New York City Restaurant Program User Manual
Programming for Data Science
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According to the New York City Department of Health and Mental Hygiene (2015), Unannounced inspections of restaurants happen at least once a year. Inspectors check for compliance in food handling, food temperature, and personal hygiene and vermin control. Each violation of a regulation gets a certain number of points. At the end of the inspection, the inspector totals the points, and this number is the restaurant's inspection score.

Program Overview

Our program explores visually explore the state of New York City restaurants with respect to theses inspections courtesy of The City of New York (https://nycopendata.socrata.com/). In addition, users can build their own list of restaurants and explore different inspection violation descriptions that are given to these restaurants. Our program includes web scraped data from Yelp (www.yelp.com) to enhance user experience by letting them build their own list of restaurants to vis-à-vis our program and check to see how it stacks up to other restaurants we explore.

The Data Sets

This program use two major datasets: 1) DOHMH New York City Restaurant Inspection Results data downloaded from the City of New York and 2) Yelp data scraping with Python. Getting Yelp data requires that users enter the yelp link of their restaurant of choice to build a yelp data set, this offers users with a dynamic experience highly customizable to their preferences.

Mandatory Dependencies

The program is in a Python script and intended to be used in the terminal. You will need Python Version 2.6 or 2.7 to run the program. The following Python packages are required for the program to work.

- Numpy
- Matplotlib
- Pandas
- lxml

Getting Started

The following need to be done in order to get the program up and running.

1. Find our program at https://github.com/ds-ga-1007/final_project in the thk301 directory.

2. Fork from https://github.com/ds-ga-1007/final_project

3. Download a copy of the DOHMH New York City Restaurant Inspection Results data in csv format.

Make sure the name of the file reads as the following:
"DOHMH_New_York_City_Restaurant_Inspection_Results.csv"

If you don't have a copy of the file, you can download it at:
https://data.cityofnewyork.us/Health/DOHMH-New-York-City-Restaurant-Inspection-Results/xx67-kt59

4. Move all files from GitHub and the "DOHMH New York City Restaurant Inspection Results.csv" file into one directory.

5. When all files are in one directory, change to that directory and run the following command in your terminal:

$ python restaurant.py

You should then see the following on your screen:

```
******************************
Please select from following:
Type in 1 to See violations of popular restaurants in NYC
Type in 2 to View the Heatmap of NYC restaurants
Type in 3 to Explore the restaurant and the number of violations in your RestaurantKeeper
Type in 4 to Explore restaurants in your RestaurantKeeper grouped by types and the number of violations
Type in 5 to Explore violations of popular restaurants in NYC grouped by types
Type in 6 to Add a restaurant to your Restaurant Keeper
Type in 7 to Quick View of my Restaurant Keeper
Type in 8 to Full View of my Restaurant Keeper
Type in 9 to Reset my Restaurant Keeper
Type in 0 to Quit
******************************
What is your choice?
```

Program Menu
From here on the following are instructions to interact with the program features. We will take you step by step through the menu.

Option 1: See violations of popular restaurants in NYC
Gives users a graph of popular restaurants in NYC and their number of inspection violations. The graph breaks down the count of violations by critical or non-critical violations classified by New York City Department of Mental Health and Hygiene. You can move your mouse around the chart and see the data on the bottom of your screen. Once you are finished you can exit the graph pressing the exit button in the upper left corner of the GUI. We automatically save a pdf file of the graph in your working directory.

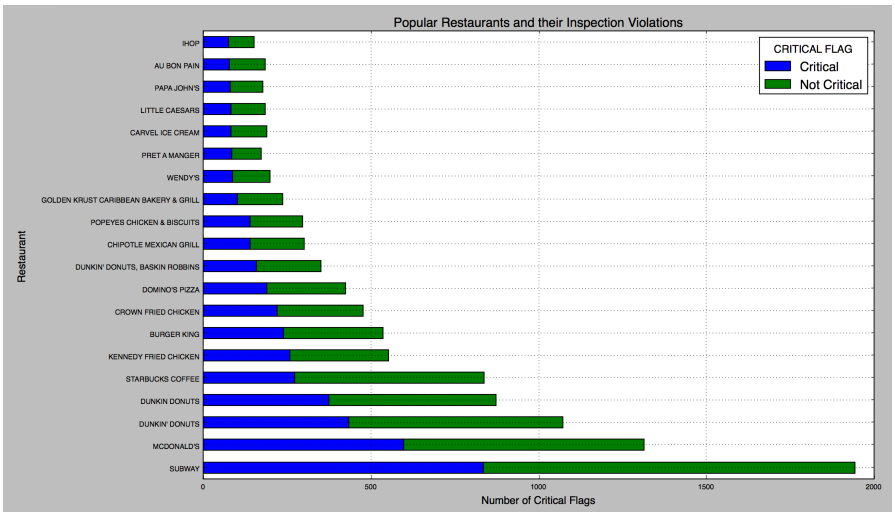

Figure 1. Option 1 output

Option 2: View the Heatmap of NYC restaurants

Gives users a pop up heatmap of average violations scores broken down by NYC borough and popular restaurant cuisine. The darker colors represent higher scores, which indicate a poor inspection score (please read http://www.nyc.gov/html/doh/downloads/pdf/rii/how-we-score-grade.pdf for more information). You can look at the printed scores in the terminal to help you navigate the heathmap. Once you are finished you can exit the graph pressing the exit button in the upper left corner of the GUI. We automatically save a pdf file of the graph in your working directory.

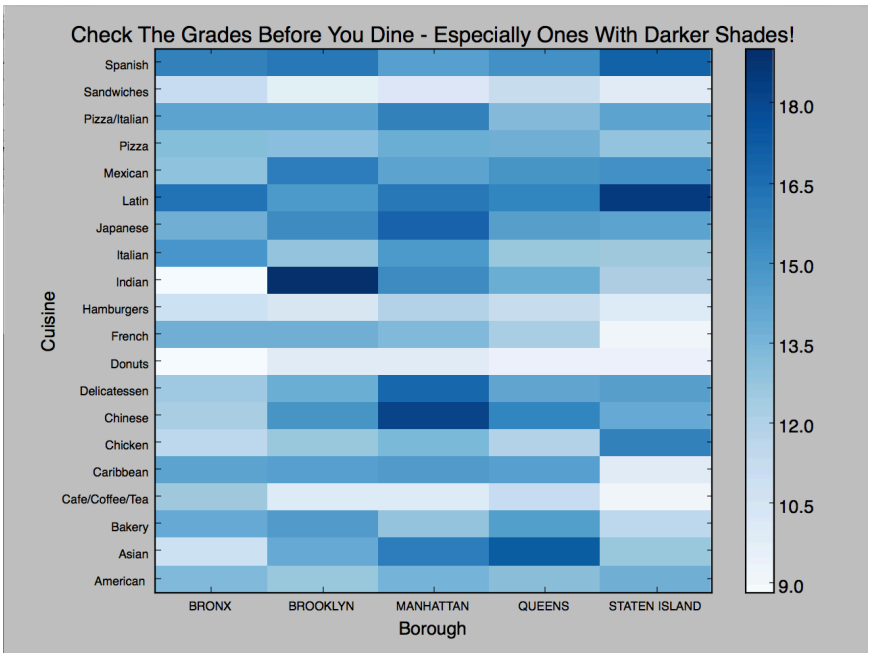

Figure 2. Option 2 output

Option 3: Explore the restaurant and the number of violations in your Restaurant Keeper

Gives users a pop up graph of violations broken down by restaurant and number of violations. Again users will see the difference between violations by their critical or non-critical status. You can move your mouse around the chart and see the data on the bottom of your screen. Once you are finished you can exit the graph pressing the exit button in the upper left of your browser. We automatically save a pdf file of the graph in your working directory.

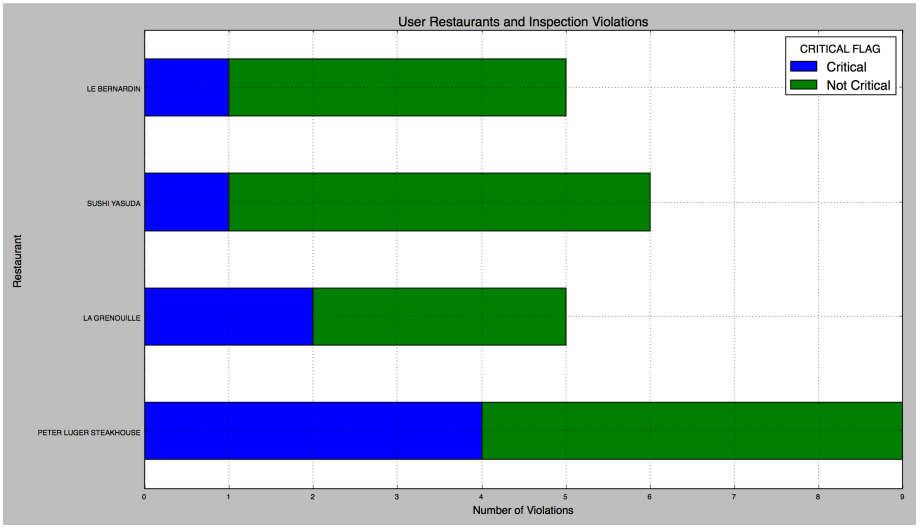

Figure 3. Option 3 output

Option 4: Explore restaurants in your Restaurant Keeper grouped by cuisine types and the number of violations

This option allows users to explore the different types of popular New York restaurants cuisine and the amount of critical or non-critical violations with respect to the user's personal restaurant list. You can move your mouse around the chart and see different data points on the bottom of your screen. Once you are finished (exit in the upper left corner of the GUI) you we be returned to the menu. We automatically save a pdf file of the graph in your working directory.

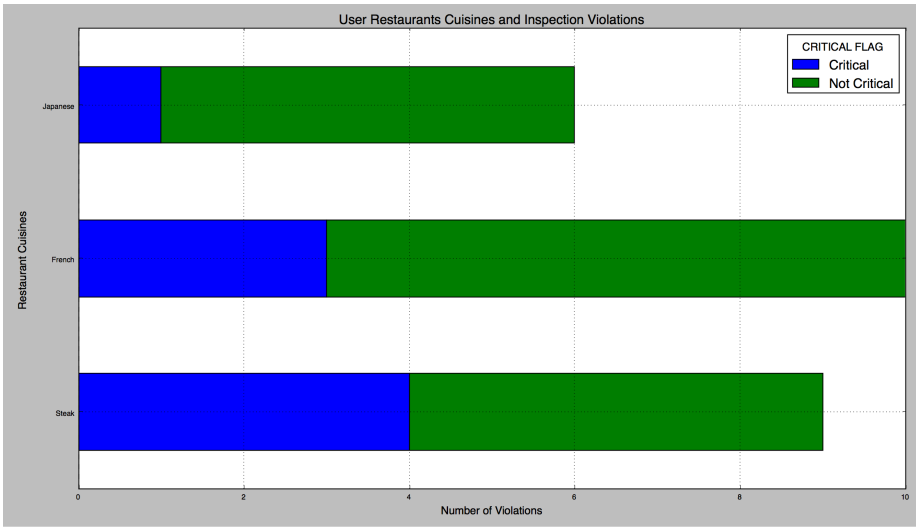

Figure 4. Option 4 output

Option 5: Explore violations of popular restaurants in NYC grouped by types
This option allows users to explore the different types of popular restaurants in New York City relative to their amount of critical or non-critical violations. You can move your mouse around the chart and see the data on the bottom of your screen. Once you are finished you can exit the graph pressing the exit button in the upper left corner of the GUI. We automatically save a pdf file of the graph in your working directory.

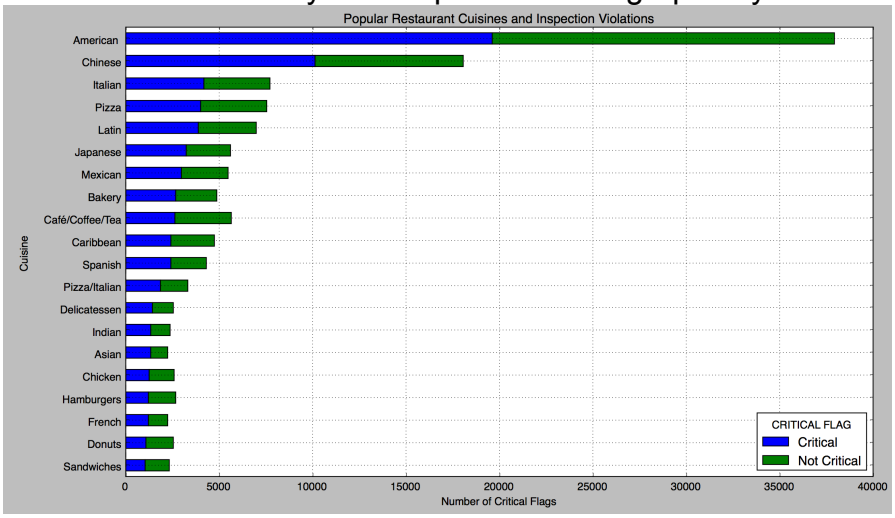

Figure 5. Option 5 output

Option 6: Add a restaurant to your Restaurant Keeper
Allows users to create and maintain a list of restaurants by inputting the restaurants yelp link into the terminal. After the user provides a restaurant link, the program scraps information from the restaurant web page and saves it to a file called "restaurant_list.csv" in the working directory.

In-depth example:

When option 6 is selected, the following prompt will come up:

Please copy and paste the Yelp's link of the restaurant that you would like to add
e.g. http://www.yelp.com/biz/bouley-new-york-2
---->
After the ---->

The user should input the link of their yelp of choice into the terminal. For example:

Please copy and paste the Yelp's link of the restaurant that you would like to add
e.g. http://www.yelp.com/biz/bouley-new-york-2
*----> **http://www.yelp.com/biz/sushi-yasuda-new-york***

Press enter and the user should receive a confirmation in the terminal and be redirected to the main menu. For instance, you should see the follow:

****
Sushi Yasuda is successfully added

****
Please select from following:
Type in 1 to See violations of popular restaurants in NYC
Type in 2 to View the Heatmap of NYC restaurants
Type in 3 to Explore the restaurant and the number of violations in your RestaurantKeeper
Type in 4 to Explore restaurants in your RestaurantKeeper grouped by types and the number of violations
Type in 5 to Explore violations of popular restaurants in NYC grouped by types
Type in 6 to Add a restaurant to your Restaurant Keeper
Type in 7 to Quick View of my Restaurant Keeper
Type in 8 to Full View of my Restaurant Keeper
Type in 9 to Reset my Restaurant Keeper
Type in 0 to Quit
****

IMPORTANT: Users are only allowed to enter one yelp link at a time. The user is not allowed to copy and paste multiple links and input it into the terminal. Again, the user must enter a link one at a time.

Option 7: A Quick View of my Restaurant Keeper

When option 7 is selected, the user should see something like this in their terminal. This option allows the user to check their list easily in the terminal. The following is an example of the quick view:

There are 4 restaurants in your Restaurant Keeper
----------1----------
Name: LA GRENOUILLE
Phone Number: 2127521495
Address: 3 E 52nd St
WEB: la-grenouille.com
PRICE: $$$$
DESCRIPTION: French
----------2----------
Name: LE BERNARDIN
Phone Number: 2125541515
Address: The Equitable Bldg155 W 51st St
WEB: le-bernardin.com
PRICE: $$$$
DESCRIPTION: French
----------3----------
Name: PETER LUGER STEAKHOUSE
Phone Number: 7183877400
Address: 178 Broadway
WEB: peterluger.com
PRICE: $$$$
DESCRIPTION: Steak
----------4----------
Name: SUSHI YASUDA
Phone Number: 2129721001
Address: 204 E 43rd St
WEB: sushiyasuda.com
PRICE: $$$$
DESCRIPTION: Japanese

Above there are five restaurants present, meaning the user had to have entered 5 yelp links to the restaurants they wanted to explore.

Option 8: Full View of my Restaurant Keeper

This option allows the user to see their pull list in the terminal. If they to prefer to look at the list in more detail, they should look in the resturant_list.csv file saved in their directory.

```
What is your choice? 8
                ADDRESS       CITY            DBA_fromYelp  \
0               3 E 52nd St  New York          La Grenouille
1               3 E 52nd St  New York          La Grenouille
2               3 E 52nd St  New York          La Grenouille
3               3 E 52nd St  New York          La Grenouille
4                 3 E 52nd St  New York        La Grenouille
5               204 E 43rd St  New York        Sushi Yasuda
6               204 E 43rd St  New York        Sushi Yasuda
7               204 E 43rd St  New York        Sushi Yasuda
8               204 E 43rd St  New York        Sushi Yasuda
9               204 E 43rd St  New York        Sushi Yasuda
10              204 E 43rd St  New York        Sushi Yasuda
        PHONE PRICE  REVIEW              WEB              DBA  \
0   2127521495  $$$$    231  la-grenouille.com          LA GRENOUILLE
1   2127521495  $$$$    231  la-grenouille.com          LA GRENOUILLE
2   2127521495  $$$$    231  la-grenouille.com          LA GRENOUILLE
3   2127521495  $$$$    231  la-grenouille.com          LA GRENOUILLE
4   2127521495  $$$$    231  la-grenouille.com          LA GRENOUILLE
5   2129721001  $$$$   1322     sushiyasuda.com         SUSHI YASUDA
6   2129721001  $$$$   1322     sushiyasuda.com         SUSHI YASUDA
7   2129721001  $$$$   1322     sushiyasuda.com         SUSHI YASUDA
8   2129721001  $$$$   1322     sushiyasuda.com         SUSHI YASUDA
9   2129721001  $$$$   1322     sushiyasuda.com            SUSHI YASUDA
10  2129721001  $$$$   1322     sushiyasuda.com         SUSHI YASUDA
```

Option 9: Reset my Restaurant Keeper

Option 9 allows users to reset their restaurant list (by deleting csv that is used as database) so that create a new one from starch. When the user selects option 9, they should be redirected back to the main menu and get a confirmation that looks like this:

```
The list is successfully deleted
******************************
Please select from following:
Type in 1 to See violations of popular restaurants in NYC
Type in 2 to View the Heatmap of NYC restaurants
Type in 3 to Explore the restaurant and the number of violations in your RestaurantKeeper
Type in 4 to Explore restaurants in your RestaurantKeeper grouped by types and the number of violations
```

Type in 5 to Explore violations of popular restaurants in NYC grouped by types
Type in 6 to Add a restaurant to your Restaurant Keeper
Type in 7 to Quick View of my Restaurant Keeper
Type in 8 to Full View of my Restaurant Keeper
Type in 9 to Reset my Restaurant Keeper
Type in 0 to Quit
****

Option 0: Quitting The Program

When the user wants to leave the program, in the main menu they have the option of selecting 0. Once they select 0 they will end the program. The list of restaurants will be saved and when they return they can pick up where they left off! Have fun with the program, and eat healthy and safely!