ChiCrawl

Team-Beaver

Introduction

- What our project is about
- The type and source of the data we will use
- New technologies, data structures, and algorithms.
- Pictorial Summary

Our project - a web-based application

- It will generate a personalized bar crawl based on user preferences, like type of alcohol, maximum walking time, number of bars to visit
- Visualize itinerary on interactive map
- Integrating additional information, like location of transit hubs and popular tourist destinations (depending on our progress)

The Source of our Data

- Will use Yelp API to get data on Chicago bars
  - We will create JSON files that contain the name, location, hours, number of stars, number of reviews for all businesses in the category “bar” and the city “Chicago”
  - Store the information into a SQL database and assign each bar a unique ID number.

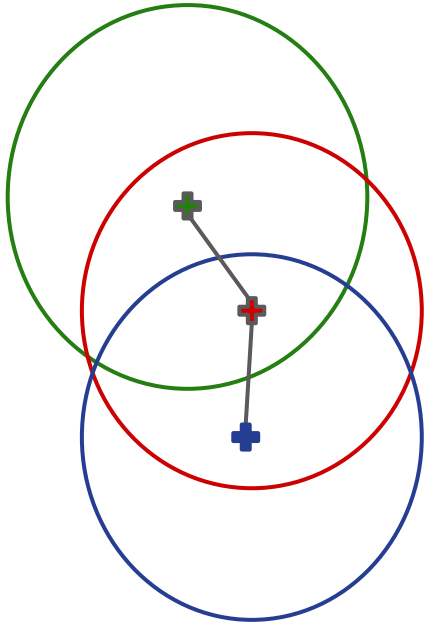
New technologies

- Django
  - It will be used as a base for our application
  - A server for our website
  - Other functionality will be incorporated into it
- Google Map JavaScript API
  - Interface to create our basic map functionality
  - Coordinates from Yelp data
  - Layers and customized maps will be implemented to show the crawler effect

Optimization Algorithm

1. Use a greedy algorithm based on the start location of bar crawl, number of bars to visit, and maximum walking time
2. Calculate the best matched bar within the walking time radius from the starting location
   a. query database for bars within radius with matches for search terms like “craft beer” and Yelp categories like “good for groups”
   b. pick the bar with the highest weighted ranking
   c. repeat query at that bar

Map of bars



Weighted Ranking System

1. Get number of stars and number of reviews for each bar from Yelp data
2. Remove all bars with fewer than 5 reviews
3. Use “Bayesian average” to calculate weighted ranking

weighted rating (WR) = $(v \div (v+m)) \times R + (m \div (v+m)) \times C$

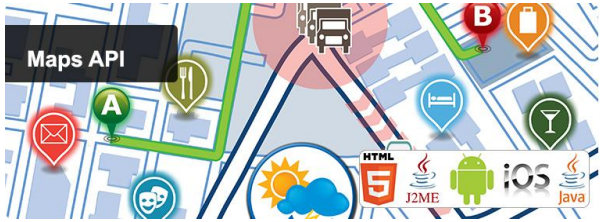
Where:

- R = average for the bar (mean) = (Rating)
- v = number of reviews = (votes)
- m = minimum reviews required to be listed (5)
- C = the mean number of stars for bars in Chicago with more than 5 reviews

Pictorial Summary

Yelp

Django



Google Maps