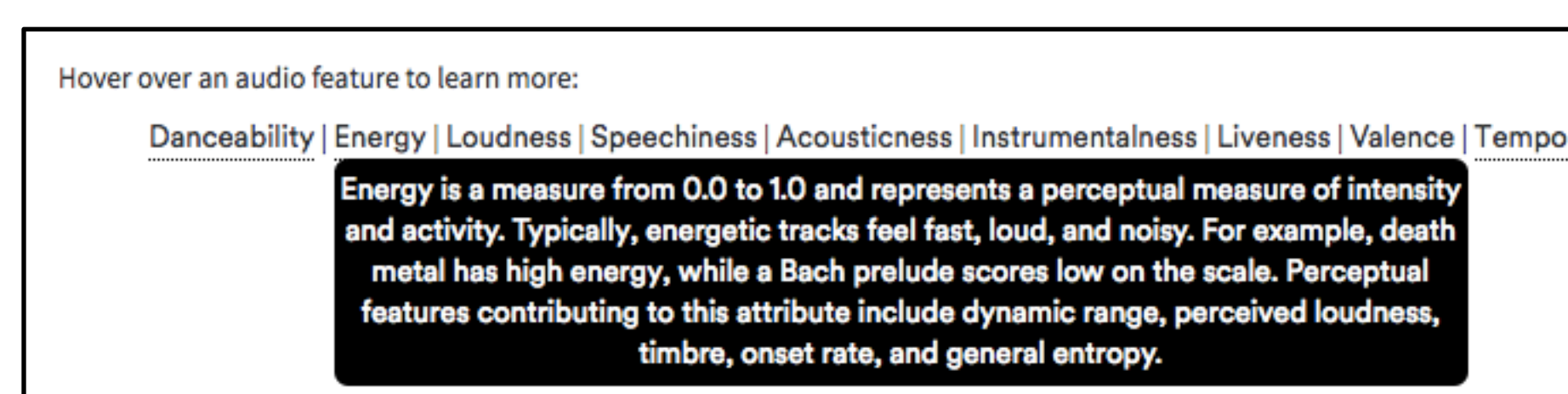
Please stop by our booth to play with a working demo— we would sincerely appreciate any feedback!

Future Work

In keeping with the theme of helping users learn more about their listening preferences, our work can be extended to place more emphasis on playlists and play history of one user; for instance, *what distinguishes songs played in January after a break-up from songs played right before graduation? Are some genres like Tropical House "happier" (higher valence values) than other subgenres of Deep House? Users will be able to answer these questions (and generate more interesting ones!) with a more flexible dashboard and a complete OAuth user authentication integration.*



The user has successfully searched for and added "Tennis Court" - Lorde to the main plot, and is about to change the y-axis to "Tempo" to find out where the song's BPM stands relative to the BPM of all the other songs in the seed playlist.



Users can learn what each audio feature metric represents by hovering over a feature label of interest.



Each individual point has metadata embedded through a tooltip, which is displayed on hover.