Taking Gender Equity To the Streets

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Introduction

The Mayor's Office of Women's Advancement at the City of Boston aims to create more female representation within Boston through the renaming of various streets around the city. Boston's current demographics include 52% women, yet street names do not reflect this equal divide. By working on this project, we hope to help evolve and create a more inclusive and representative city to live in. We used many different developer tools to create this project including PyCharm, Python 3.7, Google APIs, Flask, MongoDB, and more.

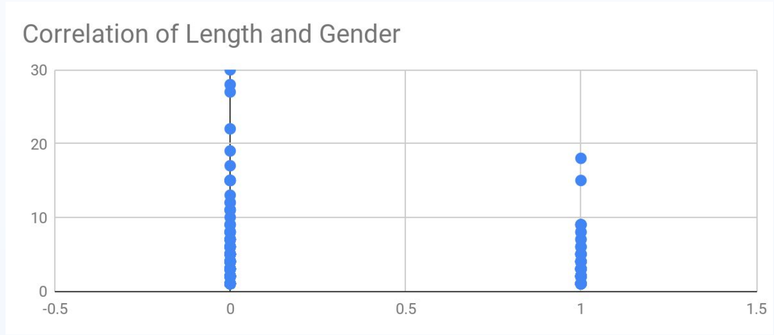
Data Collection/Transforms

- **Boston Street Names**
  - All street names in Boston, their genders, the zip codes they cover, and rank
- **Boston Landmarks**
  - All notable landmarks in boston as well as their addresses
- **Boston Public Schools**
  - All public schools in Boston and their addresses
- **Boston Neighborhood Zip Codes**
  - Each of the 23 neighborhoods in Boston and their zip codes.
- **Boston Zip Codes and their Geographic Locations**
  - All zip codes in Boston, used to gather Latitude and Longitude data for each street.
- **Unclaimed streets**
  - All streets that are not female gendered, at any Boston landmarks, nor at any Boston public schools
- **Streets and their neighborhoods**
  - Every unclaimed street and their neighborhood

Challenges

- **Traffic data collection/general data collection**
  - Finding relevant data regarding traffic other than Ubers- biased toward neighborhoods where people have access to smartphones and the financial means
  - Finding the most comprehensive data sets to contribute to streets that should NOT be renamed

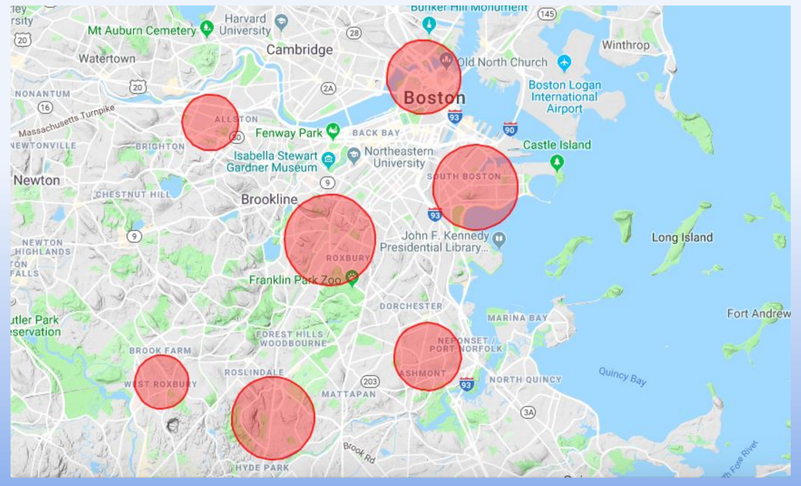
Statistical Analysis



Our calculations resulted in a **correlation Coefficient of -.0204** and a **P-Value of .1483.**Therefore, there is no significant correlation between the length of streets and how they are gendered, giving us a fair amount of varying lengths as possible renaming streets.

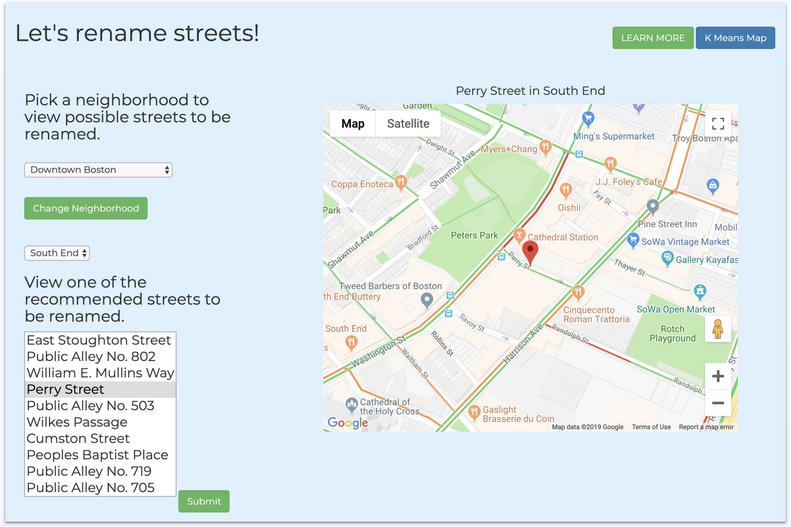
Optimization Technique

We used k-means clustering to find where the streets we are suggesting cluster. We used this data to see if there is a particular area where there are many more streets to be renamed. We got many different cluster sizes but no one area with most of the suggestions so we feel that there is a good dispersion of possible streets to be renamed.



Results

Our final result includes an interactive web-based visualization where one can choose a neighborhood and then view a list of the streets within that neighborhood that are potential streets to be renamed. A map is rendered to show any selected street.



*The example above shows **Perry Street** in the **South End.***

When grouping by neighborhood, we found that more populated/central neighborhoods, such as Downtown Boston had no possible streets to be renamed, whereas less central neighborhoods, such as Dorchester had 15+ possible streets to be renamed. This is relative to the datasets we collected and would continue to be altered as more datasets are considered.

Moving Forward

Regarding our data collection, we would definitely look further into traffic data such as cars, the T, and even foot traffic if the corresponding resources are available. Furthermore, we would pull in more information regarding colleges, famous athletes, etc. in order to narrow down the lists of streets within each neighborhood.

Within our web application, we would find it interesting to add a polling or voting functionality in order to gain the public opinion on specific streets being renamed.

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