**Group Name:** chicaGoEat

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**Description of the Project and Its Goals**

Introduction and Background

* There exist many different platforms for ordering food (i.e. GrubHub, UberEats, etc.) and this is a way to centralize all your orders (take-out & dine-in) and see them together
* Restaurant recommendations are particularly useful in urban and metropolitan areas like Chicago that have high densities of restaurants.
* Can be applicable to a large audience since everyone has to eat and the personalization of the recommendations makes it that everyone can enjoy it
* The project is based on the restaurants in Chicago

Goal

* Help Chicago diners keep track of their eating history and eating habits through summary statistics and data visualizations
  + Eating habits include what type of food they like, when do they usually order food, and the price range they prefer. Similarly, eating history will include similar information but is based on real orders.
* **Provide restaurant recommendations** based on their eating history, self-report eating habit, and one-time preferences

**Data Sources**

Yelp open-access dataset (a JSON file) at <https://www.yelp.com/dataset/download>

Opentable website (<https://www.opentable.com/>) for scrapping additional information, as well as an API at <https://opentable.herokuapp.com/>

**Software Implementation and Functionality Overview**

STANDARD RECOMMENDATION

Provide **restaurant recommendations** based on users’ eatin preferences, eating history and eating habit:

* User will first enter the a one-time eating preference, which includes price range, restaurant type, parking availability, etc.
* The software will filter for those criteria and rank the restaurants in the database in the order of a weighted score based on number of reviews, average rating, and possibly the location.
  + If the number of restaurants satisfying the criteria < 10, also filter for the ones that fall into upper and lower 1 level of each criteria. Keep filtering for the next upper and lower level of the criterias until there are 10 recommendations.
  + If the number of restaurants that satisfy a specific restaurant type < 10, fill the rest of the spots with **half** being the top several restaurants solely based on the weighted rating of the number of reviews, average rating, and location; and **another half** being the top several restaurants based on self-reported eating habits as well as the weighted rating.
  + Default searching result (i.e. the user doesn’t provide any one-time preferences): same logic as the bullet point above
* “Don’t show restaurant again,” where the user can choose to remove a restaurant from their recommendations

TRY SOMETHING NEW

Random selection from restaurants other than the 10 restaurants generated by standard recommendation by default.

EATING HABITS SUMMARY

Provide summary statistics and (downloadable) data visualizations that provides insights into the user’s eating habits solely based on the user inputted eating history.

**List of Tasks and Timeline**

Week 4:

1. Obtain open-access Yelp Dataset
2. Iterate through dataset and store desired information for businesses located in Chicago
   1. Name, location (postal code, latitude and longitude), star rating, number of reviews, take-out option, parking, categories (cuisine type), and hours
3. Use names of stored restaurants to extract corresponding Opentable URLs using the Opentable API
4. Using the URLs extracted to scrape pages on Opentable for supplementary information
   1. Overall ratings, categorical ratings, number of reviews, neighborhood, dining style, dress code, etc
5. Harmonize overall ratings between Yelp and Opentable
6. Store information gathered above in CSV, each row representing information for one restaurant

Week 5:

1. Develop the Chicago restaurant database
2. Develop the user eating history database
3. Develop, implement, and test recommendation algorithm based on gathered data from Week 4

Week 6:

1. Finish recommendation algorithm from Week 5

Week 7:

1. Data visualizations for user eating habits based on the dining history

Week 8:

1. Implement a text-based user interface for recommendation software. If we have more time, we may consider designing a website.

Week 9:

1. Turn in software and documentation BY March 11th at 4:30pm