Yue Guo

**Final Project Proposal**

**Option#1**

**Problem / Question**

I have always wondered how bands make a decision on which place to tour and the route they take. Although the decisions often involve business side information and coordination of the tour managers and local venues, I am thinking of maybe I can generate an animated map that shows the route of where bands have toured in the past. If possible, the maps can also show the place that the band is going to in the future.

**The data**

The majority of the data will come from songkick.com and setlist.fm using the API provided, since they have geospatial information of the venue/location of the past events for artists.

Songkick: <http://www.songkick.com/developer/past-events-for-artist>

Setlist.fm: <http://api.setlist.fm/docs/index.html>

**Technologies used**

This animated map/routing idea came directly from the lab2 from week 9, for which we used Mapzen API and jQuery to geocode user input and create a route based on current location and destination. I think my project will involve using Songkick API, Setlist.fm API, Leaflet, jQuery, Turf, D3, Mapzen API(or other more accurate and more efficient tool for geocoding and routing).

**Design spec**

**User experience**

The animated web map is designed for fans, artists, tour managers, live performance companies to visualize the past (and potentially future) touring routes of the artists or bands they are interested in. The user will be asked to type in the name of the artist and click on a button that triggers the application and create an animation that shows the starting point—where the artists had their first show, and the point will move along on the map to every place the artists had toured in the past at a certain speed and stops at the latest place they have been. Places that have been visited for multiple times can be highlighted in different colors and countries or states that have been visited most frequently can be shown the name or be highlighted in different colors. The map can also show the countries/states that the artists have never been as a suggestion for future visits.

**Layouts and visual design**

This visualization is a huge inspiration: <http://chriswhong.github.io/nyctaxi/> . I think that my webpage will involve similar components: an animated map that occupies most of the screen, with explanatory information on the left side, time(year) as a bar in the bottom.

**Anticipated difficulties**

First, I need to know how Songkick API works and how to use it for my final project. Another anticipated difficulty is how to generate animated map based on the information returned and how to deal with large dataset when a band has toured in more than a thousand places in the past.

**Missing pieces**

* Further exploration with API
* Create animated map

**Option#2**

If Option#1 is too difficult for me, I will consider going with option#2, which I will use the data and model I am building for my capstone project and build a web-based map.

**Problem / Question**

My final project deals with the rent burden issue in Philadelphia. Rent cost burden is an issue when a household spends more than 30% of its income on paying rent. I have used demographic data and rent data to map out the spatial pattern of rent burden by neighborhood in Philadelphia in 2000 and 2010 and I want to find out the factors that are related to the occurrence and prevalence of rent burden in certain area and build a predictive model with the forecast data to predict rent burden in the future.

**The data**

I have collected data from various sources and so far I have:

1. Rent data by neighborhood by month from 2011 to 2015 (Zillow)
2. Demographic data by census tract and block group (U.S. Census Bureau)
3. DVRPC Demographic and Employment Forecast Data by Municipality - 2010 to 2040 (dvrpc)

**Technologies used**

ArcGIS, QGIS, R, jQuery, Leaflet.

**Design spec**

**User experience**

The map will consist of past and existing pattern of rent burden by neighborhood in Philadelphia and provides a reference for urban planning, city government, housing authorities and non-profit organization for development strategies and resource allocation. It will also show the pattern of potential occurrence of rent burden issue based on the predictive model I build. The use will be able to hover on the neighborhood and click for more information.

**Layouts and visual design**

There will be a choropleth map on the left and a side bar on the right. Beside the interactive choropleth map, there can also be graphs and charts to support visualization of the model and the prediction, placed in the side bar.

**Anticipated difficulties**

I am still at the stage of building the predictive model and I think this is the most difficult part of my project for now.

**Missing pieces**

model