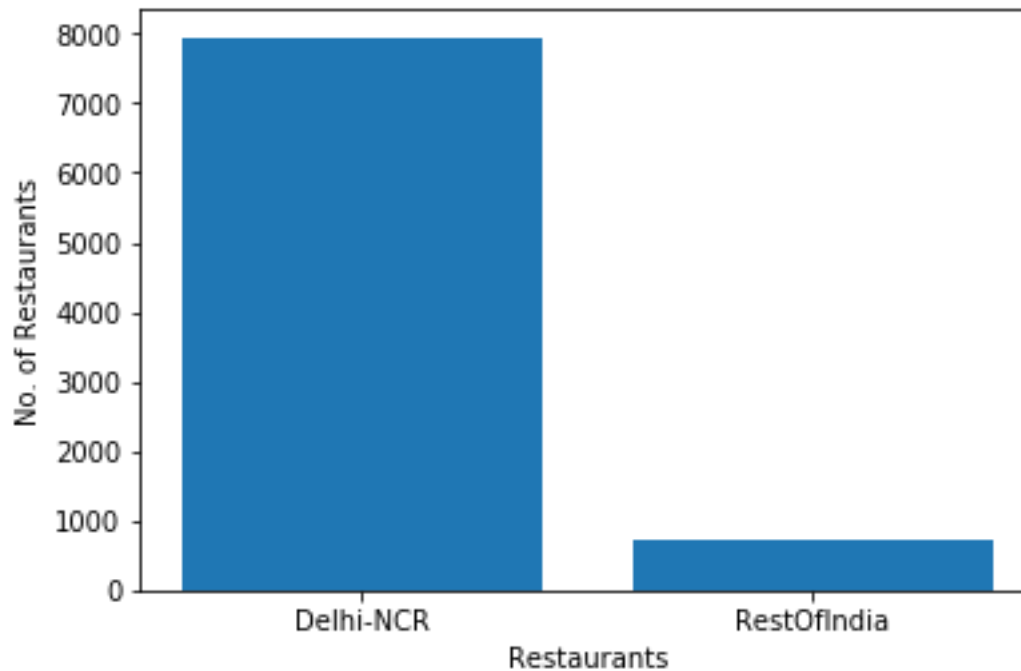# ANSWER 1.1:


```
Restaurants in Delhi-NCR 7947
Restaurants in RestOfIndia 705
```

Conclusion
Restaurants in Delhi NCR are more than that in RestOfIndia

Justification

- In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.
- After that, cities got filtered and modified among Delhi-NCR and RestOfIndia cities and df dataframe got updated.
- Using value count in pandas library, the required count of restaurants in Delhi-NCR and RestOfIndia is calculated.
- From the series of value count, keys and its value are extracted and bar graph is plotted using pyplot.

ANSWER 1.2:

```
Cuisines which are not present in Delhi-NCR but are present in
RestOfIndia
BBQ
Cajun
German
Malwani
Verifying whether above dishes are actually not present via API
call
BBQ is present
Cajun is not present
German is present
Malwani is not present
```

Conclusion
Based on the above inferences, we can conclude that this result from csv is incorrect due to incomplete dataset.

Justification

- *In this code, firstly csv file* zomato *data is restricted to* country id 1 *that is of India. Also, column names are updated to lower case and spaces replaced with '_'.*

- *After that, cities got filtered and modified among Delhi-NCR and RestOfIndia cities and* df *dataframe got updated.*

- *Dictionary* dict_city_cuisine *of city as key and value as cuisine using group by from pandas library, then Converting string of values to list and also removing duplicates in values of dict_city_cuisine.*

- *Now creating list of* rest_l *and* ncr_l, *filtering them according to Cuisines which are not present in Delhi-NCR but are present in RestOfIndia and printing the same.*

- *Using requests library we make a request to zomato api to retrieve* city id *by converting json to python using json library and using it further to generate* the list of cuisines.

- Check *the cuisines present in Delhi NCR or not using cuisine list generated by* csv file *and* API call.

ANSWER 1.3:

Delhi-NCR Top 10 Cuisines Vs No. of Restaurants
North Indian 3597
Chinese 2448
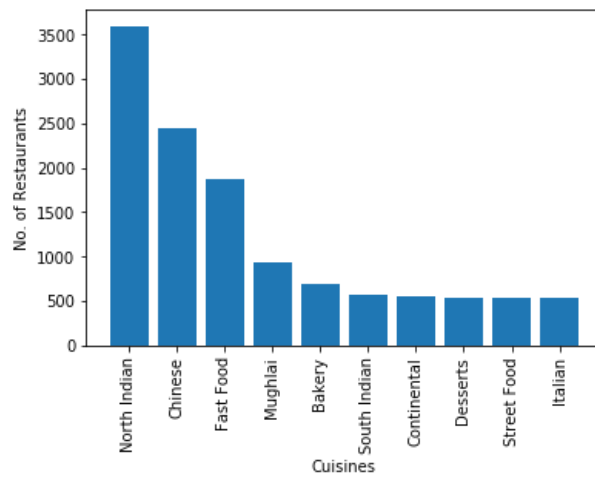Fast Food 1866
Mughlai 933
Bakery 697
South Indian 569
Continental 547
Desserts 542
Street Food 538
Italian 535

RestOfIndia Top 10 Cuisines Vs No. of Restaurants
North Indian 349
Chinese 242
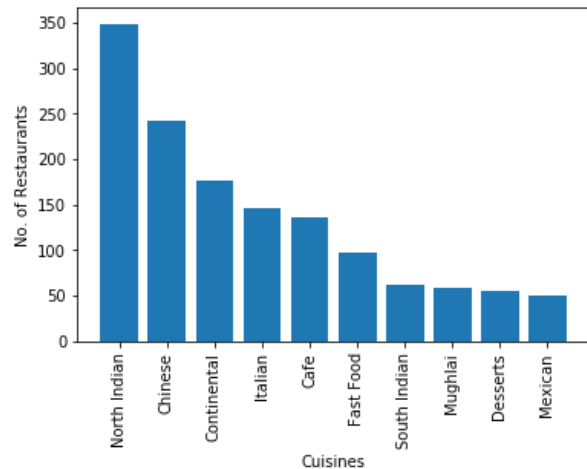Continental 177
Italian 147
Cafe 136
Fast Food 97
South Indian 62
Mughlai 59
Desserts 55
Mexican 50

Conclusion

Top 10 cuisines served by rest of India and Delhi-NCR have 8 cuisines in common where north Indian and Chinese served maximum in both these set of cities.

Justification

- *In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.*
- *After that, cities got filtered and modified among Delhi-NCR and RestOfIndia cities and df dataframe got updated.*
- *Dictionary dict_city_cuisine of city as key and value as cuisine using group by from pandas library, then Converting string of values to list.*
- *Now using dict_city_cuisine generating a data frame for each set of cities and applying value count for cuisines using pandas library.*
- *Extracting top 10 cuisines for each set of cities*
- *Printing and plotting the bar graph of No. of Restaurants vs. cuisines.*

ANSWER 1.4:

Cuisines present in Delhi-NCR but not present in RestOfIndia
Iranian
Bihari
Cuisine Varies
Belgian
Sri Lankan
Assamese
Moroccan
Drinks Only
Turkish
Nepalese
Kashmiri
Persian
Afghani
Pakistani
Sushi
Oriya
Deli
Raw Meats
Naga
South American

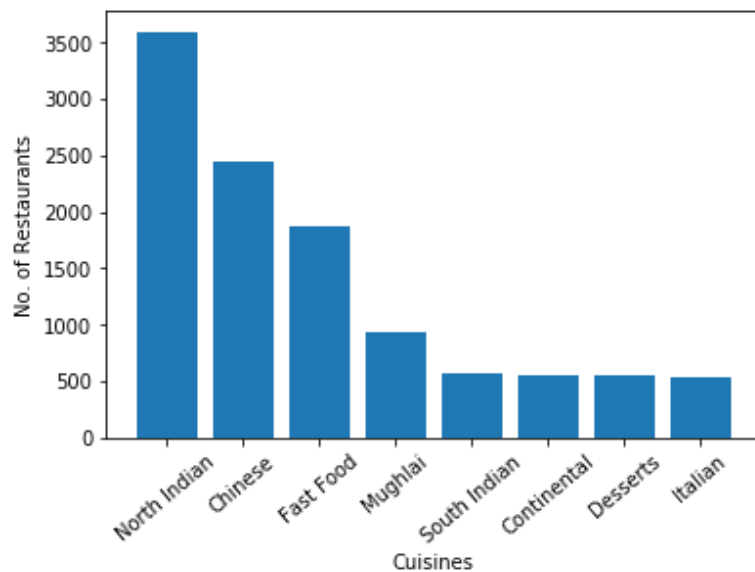Cuisines present in RestOfIndia but not present in Delhi-NCR
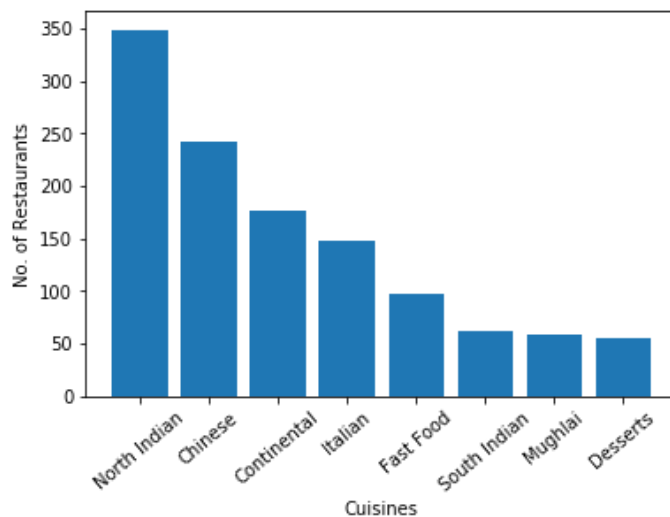BBQ
Cajun
German
Malwani

Also from Que1-Part3 above, common cuisines among both regions from the set of top 10 cuisines of both regions along with the no. of Restaurants are-
Delhi-NCR Region

RestOfIndia Region

Conclusion
Cuisines present in RestOfIndia and not Delhi NCR are much less than Cuisines present in Delhi NCR and not in RestOfIndia. Also, Common cuisines served by rest of India and Delhi-NCR are 8 cuisines where north Indian and Chinese served maximum in both these set of cities among top 10 cuisines served in both the set of cities.

Justification
- *In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.*
- *After that, cities got filtered and modified among Delhi-NCR and RestOfIndia cities and df dataframe got updated.*
- *Dictionary dict_city_cuisine of city as key and value as cuisine using group by from pandas library, then Converting string of values to list and also removing duplicates in values of dict_city_cuisine.*
- *Now creating list of rest_l and ncr_l, filtering them according to Cuisines which are not present in Delhi-NCR but are present in RestOfIndia and printing the same.*
- *Also, filtering them according to Cuisines which are not present in RestOfIndia but are present in Delhi-NCR and printing the same.*
- *Dictionary temp_dict from question 3, generate common cuisines served by Delhi NCR and RestOfIndia.*
- *Printing and plotting the bar graph of No. of Restaurants vs. cuisines.*

ANSWER 2.1.1:
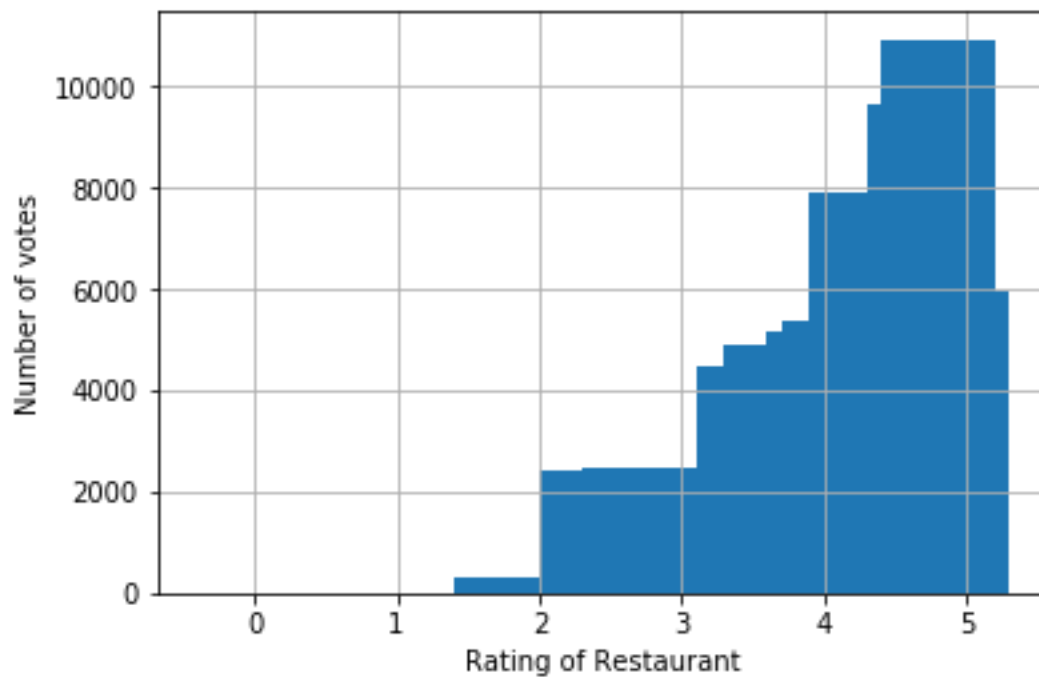
Conclusion

As we can see the rating getting increased with votes, we can conclude that both entities are directly proportional

Justification

- In this code, firstly csv file *zomato* data is restricted to *country id 1* that is of India. Also, column names are updated to lower case and spaces replaced with '_'.
- Now creating list of *x* and *y* of aggregate rating and votes respectively.
- Plotting *bar graph* from x and y list with x axis as rating of restaurants and y axis as no. of votes

ANSWER 2.1.2:
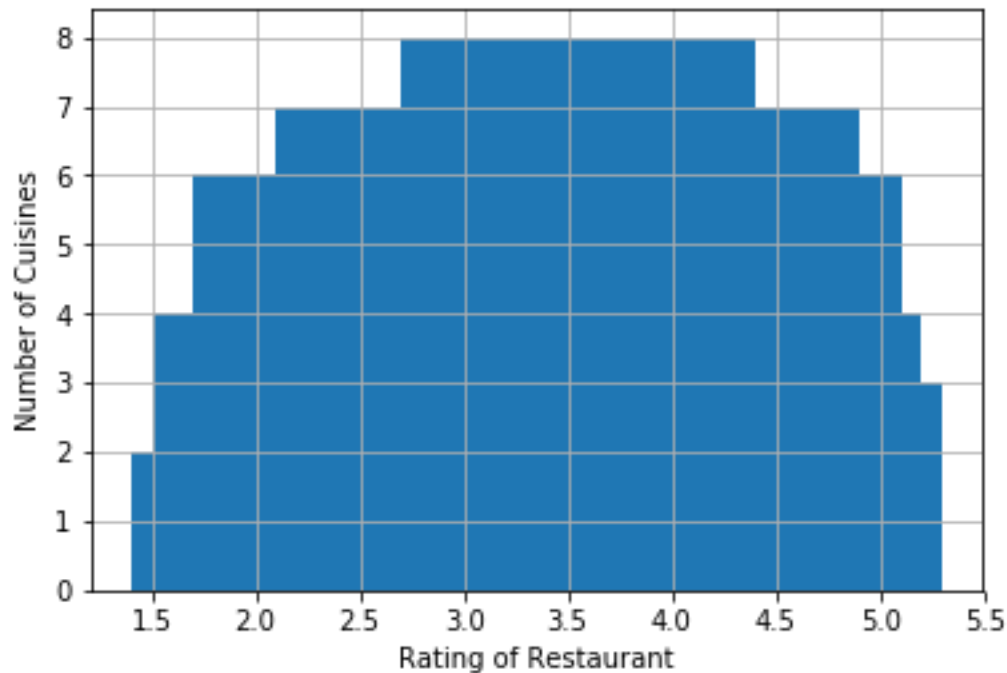
Conclusion

As we can see that highest rated restaurants have less number of cuisines in comparison to restaurants having more cuisines, we can conclude that rating is somewhat inversely proportional here with number of cuisines

Justification

- In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.
- Now creating list of x and y of aggregate rating and no. of cuisines respectively (No. of cuisines are calculated b finding length of cuisines after splitting.)
- Plotting bar graph from x and y list with x axis as rating of restaurants and y axis as no. of votes.

ANSWER 2.1.3:
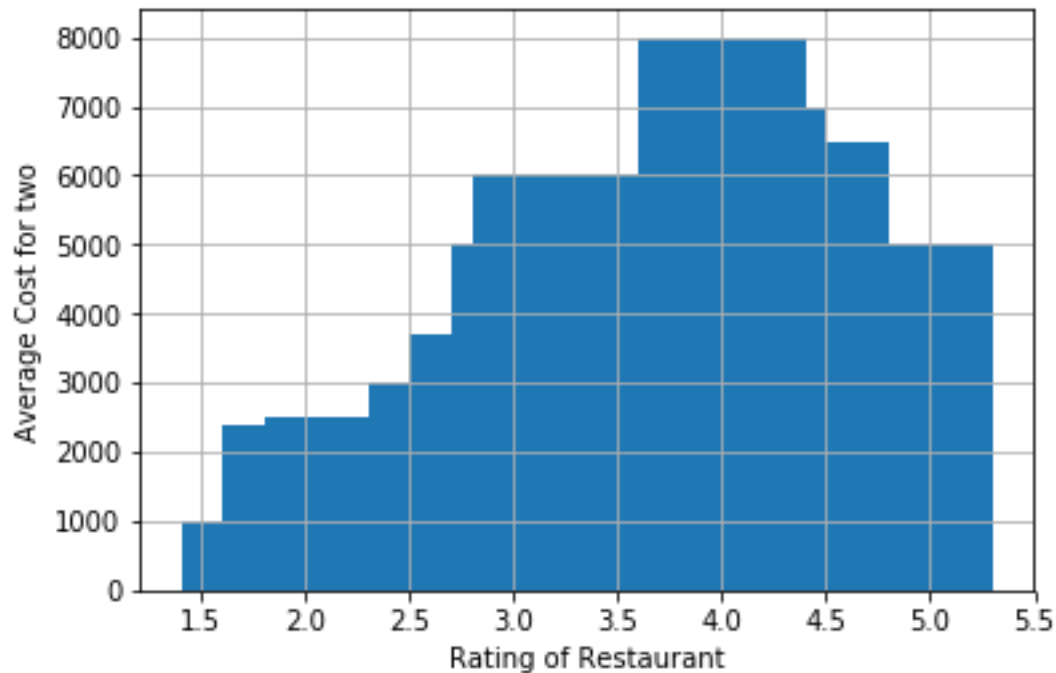
Conclusion

Highest rated restaurants have less average cost in comparison to restaurants having more average cost.

Justification

1. In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.

2. Now creating list of x and y of aggregate rating and average cost respectively.
3. Plotting bar graph from x and y list with x axis as rating of restaurants and y axis as no. of votes.

ANSWER 2.1.4:
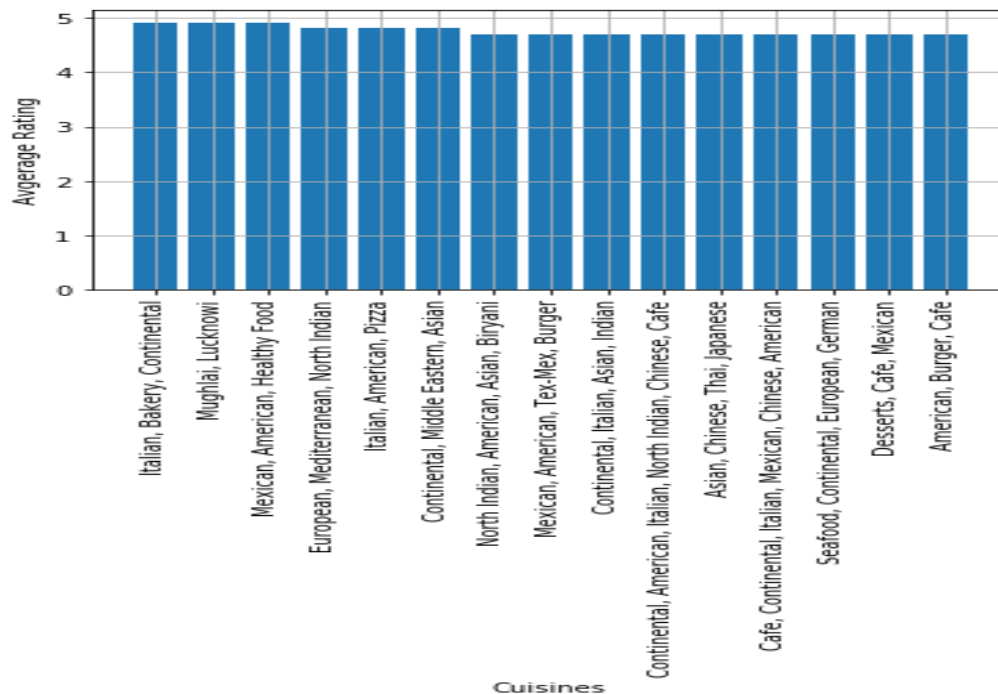
Conclusion

We can infer that serving above dishes leads to highest rating for restaurants

Justification

1. In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.

2. Now Grouping cuisines and finding the mean, followed by creating a dataframe from df_grp containing sorted data according to aggregate_rating in descending order.

3. Creating x1 and y1 list for plotting with x1 containing list of cuisines and y1 containing list of aggregate rating of top 15 ratings

4. Plotting bar graph from x1 and y1 list and printing the same.

ANSWER 2.2.1:

```
Top 10 localities with weighted rating in India
Hotel Clarks Amer, Malviya Nagar:  4.90
Aminabad:  4.90
Friends Colony:  4.89
Powai:  4.84
Kirlampudi Layout:  4.82
Express Avenue Mall, Royapettah:  4.80
Deccan Gymkhana:  4.80
Banjara Hills:  4.72
Sector 5, Salt Lake:  4.71
Riverside Mall, Gomti Nagar  :  4.70
```
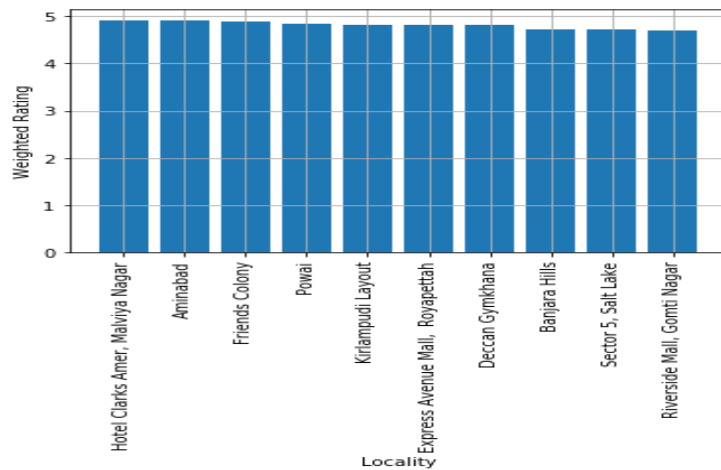

Conclusion
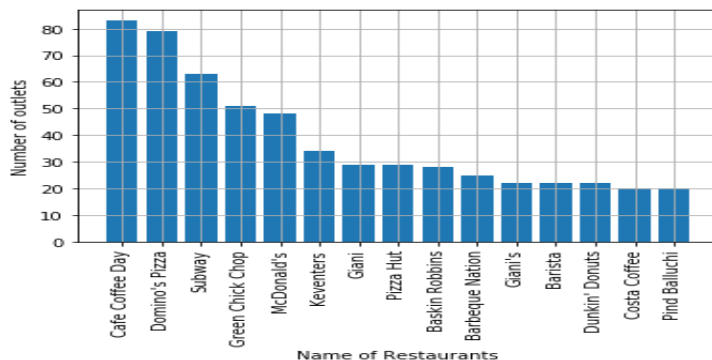*Above extracted data shows top 10 localities with max weighted ratings*

Justification
1. In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.
2. Creating a list of unique localities and using this creating a dictionary of localities vs. weighted ratings.
3. Sorting the final dictionary in reverse order and fetching top 10 records.
4. Creating x and y list for plotting with x containing list of localities and y containing list of weighted rating
5. Plotting bar graph from x and y list and printing the same.

ANSWER 3.1:

```
Top 15 restaurants in India with respect to number of outlets
Cafe Coffee Day 83
Domino's Pizza 79
Subway 63
Green Chick Chop 51
McDonald's 48
Keventers 34
Giani 29
Pizza Hut 29
Baskin Robbins 28
Barbeque Nation 25
Giani's 22
Barista 22
Dunkin' Donuts 22
Costa Coffee 20
Pind Balluchi 20
```
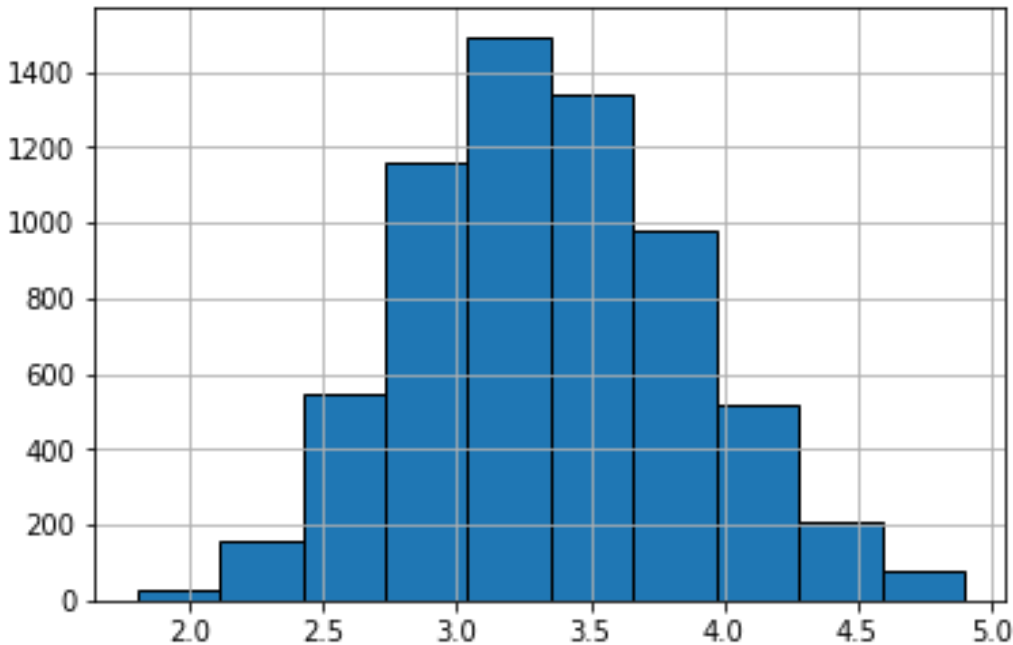

Conclusion
Above extracted data shows Top 15 restaurants in India with respect to number of outlets

Justification
1. In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.
2. Calculating the count of number of occurrences of a restaurant (no. of restaurant's outlet).
3. Fetching keys and values from series of top 15 restaurants with maximum outlets.
4. Plotting with x axis containing list of restaurant name and y axis containing list of its count that is no. of outlets.
5. Plotting bar graph from x and y list and printing the same.
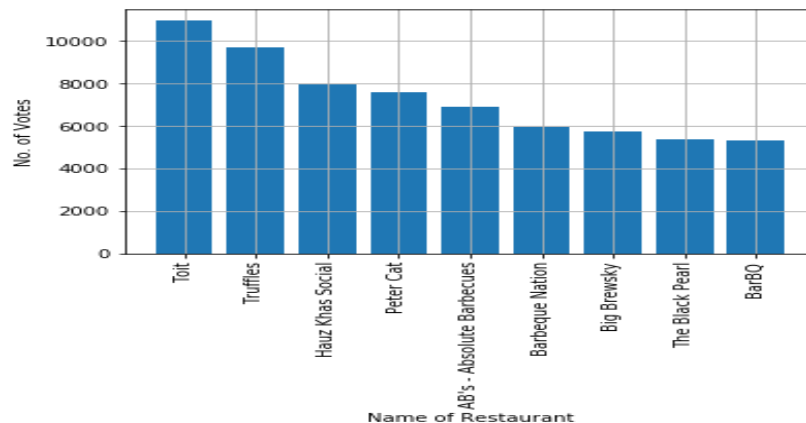
ANSWER 3.2:

Conclusion

Above extracted data shows Aggregate rating of restaurants in India without considering unrated restaurants.

Justification

1. In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.
2. Creating list x for plotting containing list of aggregate rating
3. Plotting histogram graph from list x for showing frequency of aggregate ratings.

ANSWER 3.3:

```
51705 Toit 10934
51040 Truffles 9667
308322 Hauz Khas Social 7931
20404 Peter Cat 7574
56618 AB's - Absolute Barbecues 6907
20842 Barbeque Nation 5966
58882 Big Brewsky 5705
94286 AB's - Absolute Barbecues 5434
54162 The Black Pearl 5385
20870 BarBQ 5288
```
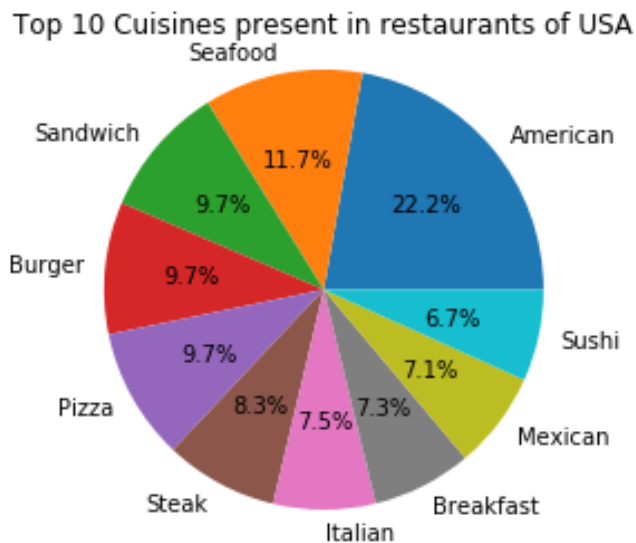

Conclusion
Above extracted data shows top 10 restaurants in the data with the highest number of votes

Justification

1. In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.
2. Grouping dataframe w.r.t. restaurant id and applying sum function and sorting it according to votes in descending order.
3. Creating list x and y and fetching top 1 records from df_temp dataframe.
4. Extracting names of restaurant with the help of restaurant id and storing it in list z.
5. Plotting bar graph from z and y list and printing res_id, res_name, votes.

ANSWER 3.4:

```
American 112
Seafood 59
Sandwich 49
Burger 49
Pizza 49
Steak 42
Italian 38
Breakfast 37
Mexican 36
Sushi 34
```


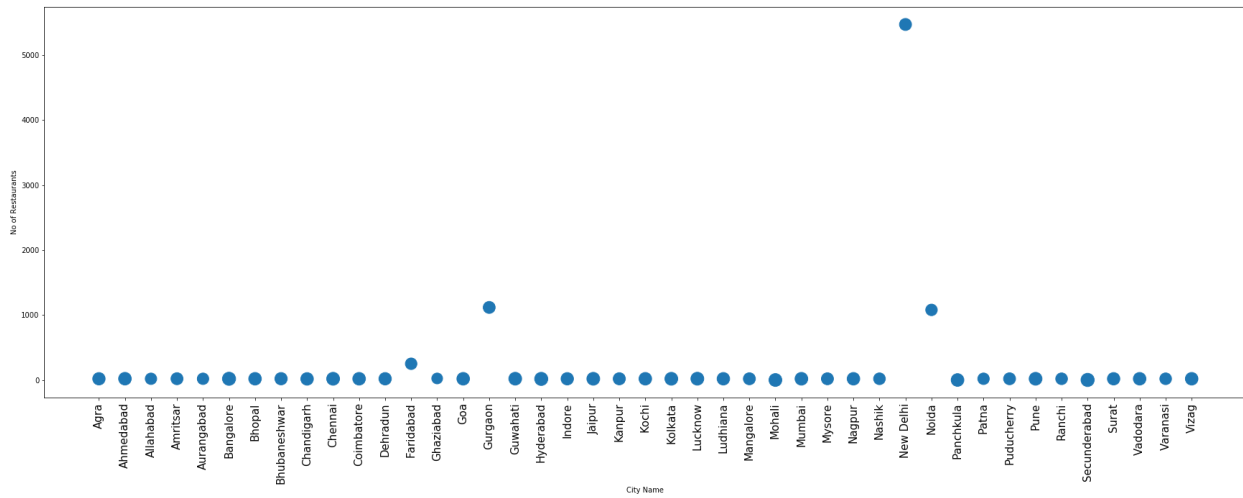Top 10 Cuisines present in restaurants of USA

Conclusion
Above extracted data shows top 10 cuisines present in restaurants in the USA

Justification

1. In this code, firstly csv file zomato data is restricted to country id 216 that is of USA .Also, column names are updated to lower case and spaces replaced with '_'.
2. Creating a list of cuisines served in USA.
3. Counting the no. of occurrences of cuisines served in restaurants with the help of value count.
4. Using the generated series creating a list label with cuisines as label and sizes as its counts.
5. Plotting pie chart from labels and sizes list and printing the same.

ANSWER 3.5:

Conclusion

Above extracted data shows the bubble graph of a number of Restaurants present in the city of India and keeping the weighted restaurant rating of the city in a bubble.

Justification

1 In this code, firstly csv file zomato data is restricted to country id 1 that is of India. Also, column names are updated to lower case and spaces replaced with '_'.

2. Creating a list of unique cities and using this creating a dictionary of city vs. weighted ratings.

3. Finding number of restaurants in a City (dict_city_resCount) and store it in a dictionary.

4. Sorting items of dictionary and from dict_city_votes which has data of City VS Weighted Rating and dict_city_resCount which has data of City Vs Number of Restaurants, generating list x, y and z

5. Creating p has each elements of z multiplied by 75.

6. Plotting bubble graph from x, p and y list, p as scalar and x & y as x axis and y axis.