BATTLE OF THE NEIGHBORHOODS

BUSINESS PROBLEM

This project will help answer the question of which Los Angeles City police station is located in the best neighborhood, using the following criteria:

- Arrests by neighborhood
- Neighborhood characteristics
- Coffee and donut shops located near police stations
- Ratings of nearby coffee and donut shops

The above information will be used as selection criteria based on the historical use of coffee and donut shops by police officers as hangouts during the day. These venues were most likely chosen because they have sugar-laden products that keep energy high and caffeine-laden products that promote alertness. High energy and alertness are key attributes for police work.

DATA TO BE USED

City of Los Angeles police stations

City of Los Angeles. (2018). *LAPD police stations*. Retrieved from
http://geohub.lacity.org/datasets/1dd3271db7bd44f28285041058ac4612_0

City of Los Angeles police divisions

City of Los Angeles. (2018). *LAPD divisions*. Retrieved from
http://geohub.lacity.org/datasets/031d488e158144d0b3aecaa9c888b7b3_0

Los Angeles Police Department arrests from 2010 to the present

Los Angeles Police Department. (2018). *Arrest data from 2010 to present*. Retrieved from
https://data.lacity.org/A-Safe-City/Arrest-Data-from-2010-to-Present/yru6-6re4

Venues within 500 meters of City of Los Angeles police stations

Foursquare.com. (2019). Retrieved from
https://api.foursquare.com/v2/venues/explore?&client_id=xxx&client_secret=xxx&v=20180605&ll=33.75766089658123,-118.28924155296859&radius=500&limit=100

METHODOLOGY

First, LAPD police divisions will be mapped and colored by arrest count from 2010 to the present to illustrate frequency of neighborhood arrests which indicates more serious crimes. LAPD police stations will then be added to the map to show number of police stations per neighborhood in comparison to the frequency of arrests.

Second, in the interest of workplace convenience, data from Foursquare.com will be used to map the locations of coffee and donut shops near each police station. Each shop will also display its visitor rating to determine the best coffee and donuts shops of those found.

Third, the top ten venues near each police station will be determined using data from Foursquare.com and analyzed for similarity using one hot encoding and k-means clustering.

Finally, based on neighborhood venues, coffee and donut shop ratings, and arrest counts, the "best" police station location will be determined.