Proposal: A Web Application for Discovering Restaurants Near Me

Project Summary

Our project aims at building a web application that makes the decision on where to eat for people. The data we store are restaurants' information, users' profiles, and their history and preferences for restaurant selection.

Essentially, all the user has to do is to click the button and the restaurant generator will give one recommendation in the vicinity based on the user's and others' dining history. The user can also manually add preferences or search criteria each time to narrow recommendation or add tags to their profile if they would like to be recommended based on the choices of other people who share the same tags.

Detailed Description of the Application

This application is made for generating a restaurant to dine at the moment.

Upon opening the website page, the system would ask for the location of the user, the user can enter manually or give the application permission to access the device's current location. A table will be built and stored with all restaurants' information around the location entered.

The user can also specify certain restrictions in their search, such as the price range, distance range, the kind of food they want, or they can be adventurous and let the system "randomly" recommend something to me. Except that the "random" recommendation is not completely random. The app records the history of user's each dining choice and they can input whether they want to visit it again. This history is maintained as another table.

In the case of too few or even absent history selection for a new user, they can tag themselves with attributes like "spice-lovers" that are provided by us, so that we can match for these attributes and make recommendations based on other user's history and the restaurants' attributes.

Essentially, we only output one choice for the user at a time, so the app is basically making the decision for the user. The experience would be like drawing a lottery, making the app less of a "yelp", and giving it more fun.

The recommendation algorithm can be as naive as a random selection but can also be integrated with a great amount of machine learning features, which might satisfy the extra credit function's requirement.

Usefulness

Some people (like myself, Ben) aren't particularly picky, but they're indecisive as hell. On a day where I might spend 10 minutes deciding where to eat with my girlfriend, an app that can make random-ish suggestions while taking into account some of my preferences would save all that time!

Realness

We will use data from google maps to build a table of restaurant names and their locations as well as a table for restaurants and some attributes about the type of restaurant that it is. We will also maintain tables for user authentication as well as user preferences and user history. The backend will likely be a Flask application and the frontend will likely be done in JavaScript.

Functionality

We would create a table that stores the preferences and location of each user. Users are able to insert his or her own information into this table when they create accounts on our website, and will be able to update their own preference. When they decided to unsubscribe to the website, we would delete the information from the table.

UI mockup

P1: Obtain a random recommendation

P2: Obtain a random recommendation under some constraints

P3: User page profile: add tags for better recommendation, and log in to build dining preference history which will be incorporated into the recommendation above.

Project work distribution

Zhenan Shao: Frontend features and basic UI.

Ben Evanoff: Create restaurant tables and fill them with data from Google. Also user history front+back

Yanzhen Shen: Create backend API endpoints to be used by frontend (authenticate login, fetch recommendation, update history, update preferences)

Yuanfeng Li: Processing data and creating recommendation algorithms.