Team member

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Theme

Our project mainly aims to show users different kinds of information of the restaurants in the yelp dataset. We build a GUI to let the users interact with our application. We offer six main functions in this application, and we'll introduce them later.

Dependencies

In order to run the application, you should make sure that you are in a **linux** environment. And our project is working in **Python 2.7**. Besides, you should make sure you have the following packages in your python:
Numpy: 1.7 or higher
Pandas: 0.14.0 or higher
Matplotlib: 1.3.0 or higher
Tkinter

Run the program

In order to run the program, you should use command **cd** to come into the folder **yl2695** in the terminal. Then you can type **python main.py** in the terminal and this will enable you to run the program.

Output of the program

We have six main buttons in our program which stands for six main functions, when you click on each button, a new window will appear.

1. "Search Restaurants by Name" button:
Input:
you can input a partial name or a full name of a restaurant in the entry the window provides, and then click the **'Search' Button** on the window to search for it. **For example**, you can type 'siam' in the entry.

Output:
After clicking **'Search' Button** on the window, you will see some information of the restaurants whose names match your input. And for the window' length is limited, if the name you input contains more than 15 restaurants in our dataset, we'll just show you the first 15 restaurants in the window. You can see these restaurants' name, city, state and the average stars of them. **For example,** you can type 'a' in the entry.

Before you search for another name, you should click on the '**Clear**' Button first to remove the information on the window. By clicking 'Clear' on the window, you can clean the restaurants' information showed on the window.
And by clicking **'3D plot' Button** on the window, you will see a 3D plot showing the star, latitude, and longitude information of those restaurants whose names match your input. And for too many restaurants share the same partial name, if the number of restaurants you search is more than **50**, we will just show you the first 50 restaurants' 3D figure.

Warning:
If the name of the restaurants you search does not exist in our dataset, there will appear a new window showing **"Sorry, finding no restaurant of this name, please try again." For example**, you can type 'aaaaaaaaa' in the entry.

2."Search Restaurants by popularity" button:
Input:
You are expected to input a state's name in the state's name entry in this window. The the state's name is expected to be in ['WI', 'AZ', 'NV', 'CA', 'ON', 'EDH', 'ELN', 'MLN', 'NY', 'KHL']. However, you can input the state's name in a lowercase. This doesn't matter. **For example: 'wi'** Then you can input the number of top restaurants you hope to see in the number entry. **For example: 5**.

Output:
After clicking the **'Show' Button**, you will see the top restaurants' main information of the state you input on the window. And for the window' length is limited, if the name you input contains more than 11 restaurants in our dataset, we'll just show you the first 11 restaurants in the window. You can see these restaurants' name, city, price range and the average stars of them.
Before you search for another name, you should click on the '**Clear**' Button First to remove the information on the window. By clicking 'Clear' on the window, you can clean the restaurants' information showed on the window.
And by clicking the **"Plot star and review counts" Button**, you will see the restaurants' star and review counts they totally get that you search.

Warning:
If the state's name is not in our dataset or the number of top restaurants you input is incorrect, there will appear a new window showing **"Sorry, your input is wrong, please try again."**

3."AZ's popular restaurants' review changes" button:
Input:
In this window, we will plot the review stars changes of some restaurants' during time, as this might reflect the change of the quality and popularity of certain restaurants, for given number of top restaurants in given state. (Because of the limits of our records, we will do analysis on state

AZ only. We may also restrict the number of top popular to be smaller than a given threshold(say 5) because of the size of the canvas. You are expected to input the number of restaurants you want to see in the entry. For now, you can only input **1 or 2 or 3 or 4 or 5.**

Output:
By clicking the **"Show review counts distribution" Button**, **y**ou will see a picture showing the specific restaurants stars they get during the time period.

Warning:
For the reason of our dataset, you can only input the number 1, 2, 3, 4 or 5 in the entry. If the number you input is wrong, there will appear a new window showing **"Sorry, your input is wrong, please try again."**

4. "Search restaurants by expense" Button:
Input:
In this window, you are expected to input a state's name, the price range, and the number of restaurants. The the state's name is expected to be in ['WI', 'AZ', 'NV', 'CA', 'ON', 'EDH', 'ELN', 'MLN', 'NY', 'KHL']. However, you can input the state's name in a lowercase. This doesn't matter. **For example: 'wi'.** Then you can input the number of top restaurants you hope to see in the number entry. **For example: 5**. And you can input the number of price range of the restaurants you want to see.According to Yelp's definition, there are four categories in price ranges:

$ -- corresponding to '1' in our data, price range: under $10;
$$ -- corresponding to '2' in our data, price range: $11-30;
$$$ -- corresponding to '3' in our data, price range: $31-60;
$$$$ -- corresponding to '4' in our data, price range: Above $61.

For example, you can input '1' in the entry which stands for the cheapest restaurants.

Output:
After clicking the **'Show' Button**, you will see the top restaurants' main information of the state which safeties your criterions on the window. And for the window' length is limited, if the name you input contains more than 6 restaurants in our dataset, we'll just show you the first 6 restaurants in the window. You can see these restaurants' name, city, price range and the average stars of them. Before you search for another name, you should click on the '**Clear**' Button First to remove the information on the window. By clicking 'Clear' on the window, you can clean the restaurants' information showed on the window.

Warning:
If the state's name is not in our dataset, there will appear a new window showing **"Sorry, your input STATE is wrong, please try again."**
If the price range you input is wrong, there will appear a new window showing **"Sorry, your input PRICE RANGE is wrong, please try again."**

If the number of restaurants you input is wrong, there will appear a new window showing **"Sorry, your input NUMBER of top restaurants is wrong, please try again."**

5."Star Distribution for each state" Button:
Input:
There are 8 buttons on this window.
Click **'Show the Star Distribution of six States!',** you will see a figure of six subplots, showing you the distribution of stars of all the recorded restaurants in ON, MLN, AZ, EDH, WI, NV.
Click **'Show the Mean Stars of Each State!'**, you will see a plot illustrating the mean values of all the restaurants' star values in ON, MLN, AZ, EDH, WI, NV.
There are also six buttons, with names such as **'ON in Canada'** or **'EDH in UK'**. Click them, and you will get the corresponding pie charts, showing the star distribution of restaurants in certain states.

6.'Restaurants' Checkin Time Distribution' Button:
Input:
There are only six names that are valid inputs: WI, AZ, ON, EDH, MLN, KJL, NV. (Regardless of upper or lower case versions.). You can input them in the entry on the window.

Output:
Click 'Show Checkin Time Distribution', you will get a figure showing you the distribution of the checkin-in records of all the restaurants in a certain state, corresponding to your input.

Warning:
If the state's name is not in our dataset, there will appear a new window showing **"Sorry, your input STATE is wrong, please try again."**