

# ZOMATO DATA ANALYSIS

I got the very interesting zomato data for the city Pune, we have lots of features telling lots of stories about the food habits in pune. I am curious to know the answers of some of the questions like...

Ques-1 Which are the best rated restaurants in Pune?

Ques-2 Which is the best rated location for food in Pune?

Ques-3 What is most liked cuisine in Pune?

Ques-4 Which are the cheap but best restaurants in Pune?

Ques-5 Which restaurant serves the best "BIRYANI" in Pune?

Ques-6 Baner being my favourite place in Pune, Which are the best restaurants in Baner?

and so many other questions i have...

Lets explore this data and try to find the answers of these questions...

```
#importing libraries
import numpy as np
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)
import seaborn as sns
import matplotlib.pyplot as plt
```

```
#removing warnings
import warnings
warnings.filterwarnings('ignore')
```

```
#loading the csv file
df= pd.read_csv("zomato_outlet_final (11).csv")
df.head(10)
```

```
link \
0 https://www.zomato.com/pune/mix@36-the-westin-...
1 https://www.zomato.com/pune/kangan-the-westin-...
2 https://www.zomato.com/pune/coriander-kitchen-...
3 https://www.zomato.com/pune/the-market-the-wes...
4 https://www.zomato.com/pune/vandaag-vivanta-pu...
5 https://www.zomato.com/pune/baan-tao-hyatt-pun...
```

```

6 https://www.zomato.com/pune/zeera-conrad-pune-...
7 https://www.zomato.com/pune/koji-conrad-pune-b...
8 https://www.zomato.com/pune/feast-sheraton-gra...
9 https://www.zomato.com/pune/aasmana-the-ritz-c...

```

|   | rest_name                               | rest_type \       |
|---|---|-------------------|
| 0 | Mix@36 - The Westin\r\r\r\n             | ...               |
|   | Lounge                                  |                   |
| 1 | Kangan - The Westin\r\r\r\n             | Fine Dining       |
| 2 | Coriander Kitchen - Conrad Pune\r\r\r\n | Fine Dining       |
| 3 | The Market - The Westin\r\r\r\n         | Fine Dining       |
| 4 | Vandaag - Vivanta Pune\r\r\r\n          | Pub,Casual Dining |
| 5 | Baan Tao - Hyatt Pune\r\r\r\n           | Fine Dining       |
| 6 | Zeera - Conrad Pune\r\r\r\n             | Fine Dining       |
| 7 | Koji - Conrad Pune\r\r\r\n              | Fine Dining       |
| 8 | Feast - Sheraton Grand\r\r\r\n          | Fine Dining       |
| 9 | Aasmana: The Ritz-Carlton\r\r\r\n       | Fine Dining       |

|   | loc                              | dine_rating | dine_reviews \ |
|---|----------------------------------|-------------|----------------|
| 0 | The Westin, Mundhwa              | 4.2         | (707 Reviews)  |
| 1 | The Westin, Mundhwa              | 4.1         | (344 Reviews)  |
| 2 | Conrad Pune, Bund Garden Road    | 4.5         | (541 Reviews)  |
| 3 | The Westin, Mundhwa              | 4.0         | (55 Reviews)   |
| 4 | Vivanta Pune, Hinjewadi          | 3.9         | (113 Reviews)  |
| 5 | Hyatt Pune, Nagar Road           | 4.5         | (739 Reviews)  |
| 6 | Conrad Pune, Bund Garden Road    | 4.1         | (159 Reviews)  |
| 7 | Conrad Pune, Bund Garden Road    | 4.1         | (199 Reviews)  |
| 8 | Sheraton Grand, Bund Garden Road | 4.5         | (577 Reviews)  |
| 9 | Ritz Carlton, Yerwada            | 3.7         | (22 Reviews)   |

|   | delivery_rating | delivery_reviews \ |
|---|-----------------|--------------------|
| 0 | NaN             | NaN                |
| 1 | NaN             | NaN                |
| 2 | NaN             | NaN                |
| 3 | NaN             | NaN                |
| 4 | NaN             | NaN                |
| 5 | NaN             | NaN                |
| 6 | NaN             | NaN                |
| 7 | NaN             | NaN                |
| 8 | NaN             | NaN                |

|      | NaN  | NaN |  | cuisine | Unnamed: 9 | Cost |
|------|--|-----|--|---------|------------|------|
| (RS) | \  |     |  |         |            |      |
| 0    | North Indian,Continental,Asian,Finger Food,    |     |  |         | NaN        |      |
| 4300 |  |     |  |         |            |      |
| 1    | North Indian,Mughlai,                          |     |  |         | NaN        |      |
| 3500 |  |     |  |         |            |      |
| 2    | Mediterranean,Asian,North Indian,              |     |  |         | NaN        |      |
| 3200 |  |     |  |         |            |      |
| 3    | Asian,European,North Indian,                   |     |  |         | NaN        |      |
| 3200 |  |     |  |         |            |      |
| 4    | Finger Food,Continental,                       |     |  |         | NaN        |      |
| 3100 |  |     |  |         |            |      |
| 5    | Salad,Asian,Malaysian,Vietnamese,Thai,Chinese, |     |  |         | NaN        |      |
| 3000 |  |     |  |         |            |      |
| 6    | North Indian,                                  |     |  |         | NaN        |      |
| 3000 |  |     |  |         |            |      |
| 7    | Thai,Japanese,Chinese,                         |     |  |         | NaN        |      |
| 3000 |  |     |  |         |            |      |
| 8    | European,Asian,North Indian,                   |     |  |         | NaN        |      |
| 3000 |  |     |  |         |            |      |
| 9    | Mughlai,Biryani,Kebab,North Indian,            |     |  |         | NaN        |      |
| 3000 |  |     |  |         |            |      |

|   | cost     |   | liked |
|---|----------|---|-------|
| 0 | Rs. 4300 | Cocktails, Chaat, Beer                            |       |
| 1 | Rs. 3500 | Biryani, Veg Platter, Dal Makhani, Butter Chic... |       |
| 2 | Rs. 3200 | Pasta, Panipuri, Waffles, Pizza, Salad, Chaat,... |       |
| 3 | Rs. 3200 | Vanilla Ice Cream, Chaat, Sushi                   |       |
| 4 | Rs. 3100 | Cocktails, Beer, Peri Peri Chicken, Fish, Veg ... |       |
| 5 | Rs. 3000 | Sushi, Salad, Dumplings, Tom Yum Soup, Dimsum ... |       |
| 6 | Rs. 3000 | Paan Ice Cream, Biryani, Coffee, Pindi Chole, ... |       |
| 7 | Rs. 3000 | Sushi, Cocktails, Salmon, Chicken Clay Pot, Ku... |       |
| 8 | Rs. 3000 | Pasta, Salad, Sea Food, Coffee, Paan Ice Cream... |       |
| 9 | Rs. 3000 |   | NaN   |

```
df.columns
```

```
Index(['link', 'rest_name', 'rest_type', 'loc', 'dine_rating',
'dine_reviews',
'delivery_rating', 'delivery_reviews', 'cuisine', 'Unnamed: 9',
'Cost (RS)', 'cost', 'liked'],
dtype='object')
```

```
#removing the unnecessary column "link"
df=df.drop(['link','Unnamed: 9'],axis=1)
df.head()
```

|   | rest_type \                             | rest_name |                   |
|---|---|-----------|-------------------|
| 0 | Mix@36 - The Westin\r\r\r\n             | ...       |                   |
|   | Lounge                                  |           |                   |
| 1 | Kangan - The Westin\r\r\r\n             | ...       | Fine Dining       |
| 2 | Coriander Kitchen - Conrad Pune\r\r\r\n | ...       | Fine Dining       |
| 3 | The Market - The Westin\r\r\r\n         | ...       | Fine Dining       |
| 4 | Vandaag - Vivanta Pune\r\r\r\n          | ...       | Pub,Casual Dining |

|   | loc                           | dine_rating | dine_reviews  |
|---|-------------------------------|-------------|---------------|
| 0 | The Westin, Mundhwa           | 4.2         | (707 Reviews) |
| 1 | The Westin, Mundhwa           | 4.1         | (344 Reviews) |
| 2 | Conrad Pune, Bund Garden Road | 4.5         | (541 Reviews) |
| 3 | The Westin, Mundhwa           | 4.0         | (55 Reviews)  |
| 4 | Vivanta Pune, Hinjewadi       | 3.9         | (113 Reviews) |

|   | delivery_reviews (RS) \ | cuisine                                     | Cost |
|---|-------------------------|---|------|
| 0 | NaN                     | North Indian,Continental,Asian,Finger Food, | 4300 |
| 1 | NaN                     | North Indian,Mughlai,                       | 3500 |
| 2 | NaN                     | Mediterranean,Asian,North Indian,           | 3200 |
| 3 | NaN                     | Asian,European,North Indian,                | 3200 |
| 4 | NaN                     | Finger Food,Continental,                    | 3100 |

|   | cost     | liked   |
|---|----------|---|
| 0 | Rs. 4300 | Cocktails, Chaat, Beer                            |
| 1 | Rs. 3500 | Biryani, Veg Platter, Dal Makhani, Butter Chic... |
| 2 | Rs. 3200 | Pasta, Panipuri, Waffles, Pizza, Salad, Chaat,... |
| 3 | Rs. 3200 | Vanilla Ice Cream, Chaat, Sushi                   |
| 4 | Rs. 3100 | Cocktails, Beer, Peri Peri Chicken, Fish, Veg ... |

#we have 5433 restaurats in our data, including small tapris, medium size restaurants,  
 #Bakeries, Dessert Parlours, Cake Shops, Bars, Big Restaurants, Casual

```

Dinings etc.
df.shape

(5433, 11)

df.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 5433 entries, 0 to 5432
Data columns (total 11 columns):
#   Column                Non-Null Count  Dtype
---  -
0   rest_name              5433 non-null   object
1   rest_type              4336 non-null   object
2   loc                    5433 non-null   object
3   dine_rating            5433 non-null   float64
4   dine_reviews           4829 non-null   object
5   delivery_rating        2539 non-null   float64
6   delivery_reviews       2539 non-null   object
7   cuisine                5433 non-null   object
8   Cost (RS)              5433 non-null   int64
9   cost                   5433 non-null   object
10  liked                  2603 non-null   object
dtypes: float64(2), int64(1), object(8)
memory usage: 467.0+ KB

```

We have some null values in some columns, we will handle them step by step

```

# lets find the duplicates in the data

df.duplicated().sum()

250

#we have 250 rows which are duplicates, lets remove the duplicate
values

df=df.drop_duplicates()
df.shape

#after removing duplicate rows, we got 5183 restaurants in our dataset

(5183, 11)

```

## Exploratory Data Analysis

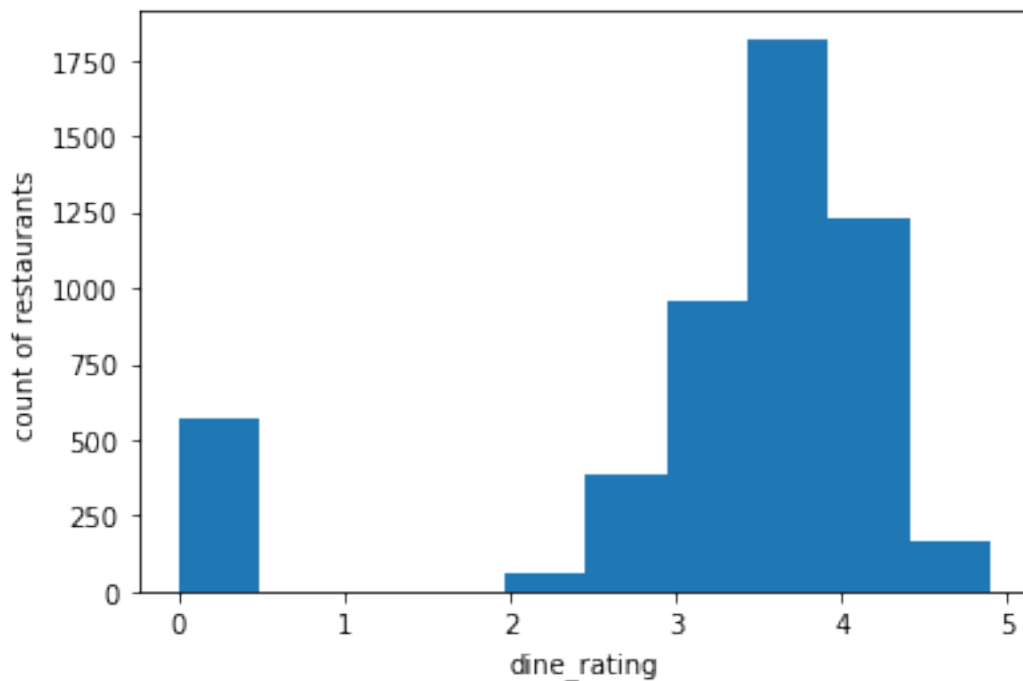
Lets do the EDA on Zomato to understand the data in depth.

We gonna do Univariate Data Analysis and Bivariate Data Analysis

## FEATURE-1(dine\_rating)

```
#lets plot the histogram  
plt.hist(df['dine_rating'])  
plt.xlabel("dine_rating")#  
plt.ylabel("count of restaurants")
```

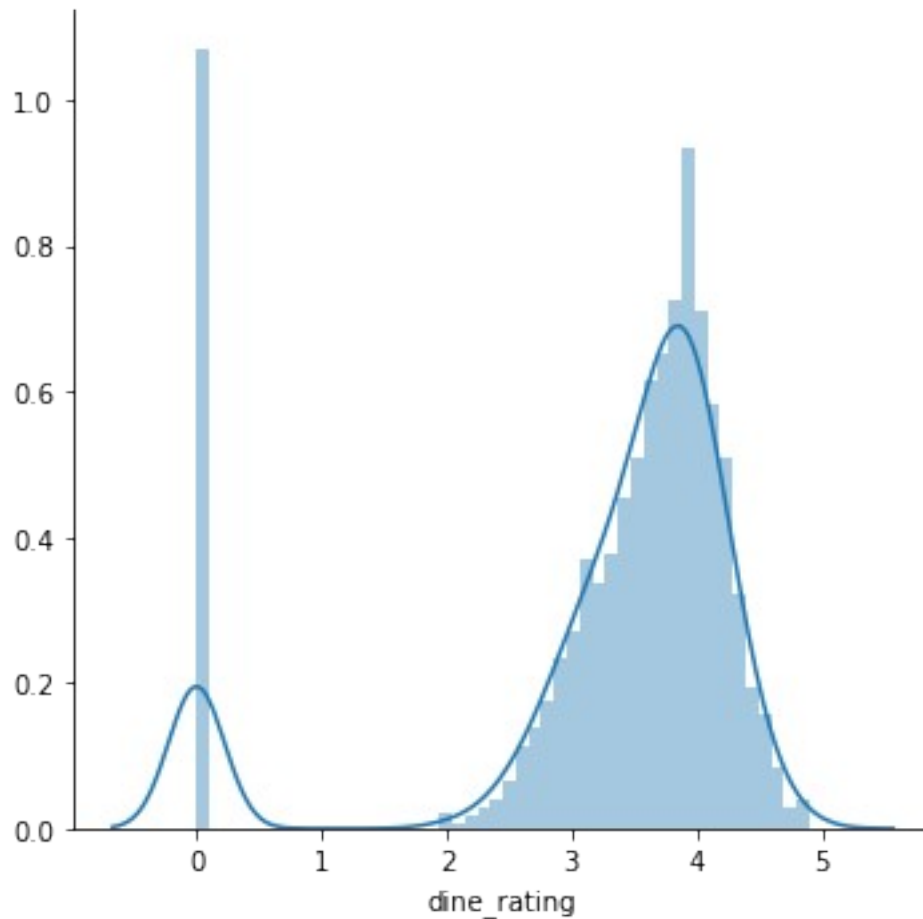
```
Text(0, 0.5, 'count of restaurants')
```



## OBSERVATIONS

1. More than 500 restaurants have 0 ratings
2. Most of the restaurants got rating between 3.5 to 4 and that's a good news for zomato.
3. There are no restaurants which got 1 as a rating in our data.

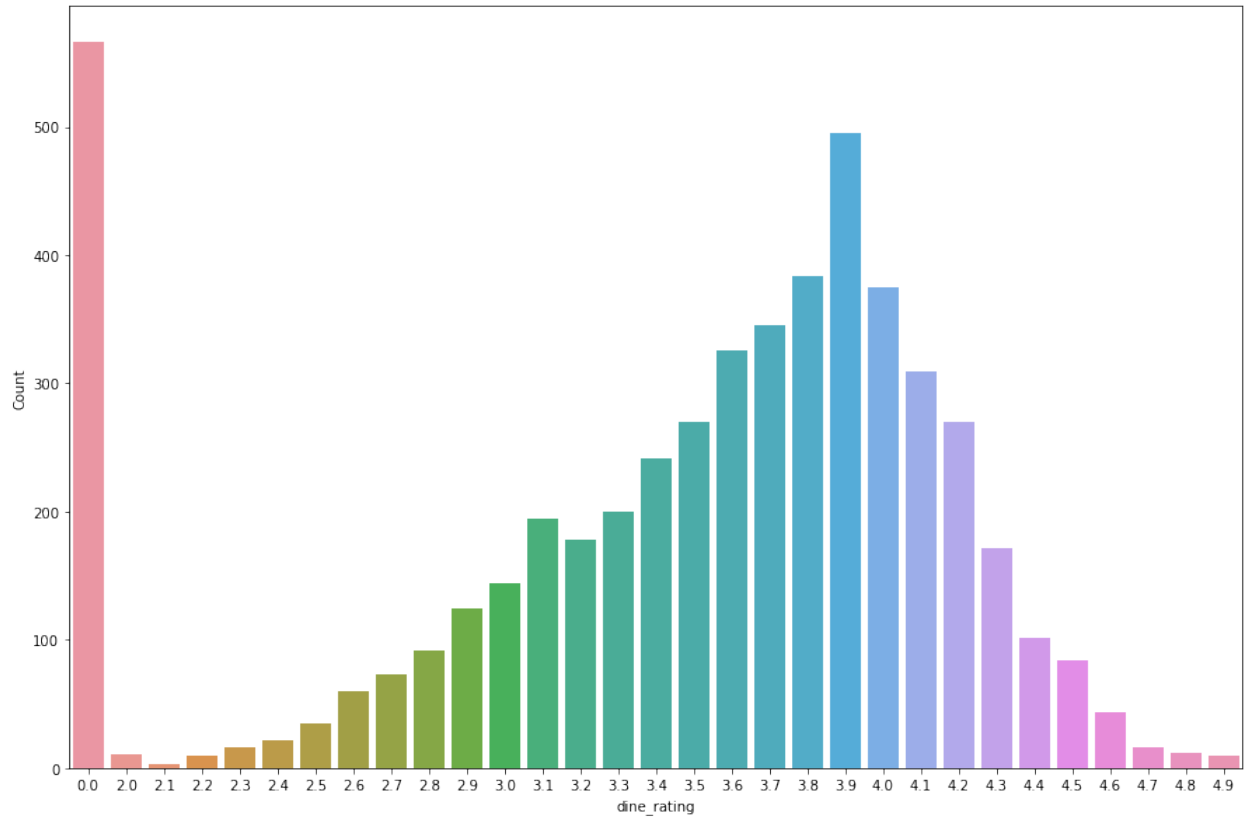
```
#probability density function  
sns.FacetGrid(df, size=5) \  
    .map(sns.distplot, "dine_rating", kde='True') \  
    .add_legend()  
plt.show()
```



```
#bar plot
dine=df['dine_rating'].value_counts()
plt.figure(figsize=(15,10))

index_d=dine.index
plt.xlabel("dine_rating")
plt.ylabel("Count")
sns.barplot(dine.index,dine.values)

<AxesSubplot:xlabel='dine_rating', ylabel='Count'>
```



## Observation

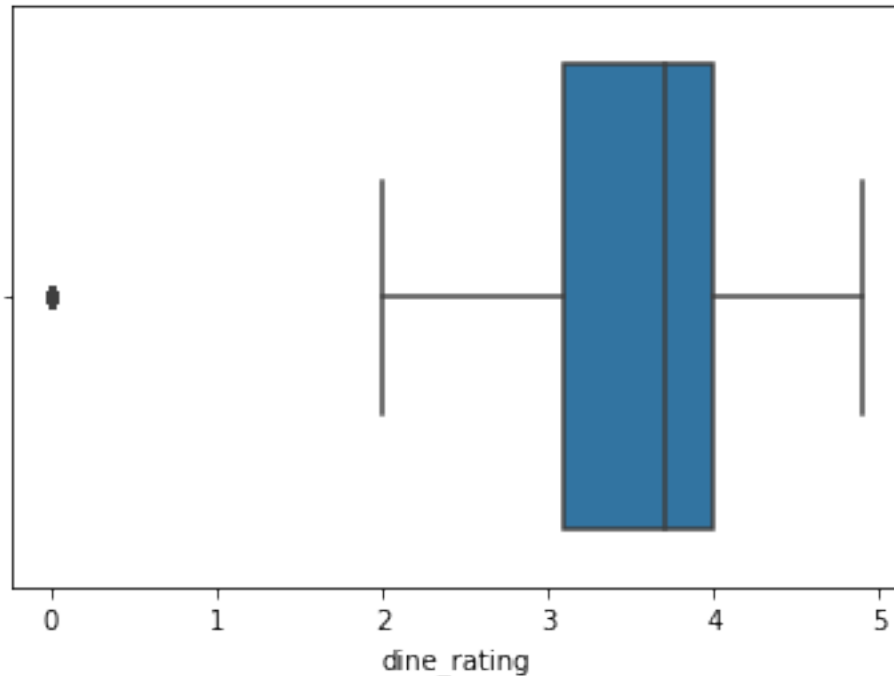
1. Most of the customers have ordered 3.9 rating.
2. There are lots of restaurants which got 0 ratings.

```
#box plot
```

```
sns.boxplot(df['dine_rating'])
```

```
<AxesSubplot:xlabel='dine_rating'>
```





## Observation

1. 25% of the dine ratings on zomato is less than 3.
2. 50% of the dine ratings on zomato is approximately less than 3.8.
3. 75% of the dine rating on zomato is less than 4.
4. 50% of the restaurants have rating between 3 to 4 and that's a good news for a company like Zomato.

## Feature-2(Rest\_type- Restaurant\_type)

```
print(len(df['rest_type'].unique()))  
67
```

There are 67 types of restaurant types in pune

```
#lets count the number of each Type  
df['rest_type'].value_counts()
```

|                |      |
|----------------|------|
| Quick Bites    | 1467 |
| Casual Dining  | 911  |
| Bakery         | 329  |
| Dessert Parlor | 308  |

```
Casual Dining,Bar      241
...
Casual Dining,Bakery    1
Quick Bites,Casual Dining  1
Confectionery           1
Food Truck,Dessert Parlor  1
Food Court,Fast Food     1
Name: rest_type, Length: 66, dtype: int64
```

## Which Types of restaurants are leaders in pune?

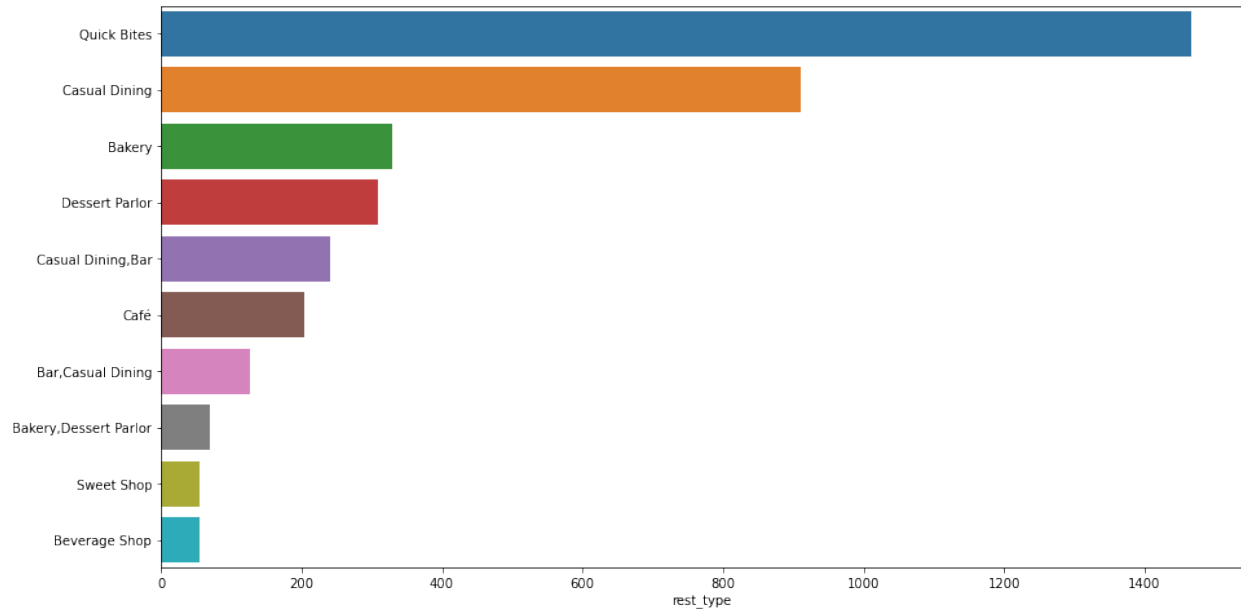
```
rest_type_values=df['rest_type'].value_counts()[:10]
print(rest_type_values)
```

```
Quick Bites      1467
Casual Dining    911
Bakery           329
Dessert Parlor   308
Casual Dining,Bar 241
Café             204
Bar,Casual Dining 126
Bakery,Dessert Parlor 69
Sweet Shop       54
Beverage Shop    54
Name: rest_type, dtype: int64
```

```
plt.figure(figsize=(15,8))
```

```
sns.barplot(rest_type_values,rest_type_values.index)
```

```
<AxesSubplot:xlabel='rest_type'>
```



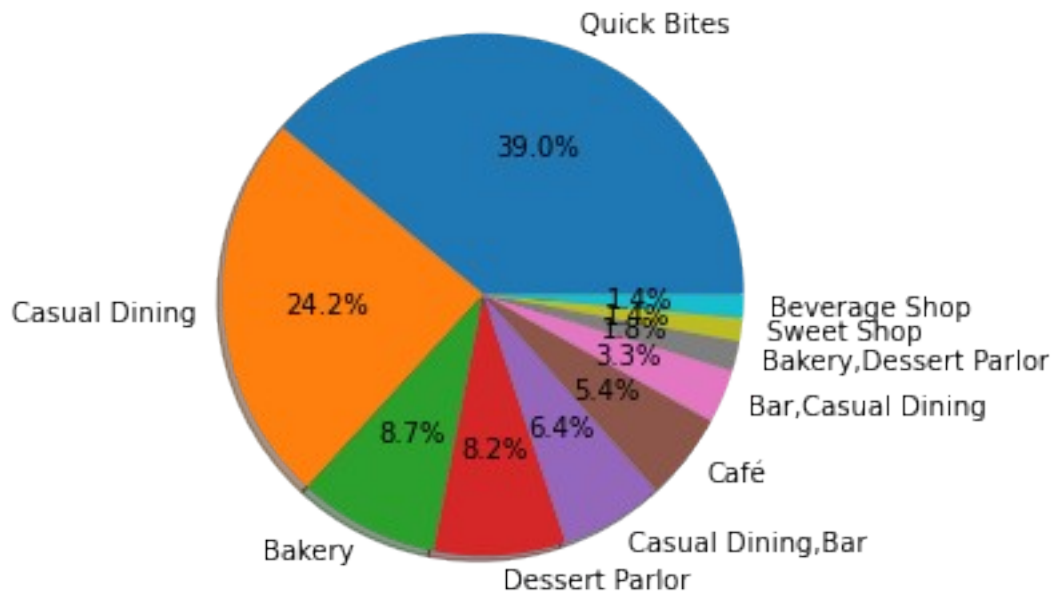
We can see, there are mostly quick bites restaurants, followed by casual dining and bakery

*#pie chart*

```
labels = rest_type_values.index
sizes = rest_type_values.values

plt.pie(sizes, labels=labels, autopct='%1.1f%%',
        shadow=True)
plt.axis('equal')

(-1.115966210982468,
 1.1007602957610698,
 -1.1045741430922396,
 1.1200009987171933)
```



## Observation

1. 39% of the restaurants in pune are Quick bites.
2. 24.2% of the restaurants in pune are Casual dining.
3. 8.7 % of the restaurants in pune are Bakeries.

## Feature-3(Cuisines)

*# we can see that a restaurant can have multiple cuisine*  
`df['cuisine']`

```
0      North Indian,Continental,Asian,Finger Food,
1              North Indian,Mughlai,
2      Mediterranean,Asian,North Indian,
3      Asian,European,North Indian,
4      Finger Food,Continental,
...
5428      South Indian,Chinese,North Indian,
5429              Mughlai,Iranian,
5430      Chinese,Fast Food,North Indian,
5431      Beverages,Chinese,Street Food,Fast Food,
5432              Thai,Chinese,
Name: cuisine, Length: 5183, dtype: object
```

Lets see what all cuisine Pune serves to us...

```
#NUMBER OF CUISINE IN PUNE
cuisine=[]
for i in df['cuisine']:
    for j in i.split(","):
        if j not in cuisine:
            cuisine.append(j)
print(cuisine)
print(len(cuisine))

#there are 92 total cuisine in all the restaurant in pune

['North Indian', 'Continental', 'Asian', 'Finger Food', '', 'Mughlai',
'Mediterranean', 'European', 'Salad', 'Malaysian', 'Vietnamese',
'Thai', 'Chinese', 'Japanese', 'Biryani', 'Kebab', 'Italian', 'Bar
Food', 'Seafood', 'Fast Food', 'Healthy Food', 'Mexican', 'Desserts',
'American', 'Greek', 'Maharashtrian', 'Beverages', 'South American',
'Steak', 'Brazilian', 'Malwani', 'South Indian', 'Chettinad',
'Kerala', 'Mangalorean', 'Pizza', 'Iranian', 'Goan', 'Charcoal
Chicken', 'Cafe', 'Modern Indian', 'Korean', 'Sushi', 'Cantonese',
'Momos', 'Bakery', 'Tea', 'BBQ', 'Mongolian', 'Tex-Mex', 'Lebanese',
'Street Food', 'Cuisine Varies', 'Sandwich', 'Middle Eastern',
'African', 'Ethiopian', 'Burger', 'Hyderabadi', 'Parsi', 'German',
'Konkan', 'Rolls', 'Singaporean', 'Indonesian', 'Rajasthani',
'Lucknowi', 'Burmese', 'Bengali', 'Ice Cream', 'Kashmiri', 'Arabian',
'Gujarati', 'French', 'Tibetan', 'Coffee', 'Mithai', 'Bihari',
'Wraps', 'Odia', 'Juices', 'Raw Meats', 'Turkish', 'Frozen Yogurt',
'Awadhi', 'Afghan', 'Paan', 'Assamese', 'Andhra', 'Panini', 'Mishti',
'Naga']
92
```

We can see there are lots of cuisines in pune, some of them are are not cuisines like Coffee, Mithai etc but in data we have it like that

## Total number of restaurants serving biryani in Pune

```
count=0
for i in df['cuisine']:
    for j in i.split(","):
        if j == "Biryani":
            count=count+1
print(count)

#There are 566 restaurant in pune which serves biryani
```

## Total number of restaurants serving North Indian Food in Pune

```
count=0
for i in df['cuisine']:
    for j in i.split(","):
        if j == "North Indian":
            count=count+1
print(count)
```

*#There are 2057 restaurants out of 5183 restaurants(almost 40%) which serves North Indian Food*

2057

```
list_res=[]
d={}
for i in df["cuisine"]:
    for j in i.split(","):
        list_res.append(j)

for i in list_res:
    if i in d:
        d[i]+=1
    else:
        d[i]=1

for w in sorted(d, key=d.get, reverse=True):
    print(w, d[w])
```

```
5183
North Indian 2057
Chinese 1431
Fast Food 1419
Beverages 1058
Desserts 996
Bakery 581
Biryani 566
Street Food 494
Mughlai 493
Continental 478
Italian 461
```

Maharashtrian 395  
South Indian 358  
Ice Cream 328  
Pizza 326  
Sandwich 279  
Cafe 269  
Asian 251  
Seafood 233  
Burger 217  
Salad 164  
Finger Food 154  
Rolls 145  
Kebab 130  
Thai 120  
Malwani 115  
Healthy Food 109  
Mexican 98  
European 83  
Mithai 83  
Wraps 77  
Tea 72  
American 71  
Momos 67  
Bar Food 55  
Lebanese 55  
Modern Indian 46  
Coffee 44  
Hyderabadi 37  
Japanese 33  
Mediterranean 27  
Bengali 27  
Mangalorean 22  
Sushi 21  
Goan 19  
BBQ 17  
Juices 17  
Kerala 15  
Korean 15  
Rajasthani 15  
Arabian 14  
Malaysian 11  
Gujarati 11  
Konkan 10  
Tibetan 10  
Lucknowi 9  
Iranian 8  
German 8  
Steak 7  
Parsi 7

```

Vietnamese 6
Chettinad 6
Andhra 6
Panini 5
Brazilian 4
Charcoal Chicken 4
Cuisine Varies 4
Indonesian 4
French 4
Afghan 4
Middle Eastern 3
Singaporean 3
Kashmiri 3
Odia 3
Awadhi 3
South American 2
Burmese 2
Bihari 2
Assamese 2
Greek 1
Cantonese 1
Mongolian 1
Tex-Mex 1
African 1
Ethiopian 1
Raw Meats 1
Turkish 1
Frozen Yogurt 1
Paan 1
Mishti 1
Naga 1

```

## Feature-4(loc-location where the restaurant is situated)

```

total_locations=df['loc'].value_counts()
top_total_locations=df['loc'].value_counts()[:10]
print(top_total_locations)

places=top_total_locations.index

#these are the location with the maximum number of restaurants in pune

Kothrud          264
Wakad            225
Viman Nagar     224
Baner            219

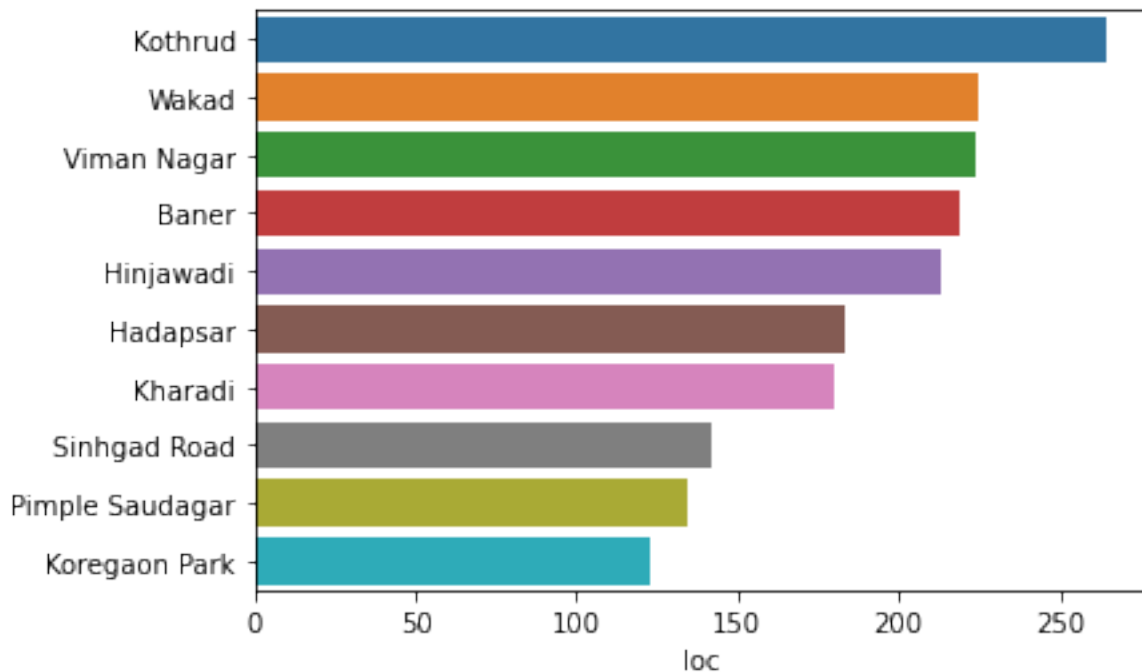
```



```
Hinjawadi      213
Hadapsar       183
Kharadi        180
Sinhgad Road   142
Pimple Saudagar 134
Koregaon Park  123
Name: loc, dtype: int64
```

```
sns.barplot(top_total_locations, places)
```

```
<AxesSubplot:xlabel='loc'>
```



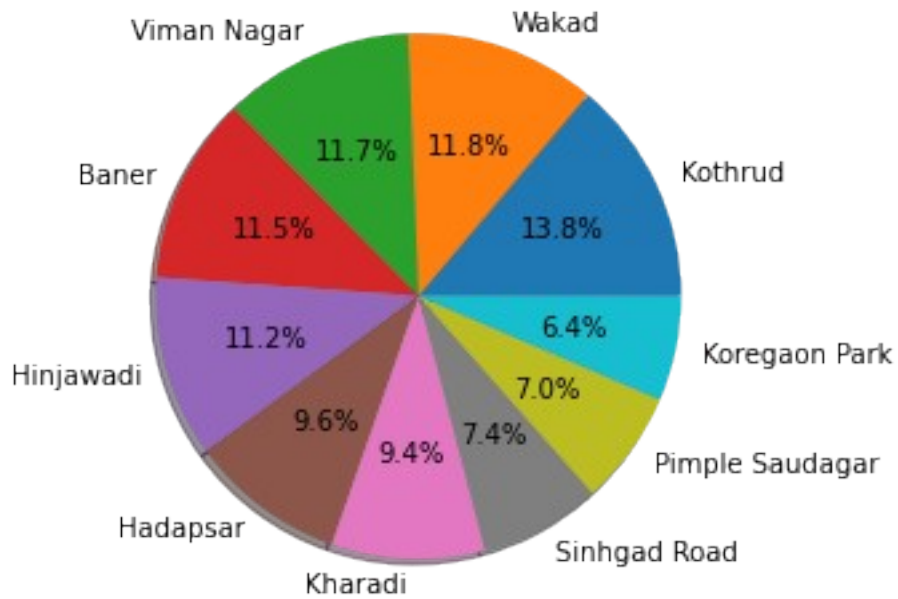
## Observation

Kothrud has the maximum number of restaurants followed by wakad and viman nagar

```
labels = top_total_locations.index
sizes = top_total_locations.values

plt.pie(sizes, labels=labels, autopct='%1.1f%%',
        shadow=True)
plt.axis('equal')

(-1.106081493738245,
 1.1002895949399165,
 -1.1035496093886763,
 1.1045536352361645)
```



## Observation

1. Kothrud covers 13.8% of top 10 locations in pune.
2. Viman Nagar and Baner covers almost 11.5% of the top 10 locations in pune

## FEATURE-5(delivery\_rating)

```
deliver=df['delivery_rating'].value_counts()
deliver
```

|     |     |
|-----|-----|
| 3.9 | 446 |
| 3.8 | 280 |
| 4.0 | 242 |
| 4.1 | 227 |
| 3.7 | 212 |
| 4.2 | 172 |
| 3.6 | 164 |
| 3.5 | 123 |
| 4.3 | 96  |
| 3.4 | 90  |
| 3.3 | 88  |
| 4.4 | 58  |
| 3.2 | 58  |
| 3.1 | 37  |
| 4.5 | 36  |
| 3.0 | 24  |
| 4.6 | 18  |

```

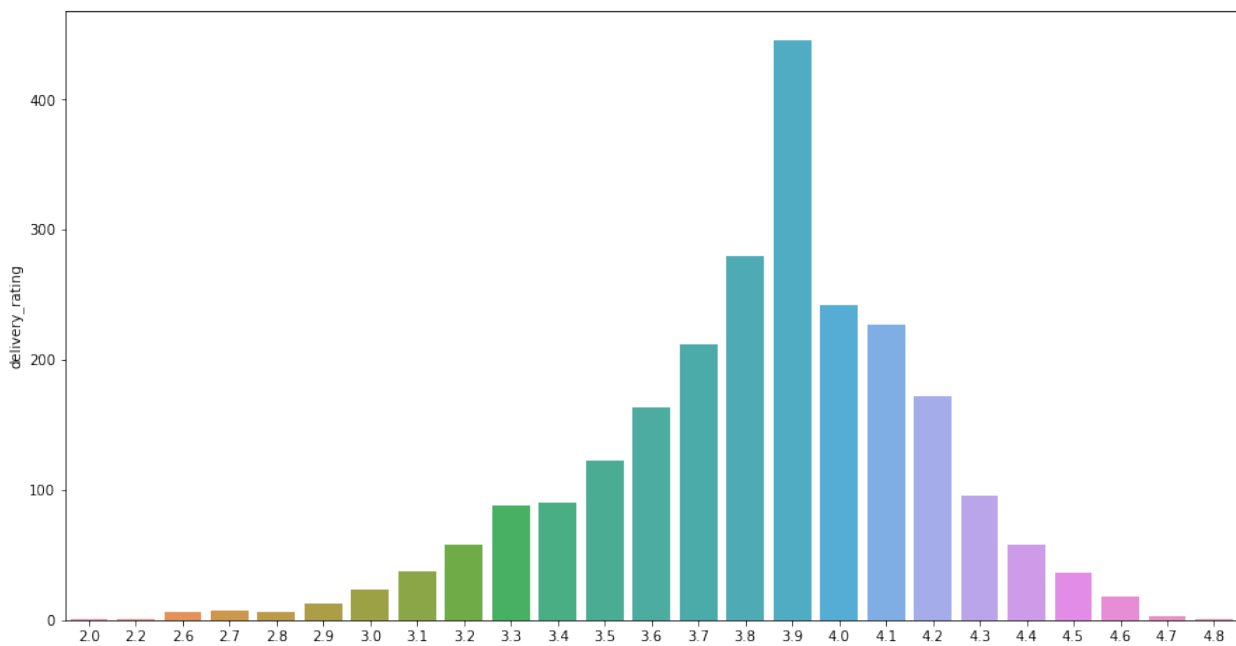
2.9      13
2.7       7
2.6       6
2.8       6
4.7       3
4.8       1
2.0       1
2.2       1
Name: delivery_rating, dtype: int64

plt.figure(figsize=(15,8))

sns.barplot(deliver.index,deliver)

<AxesSubplot:ylabel='delivery_rating'>

```



## Observation

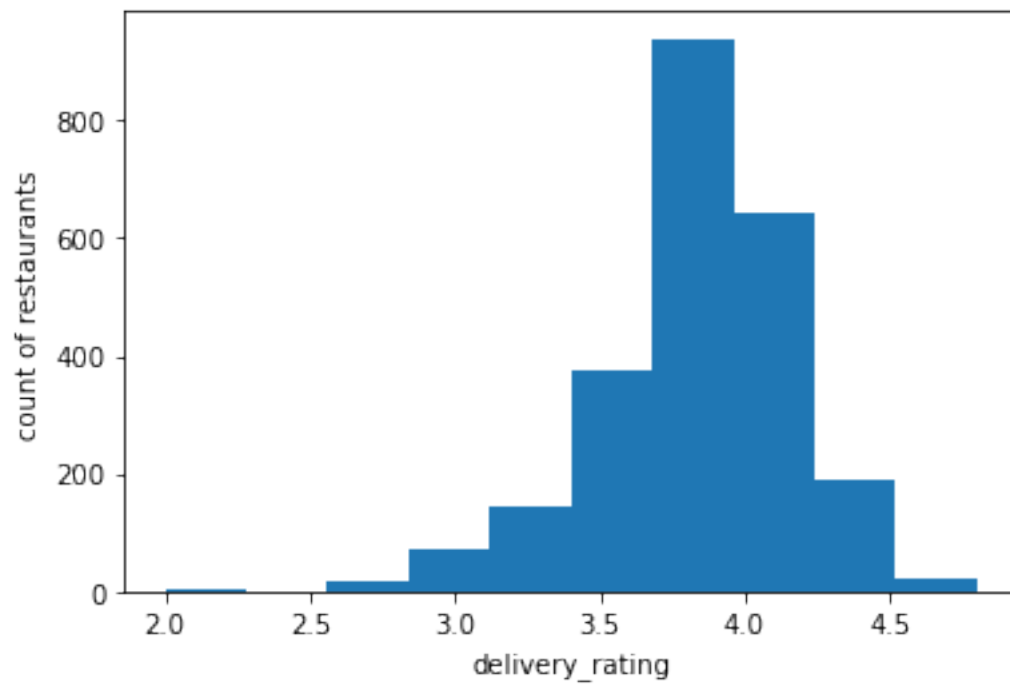
1. Most of the restaurant gets 3.9 delivery rating
2. There are very few restaurants who get less than 2.5 rating.

```

#lets plot the histogram
plt.hist(df['delivery_rating'])
plt.xlabel("delivery_rating")
plt.ylabel("count of restaurants")

```

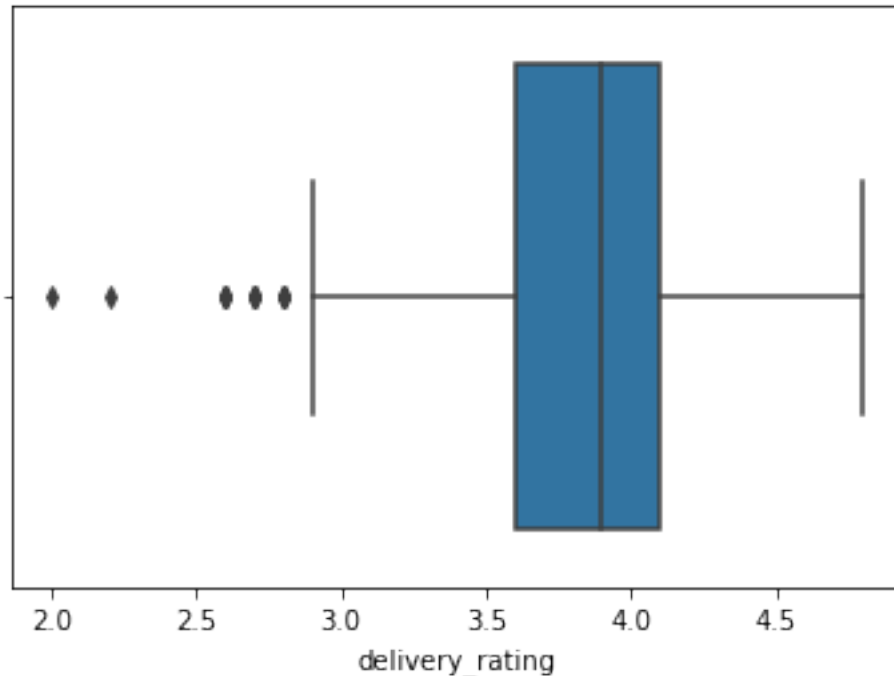
```
Text(0, 0.5, 'count of restaurants')
```



```
#box plot
```

```
sns.boxplot(df['delivery_rating'])
```

```
<AxesSubplot:xlabel='delivery_rating'>
```



## Observation

1. 25% of the delivery rating is less than 3.5
2. 50% of the delivery rating is less than 2.9
3. 75% of the delivery rating is less than 4.2
4. We can clearly observe that 50% of the delivery rating lies between 3.6 to 4.1 and thats a good news for Zomato.

```
df.columns
Index(['rest_name', 'rest_type', 'loc', 'dine_rating', 'dine_reviews',
      'delivery_rating', 'delivery_reviews', 'cuisine', 'Cost (RS)',
      'cost',
      'liked'],
      dtype='object')
```

## Feature-5 Cost (RS)

We are assuming that this is the average cost of 2 people.

```
cost=df['Cost (RS)'].value_counts()
cost
```

|      |     |
|------|-----|
| 300  | 759 |
| 400  | 624 |
| 500  | 525 |
| 200  | 352 |
| 600  | 321 |
| 350  | 313 |
| 250  | 217 |
| 150  | 198 |
| 700  | 185 |
| 1200 | 176 |
| 1000 | 172 |
| 550  | 170 |
| 450  | 150 |
| 1500 | 140 |
| 800  | 133 |
| 100  | 102 |
| 1300 | 102 |
| 1100 | 71  |
| 1600 | 64  |
| 1400 | 63  |
| 2000 | 63  |
| 900  | 43  |
| 1800 | 42  |
| 650  | 37  |
| 1700 | 37  |
| 750  | 26  |
| 2500 | 17  |
| 3000 | 12  |
| 2200 | 9   |
| 2100 | 9   |
| 950  | 6   |
| 2300 | 6   |
| 850  | 6   |
| 3200 | 4   |
| 1900 | 4   |
| 2600 | 3   |
| 2900 | 3   |
| 50   | 2   |
| 2700 | 2   |
| 2400 | 2   |
| 1050 | 2   |
| 1150 | 2   |
| 1950 | 2   |
| 4300 | 1   |
| 3500 | 1   |
| 3100 | 1   |
| 1250 | 1   |
| 1350 | 1   |
| 1650 | 1   |

```

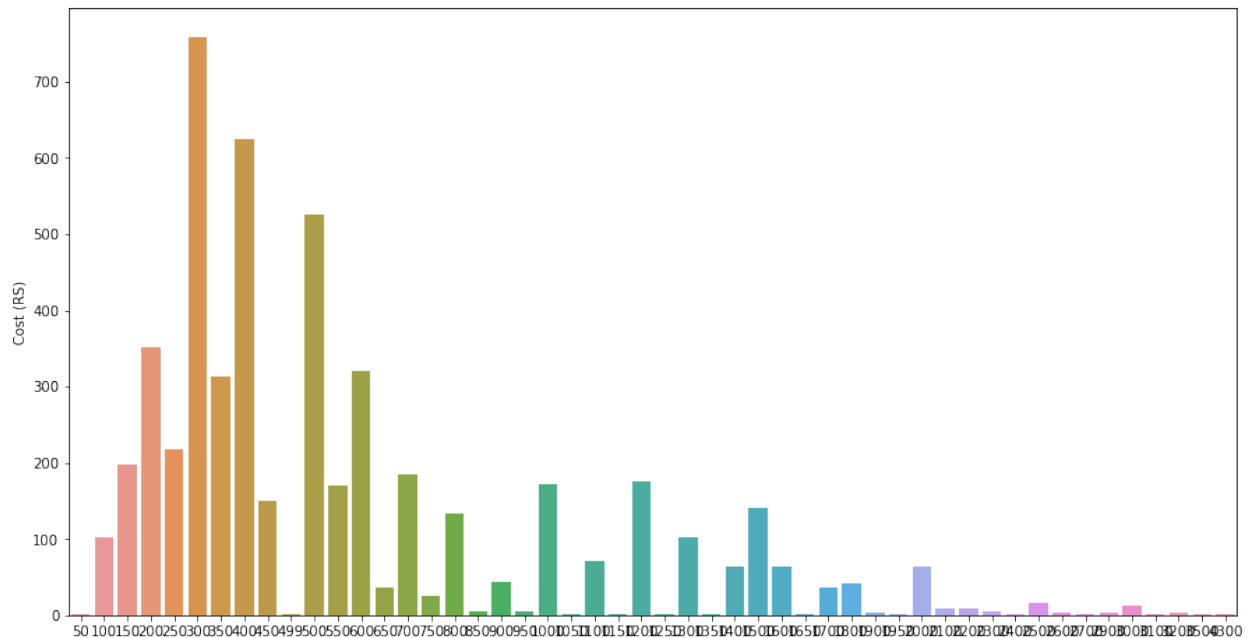
499      1
Name: Cost (RS), dtype: int64

plt.figure(figsize=(15,8))

sns.barplot(cost.index, cost)

<AxesSubplot:ylabel='Cost (RS) '>

```



## Observation

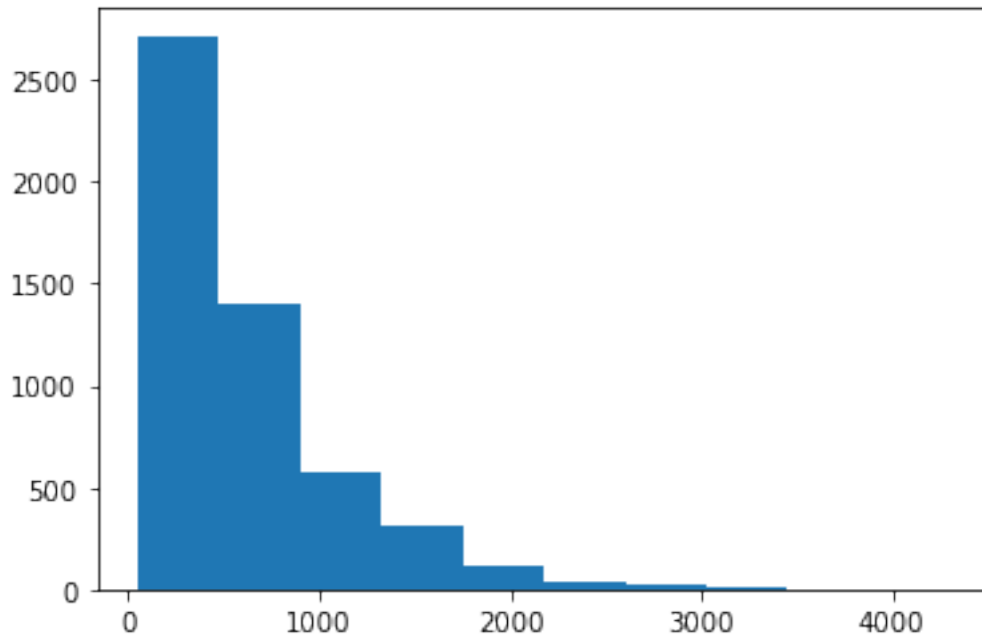
1. There are 759 restaurants which that cost Rs300 for 2 people.
2. There are 624 restaurants which that cost Rs400 for 2 people.

```

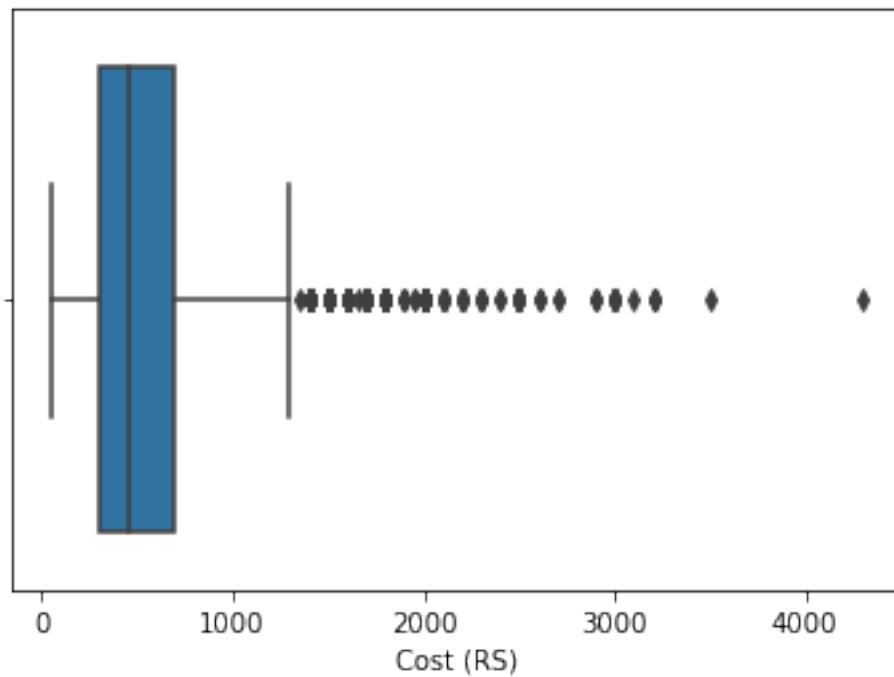
#lets plot the histogram
plt.hist(df['Cost (RS)'])

(array([2.717e+03, 1.404e+03, 5.750e+02, 3.060e+02, 1.200e+02,
3.400e+01,
        2.000e+01, 5.000e+00, 1.000e+00, 1.000e+00]),
 array([ 50., 475., 900., 1325., 1750., 2175., 2600., 3025., 3450.,
3875., 4300.]),
 <BarContainer object of 10 artists>)

```



```
sns.boxplot(df['Cost (RS)'])  
<AxesSubplot:xlabel='Cost (RS) '>
```



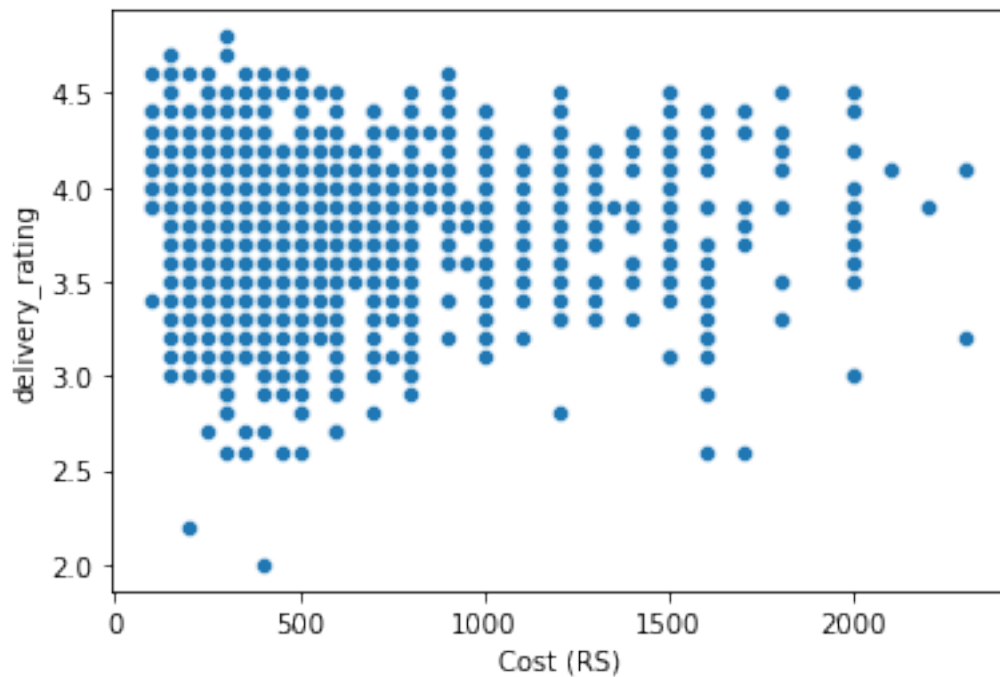
## Observation

1. 25% of the restaurants cost less than 300 rupees for 2 people.



2. 50% of the restaurants cost less than 400 rupees for 2 people.
3. 75% of the restaurants cost less than 850 rupees for 2 people.
4. Obviously there are some outliers restaurants which cost more than 2000 , some even cost 5000.

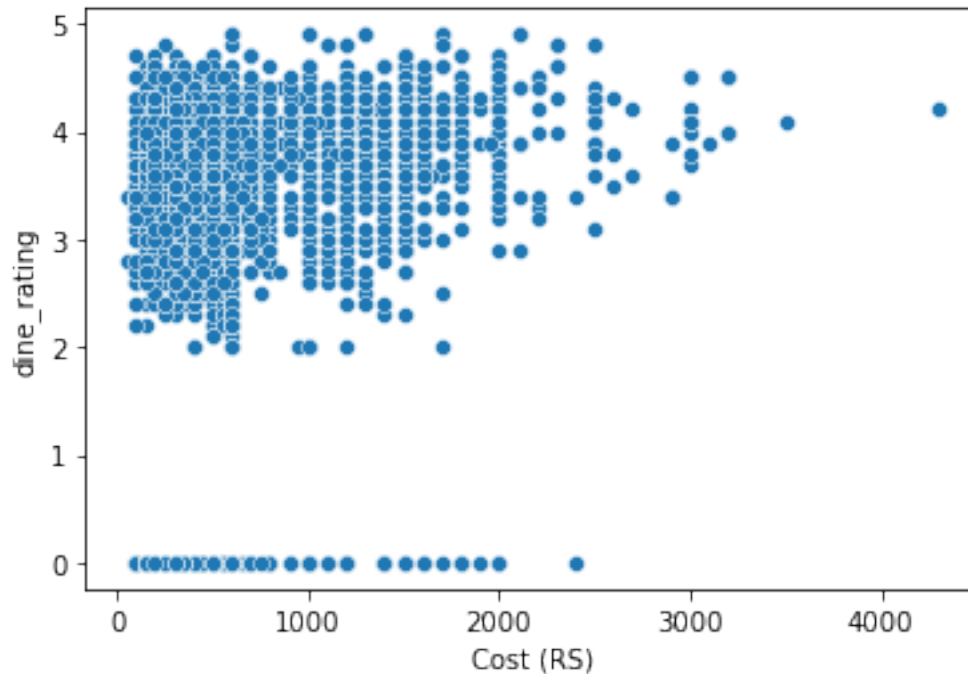
```
#scatter plot  
sns.scatterplot(df["Cost (RS)"],df["delivery_rating"])  
<AxesSubplot:xlabel='Cost (RS)', ylabel='delivery_rating'>
```



## Observation

1. There are obviously more ratings for the food which cost less than Rs500.
2. There are also restaurants which cost almost 2000 but has delivery\_rating less than 3.

```
sns.scatterplot(df["Cost (RS)"],df["dine_rating"])  
<AxesSubplot:xlabel='Cost (RS)', ylabel='dine_rating'>
```



## Observation

1. Obviously there are more ratings for the food which cost less than 1000.
2. There are restaurants which does have rating irrespective of cost.
3. As cost increases, rating moves to 3 to 5, it means people are rating high to costly restaurnts.

## Let's do some more Questions

- Q1. Create a dataframe for all the restaurants which belong to KOTHRUD?
- Q2. Which are the highly rated restaurants in BANER?
- Q3. Which are restaurnts which got 0 rating the city PUNE?
- Q4. Return the location in pune with the best restaurants?
- Q5. Plot the bar chart of top 10 locations rating wise in pune?

## Dataframe for all the restaurants which belong to KOTHRUD?

*#q-1 Create a dataframe for all the restaurants which belong to KOTHRUD?*

```
df_kothrud=df[(df['loc']=='Kothrud')]  
df_kothrud
```

|  | rest_name      |
|--|----------------|
| rest_type \                                  |                |
| 161 The 3 Musketeers Sky Gallary\r\r\n       | ... Casual     |
| Dining,Bar                                   |                |
| 183 Bacharika- Rooftop Bar And Kitchen\r\r\n | ... Casual     |
| Dining,Bar                                   |                |
| 191 ALC Bar & Bites\r\r\n                    | ... Bar,Casual |
| Dining                                       |                |
| 214 Barometer\r\r\n                          | ... Casual     |
| Dining                                       |                |
| 236 German Bakery Wunderbar\r\r\n            | ... Casual     |
| Dining                                       |                |
| ...  | ...            |
| ...  |                |
| 5338 Sudit All Day Kitchen\r\r\n             | ... Casual     |
| Dining                                       |                |
| 5339 Taco Alfresco\r\r\n                     | ...            |
| Café   |                |
| 5343 Parth Veg & Non Veg\r\r\n               | ... Casual     |
| Dining                                       |                |
| 5374 Yahoo!!! Momos\r\r\n                    | ... Quick      |
| Bites  |                |
| 5400 Taj 24/7\r\r\n                          |                |
| NaN  |                |

|                    | loc | dine_rating   | dine_reviews | delivery_rating |
|--------------------|-----|---------------|--------------|-----------------|
| delivery_reviews \ |     |               |              |                 |
| 161 Kothrud        | 0.0 | NaN           | NaN          |                 |
| NaN                |     |               |              |                 |
| 183 Kothrud        | 4.1 | (238 Reviews) | NaN          |                 |
| NaN                |     |               |              |                 |
| 191 Kothrud        | 3.7 | (38 Reviews)  | NaN          |                 |
| NaN                |     |               |              |                 |
| 214 Kothrud        | 4.6 | -1,591        | 4.3          | -               |
| 1,797              |     |               |              |                 |
| 236 Kothrud        | 3.0 | (91 Reviews)  | NaN          |                 |
| NaN                |     |               |              |                 |
| ...                | ... | ...           | ...          | ...             |
| ...                |     |               |              |                 |
| 5338 Kothrud       | 3.7 | -59           | 3.9          |                 |

|       |         |     |      |     |
|-------|---------|-----|------|-----|
| -61   |         |     |      |     |
| 5339  | Kothrud | 4.0 | -113 | 4.1 |
| -570  |         |     |      |     |
| 5343  | Kothrud | 3.6 | -32  | 4.2 |
| -257  |         |     |      |     |
| 5374  | Kothrud | 2.9 | -356 | 3.8 |
| 4,726 |         |     |      | -   |
| 5400  | Kothrud | 0.0 | NaN  | NaN |
| NaN   |         |     |      |     |

|          | cuisine   | Cost (RS) |
|----------|---|-----------|
| cost \   |   |           |
| 161      | Beverages,Chinese,Continental,                    | 1700      |
| Rs. 1700 |   |           |
| 183      | European,Middle Eastern,Continental,North Indi... | 1600      |
| Rs. 1600 |   |           |
| 191      | North Indian,Chinese,                             | 1600      |
| Rs. 1600 |   |           |
| 214      | Finger Food,North Indian,Asian,Continental,       | 1500      |
| Rs. 1500 |   |           |
| 236      | Beverages,Desserts,Cafe,Italian,Continental,Ge... | 1000      |
| Rs. 1000 |   |           |
| ...      | ...   | ...       |
| ...      |   |           |
| 5338     | North Indian,Maharashtrian,Chinese,               | 1000      |
| Rs. 1000 |   |           |
| 5339     | Mexican,Cafe,                                     | 650       |
| Rs. 650  |   |           |
| 5343     | Maharashtrian,Fast Food,Seafood,North Indian,     | 500       |
| Rs. 500  |   |           |
| 5374     | Ice Cream,Momos,                                  | 300       |
| Rs. 300  |   |           |
| 5400     | Beverages,South Indian,Street Food,               | 200       |
| Rs. 200  |   |           |

|      | liked   |
|------|---|
| 161  | NaN   |
| 183  | NaN   |
| 191  | NaN   |
| 214  | Cocktails, Pizza, Pasta, Filtered Coffee, Nach... |
| 236  | NaN   |
| ...  | ...   |
| 5338 | NaN   |
| 5339 | Nachos, Burrito Bowl, Coffee, Hot Chocolate, K... |
| 5343 | NaN   |
| 5374 | Chicken 65, Iced Tea, Veg Momos, Tandoori Momo... |
| 5400 | NaN   |

[264 rows x 11 columns]

```
df_kothrud.shape  
(264, 11)
```

## HOW MANY RESTAURANTS IN KOTHRUD HAVE MORE THAN 4.2 RATING?

```
df_kothrud[df_kothrud['delivery_rating']>4.2]
```

|   | rest_name |              |
|---|-----------|--------------|
| rest_type \                                   |           |              |
| 214 Barometer\r\r\n                           | ...       | Casual       |
| Dining  |           |              |
| 462 La Gustosa\r\r\n                          | ...       | Casual       |
| Dining  |           |              |
| 472 Yin Yang\r\r\n                            | ...       | Casual       |
| Dining  |           |              |
| 776 Barometer\r\r\n                           |           | Casual       |
| Dining  |           |              |
| 847 Theobroma\r\r\n                           |           |              |
| Bakery  |           |              |
| 1238 The Momo Panda\r\r\n                     | ...       | Quick        |
| Bites   |           |              |
| 1253 La Gustosa\r\r\n                         | ...       | Casual       |
| Dining  |           |              |
| 1524 Le Petit Amour Patisserie & Bistro\r\r\n | ...       | Café,Dessert |
| Parlor  |           |              |
| 1690 Cake Cart\r\r\n                          |           | Dessert      |
| Parlor  |           |              |
| 1701 Natural Ice Cream\r\r\n                  | ...       | Dessert      |
| Parlor  |           |              |
| 1737 Midnight Kakery\r\r\n                    | ...       |              |
| Bakery  |           |              |
| 1773 Apsara Ice Creams\r\r\n                  | ...       | Dessert      |
| Parlor  |           |              |
| 1874 Venky's Xprs\r\r\n                       | ...       | Quick        |
| Bites   |           |              |
| 1993 Baker's Basket\r\r\n                     | ...       | Bakery,Quick |
| Bites   |           |              |
| 2238 The Belgian Waffle Co.\r\r\n             | ...       | Dessert      |
| Parlor  |           |              |
| 2289 Yin Yang\r\r\n                           |           | Casual       |
| Dining  |           |              |
| 2710 Frozen Bottle\r\r\n                      | ...       |              |
| Beverage Shop                                 |           |              |
| 4643 Haveli Unlimited\r\r\n                   | ...       | Casual       |
| Dining  |           |              |

|                    | loc   | dine_rating | dine_reviews | delivery_rating |   |
|--------------------|---|-------------|--------------|-----------------|---|
| delivery_reviews \ |   |             |              |                 |   |
| 214                | Kothrud                                     | 4.6         | -1,591       | 4.3             | - |
| 1,797              |   |             |              |                 |   |
| 462                | Kothrud                                     | 4.5         | -1,855       | 4.3             | - |
| 251                |   |             |              |                 |   |
| 472                | Kothrud                                     | 4.5         | -413         | 4.3             | - |
| 719                |   |             |              |                 |   |
| 776                | Kothrud                                     | 4.6         | -1,591       | 4.4             | - |
| 1,790              |   |             |              |                 |   |
| 847                | Kothrud                                     | 3.8         | -60          | 4.5             | - |
| 286                |   |             |              |                 |   |
| 1238               | Kothrud                                     | 4.3         | -507         | 4.5             | - |
| 7,862              |   |             |              |                 |   |
| 1253               | Kothrud                                     | 4.5         | -1,854       | 4.3             | - |
| 249                |   |             |              |                 |   |
| 1524               | Kothrud                                     | 4.6         | -881         | 4.3             | - |
| 473                |   |             |              |                 |   |
| 1690               | Kothrud                                     | 4.0         | -109         | 4.4             | - |
| 229                |   |             |              |                 |   |
| 1701               | Kothrud                                     | 4.3         | -524         | 4.5             | - |
| 5,228              |   |             |              |                 |   |
| 1737               | Kothrud                                     | 4.2         | -178         | 4.8             | - |
| 127                |   |             |              |                 |   |
| 1773               | Kothrud                                     | 3.8         | -12          | 4.4             |   |
| -93                |   |             |              |                 |   |
| 1874               | Kothrud                                     | 3.1         | -93          | 4.3             | - |
| 243                |   |             |              |                 |   |
| 1993               | Kothrud                                     | 3.9         | -80          | 4.3             | - |
| 203                |   |             |              |                 |   |
| 2238               | Kothrud                                     | 3.9         | -112         | 4.3             | - |
| 1,189              |   |             |              |                 |   |
| 2289               | Kothrud                                     | 4.5         | -413         | 4.3             | - |
| 717                |   |             |              |                 |   |
| 2710               | Kothrud                                     | 3.6         | -192         | 4.4             | - |
| 3,010              |   |             |              |                 |   |
| 4643               | Kothrud                                     | 4.0         | -139         | 4.4             | - |
| 804                |   |             |              |                 |   |
|                    |   |             |              |                 |   |
|                    |   | cuisine     | Cost (RS)    | cost            |   |
| \                  |   |             |              |                 |   |
| 214                | Finger Food,North Indian,Asian,Continental, |             | 1500         | Rs. 1500        |   |
| 462                | Italian,                                    |             | 1200         | Rs. 1200        |   |
| 472                | Indonesian,Burmese,Japanese,Malaysian,Thai, |             | 1200         | Rs. 1200        |   |
| 776                | Finger Food,North Indian,Asian,Continental, |             | 1500         | Rs. 1500        |   |

|      |   |      |          |
|------|---|------|----------|
| 847  | Beverages, Fast Food, Desserts, Bakery,           | 900  | Rs. 900  |
| 1238 | Momos,  | 300  | Rs. 300  |
| 1253 | Italian,  | 1200 | Rs. 1200 |
| 1524 | Salad, Desserts, European, French, Cafe,          | 800  | Rs. 800  |
| 1690 | Bakery,   | 250  | Rs. 250  |
| 1701 | Desserts, Ice Cream,                              | 150  | Rs. 150  |
| 1737 | Fast Food, Desserts, Bakery,                      | 300  | Rs. 300  |
| 1773 | Desserts, Ice Cream,                              | 400  | Rs. 400  |
| 1874 | Fast Food,  | 400  | Rs. 400  |
| 1993 | Fast Food, Desserts, Bakery,                      | 400  | Rs. 400  |
| 2238 | Fast Food, Beverages, Desserts,                   | 300  | Rs. 300  |
| 2289 | Indonesian, Burmese, Japanese, Malaysian, Thai,   | 1200 | Rs. 1200 |
| 2710 | Desserts, Beverages,                              | 500  | Rs. 500  |
| 4643 | Biryani, Malwani, Maharashtrian, North Indian,    | 600  | Rs. 600  |
|      | liked   |      |          |
| 214  | Cocktails, Pizza, Pasta, Filtered Coffee, Nach... |      |          |
| 462  | Pasta, Pizza, Garlic Bread, Chocolate Cheeseca... |      |          |
| 472  | Sushi, Dumplings, Khau Suey, Thai Green Curry,... |      |          |
| 776  | Cocktails, Pizza, Pasta, Filtered Coffee, Nach... |      |          |
| 847  | NaN   |      |          |
| 1238 | Paneer Momos, Chicken Tandoori Momos, Iced Pea... |      |          |
| 1253 | Pasta, Pizza, Garlic Bread, Chocolate Cheeseca... |      |          |
| 1524 | Pasta, Sandwich, Salad, Fries, Cheesecake, Fis... |      |          |
| 1690 | Chips, Dutch Truffle                              |      |          |
| 1701 | Waffle Cone, Mango Ice Cream, Tender Coconut I... |      |          |
| 1737 | Macaroon, Tiramisu, Cupcake, Coffee, Red Velve... |      |          |
| 1773 | NaN   |      |          |
| 1874 | Grilled Chicken Burger, Chicken Cheese Nuggets... |      |          |
| 1993 | Chocolate Cake, Pineapple Cake                    |      |          |
| 2238 | Oreo Shake, Triple Chocolate, Nutella Waffle, ... |      |          |
| 2289 | Sushi, Dumplings, Khau Suey, Thai Green Curry,... |      |          |
| 2710 | Mango Ice Cream, Oreo Cheesecake                  |      |          |
| 4643 | Mutton Thali, Crab Thali                          |      |          |

# TOP RATED RESTAURANTS IN BANER

```
df_baner=df[df['loc']=='Baner']
df_baner
```

|                                     | rest_name |               |
|-------------------------------------|-----------|---------------|
| rest_type \                         |           |               |
| 58 Effingut\r\r\n                   | ...       |               |
| Pub                                 |           |               |
| 72 The K Factory\r\r\n              | ...       | Casual        |
| Dining,Lounge                       |           |               |
| 120 Mr Rabbit's Bar & Burrow\r\r\n  | ...       | Bar,Casual    |
| Dining                              |           |               |
| 142 Urbo\r\r\n                      |           | Lounge,Casual |
| Dining                              |           |               |
| 166 The Urban Foundry\r\r\n         | ...       | Bar,Casual    |
| Dining                              |           |               |
| ...                                 | ...       |               |
| ...                                 |           |               |
| 5386 I'm Lion, Strictly Non-Veg\r\n | ...       | Casual        |
| Dining                              |           |               |
| 5390 The Curious Kitchen & Bar\r\n  | ...       | Casual        |
| Dining,Bar                          |           |               |
| 5417 Punjabi Rasoi\r\n              | ...       |               |
| NaN                                 |           |               |
| 5418 Tokyo Bakery\r\n               | ...       |               |
| Bakery                              |           |               |
| 5420 Shawarma, Meals & More\r\n     | ...       |               |
| NaN                                 |           |               |

|                    | loc | dine_rating     | dine_reviews | delivery_rating |
|--------------------|-----|-----------------|--------------|-----------------|
| delivery_reviews \ |     |                 |              |                 |
| 58 Baner           | 4.7 | -2,894          | 4.5          |                 |
| -649               |     |                 |              |                 |
| 72 Baner           | 4.6 | -3,742          | 3.9          |                 |
| -252               |     |                 |              |                 |
| 120 Baner          | 4.5 | (633 Reviews)   | NaN          |                 |
| NaN                |     |                 |              |                 |
| 142 Baner          | 4.2 | (952 Reviews)   | NaN          |                 |
| NaN                |     |                 |              |                 |
| 166 Baner          | 4.6 | (3,912 Reviews) | NaN          |                 |
| NaN                |     |                 |              |                 |
| ...                | ... | ...             | ...          |                 |
| ...                |     |                 |              |                 |
| 5386 Baner         | 4.2 | -271            | 4.0          |                 |
| -355               |     |                 |              |                 |
| 5390 Baner         | 4.2 | -248            | 3.6          |                 |
| -842               |     |                 |              |                 |
| 5417 Baner         | 4.0 | (137 Reviews)   | NaN          |                 |
| NaN                |     |                 |              |                 |



|      |       |     |              |     |
|------|-------|-----|--------------|-----|
| 5418 | Baner | 4.0 | (49 Reviews) | NaN |
| NaN  |       |     |              |     |
| 5420 | Baner | 2.6 | -42          | 3.4 |
| -343 |       |     |              |     |

|          | cuisine   | Cost (RS) |
|----------|---|-----------|
| cost \   |   |           |
| 58       | Asian,Italian,Mughlai,North Indian,Continental,   | 2000      |
| Rs. 2000 |   |           |
| 72       | Beverages,Biryani,Charcoal Chicken,Salad,Desse... | 2000      |
| Rs. 2000 |   |           |
| 120      | South Indian,European,Continental,Finger Food,    | 1800      |
| Rs. 1800 |   |           |
| 142      | North Indian,Continental,                         | 1700      |
| Rs. 1700 |   |           |
| 166      | Fast Food,Asian,North Indian,Bar Food,            | 1600      |
| Rs. 1600 |   |           |
| ...      | ...   | ...       |
| ...      |   |           |
| 5386     | Konkan,Seafood,Goan,Mangalorean,                  | 800       |
| Rs. 800  |   |           |
| 5390     | Italian,Continental,Chinese,North Indian,         | 900       |
| Rs. 900  |   |           |
| 5417     | North Indian,                                     | 300       |
| Rs. 300  |   |           |
| 5418     | Bakery,   | 150       |
| Rs. 150  |   |           |
| 5420     | Burger,Sandwich,Beverages,Rolls,Lebanese,         | 300       |
| Rs. 300  |   |           |

|      | liked   |
|------|---|
| 58   | Apple Cider, Craft Beer, Nachos, Cocktails, Bu... |
| 72   | Pasta, Salad, Cheesecake, Cocktails, Pizza, Pe... |
| 120  | Cocktails, Tiramisu, Ravioli, Beer, Murgh Ghee... |
| 142  | Pizza, Cocktails, Mocktails, Brownie, Paneer T... |
| 166  | Cocktails, Pizza, Beer, Soya Chaap, Mocktails,... |
| ...  | ...   |
| 5386 | Sea Food, Neer Dosa, Sol Kadhi, Fry Prawns, Su... |
| 5390 | Mocktails, Brownie, Caramel Custard, Paan Moji... |
| 5417 | NaN   |
| 5418 | NaN   |
| 5420 | NaN   |

[219 rows x 11 columns]

```
df_baner_top=df_baner[df_baner["dine_rating"]>4.2]
df_baner_top
```

|             | rest_name |
|-------------|-----------|
| rest_type \ |           |

|      |                                     |     |            |
|------|-------------------------------------|-----|------------|
| 58   | Effingut\r\r\n                      | ... |            |
|      | Pub                                 |     |            |
| 72   | The K Factory\r\r\n                 | ... | Casual     |
|      | Dining,Lounge                       |     |            |
| 120  | Mr Rabbit's Bar & Burrow\r\r\n      | ... | Bar,Casual |
|      | Dining                              |     |            |
| 166  | The Urban Foundry\r\r\n             | ... | Bar,Casual |
|      | Dining                              |     |            |
| 221  | Elephant & Co.\r\r\n                | ... |            |
|      | Microbrewery                        |     |            |
| 257  | TTF - The Tenth Floor\r\r\n         | ... | Bar,Casual |
|      | Dining                              |     |            |
| 384  | Linkin Barrel\r\r\n                 | ... |            |
|      | Bar                                 |     |            |
| 388  | Bhairavee Pure Veg Restaurant\r\r\n | ... | Casual     |
|      | Dining                              |     |            |
| 420  | The Asian Box Resto Bar\r\r\n       | ... | Casual     |
|      | Dining                              |     |            |
| 599  | Maratha Samrat\r\r\n                | ... | Casual     |
|      | Dining                              |     |            |
| 975  | 7th Heaven\r\n                      | ... |            |
|      | Bakery                              |     |            |
| 1243 | The Urban Foundry\r\n               | ... | Bar,Casual |
|      | Dining                              |     |            |
| 1305 | Maratha Samrat\r\n                  | ... | Casual     |
|      | Dining                              |     |            |
| 1573 | Effingut\r\n                        |     |            |
|      | Pub                                 |     |            |
| 2046 | Andaground\r\n                      | ... |            |
|      | Quick Bites                         |     |            |
| 2165 | Elephant & Co.\r\n                  | ... |            |
|      | Microbrewery                        |     |            |
| 2219 | FatCook\r\n                         |     | Casual     |
|      | Dining                              |     |            |
| 2277 | Cream Stone\r\n                     | ... | Dessert    |
|      | Parlor                              |     |            |
| 2439 | Idlicious\r\n                       |     |            |
|      | Quick Bites                         |     |            |
| 2561 | Linkin Barrel\r\n                   | ... |            |
|      | Bar                                 |     |            |
| 3284 | Bhairavee Pure Veg Restaurant\r\n   | ... | Casual     |
|      | Dining                              |     |            |
| 3501 | The K Factory\r\n                   | ... | Casual     |
|      | Dining,Lounge                       |     |            |
| 4047 | World of Desserts\r\n               | ... | Dessert    |
|      | Parlor                              |     |            |
| 4617 | Makkhan Maar Ke\r\n                 | ... |            |
|      | NaN                                 |     |            |
| 5142 | The Asian Box Resto Bar\r\n         | ... | Casual     |

## Dining

|      | loc   | dine_rating | dine_reviews    | delivery_rating | delivery_reviews \ |
|------|-------|-------------|-----------------|-----------------|--------------------|
| 58   | Baner | 4.7         | -2,894          | 4.5             | -649               |
| 72   | Baner | 4.6         | -3,742          | 3.9             | -252               |
| 120  | Baner | 4.5         | (633 Reviews)   | NaN             | NaN                |
| 166  | Baner | 4.6         | (3,912 Reviews) | NaN             | NaN                |
| 221  | Baner | 4.3         | -471            | 4.1             | -238               |
| 257  | Baner | 4.4         | (708 Reviews)   | NaN             | NaN                |
| 384  | Baner | 4.4         | (1,219 Reviews) | NaN             | NaN                |
| 388  | Baner | 4.3         | -948            | 3.9             | -1,947             |
| 420  | Baner | 4.3         | -465            | 4.1             | -492               |
| 599  | Baner | 4.4         | -1,072          | 4.2             | -2,684             |
| 975  | Baner | 4.3         | -484            | 4.0             | -2,331             |
| 1243 | Baner | 4.6         | (3,912 Reviews) | NaN             | NaN                |
| 1305 | Baner | 4.4         | -1,072          | 4.2             | -2,684             |
| 1573 | Baner | 4.7         | -2,894          | 4.5             | -649               |
| 2046 | Baner | 4.8         | -763            | 4.2             | -243               |
| 2165 | Baner | 4.3         | -471            | 4.1             | -238               |
| 2219 | Baner | 4.3         | -823            | 4.0             | -1,199             |
| 2277 | Baner | 4.5         | -1,441          | 4.2             | -3,972             |
| 2439 | Baner | 4.5         | -1,025          | 4.3             | -357               |
| 2561 | Baner | 4.4         | (1,219 Reviews) | NaN             | NaN                |
| 3284 | Baner | 4.3         | -948            | 3.9             | -1,947             |
| 3501 | Baner | 4.6         | -3,742          | 3.9             | -252               |
| 4047 | Baner | 4.3         | (414 Reviews)   | NaN             |                    |

|          |   |     |                 |           |
|----------|---|-----|-----------------|-----------|
| NaN      |   |     |                 |           |
| 4617     | Baner   | 4.3 | (3,618 Reviews) | NaN       |
| NaN      |   |     |                 |           |
| 5142     | Baner   | 4.3 | -465            | 4.1       |
| -492     |   |     |                 |           |
|          |   |     | cuisine         | Cost (RS) |
| cost \   |   |     |                 |           |
| 58       | Asian,Italian,Mughlai,North Indian,Continental,   |     |                 | 2000      |
| Rs. 2000 |   |     |                 |           |
| 72       | Beverages,Biryani,Charcoal Chicken,Salad,Desse... |     |                 | 2000      |
| Rs. 2000 |   |     |                 |           |
| 120      | South Indian,European,Continental,Finger Food,    |     |                 | 1800      |
| Rs. 1800 |   |     |                 |           |
| 166      | Fast Food,Asian,North Indian,Bar Food,            |     |                 | 1600      |
| Rs. 1600 |   |     |                 |           |
| 221      | Salad,Continental,Finger Food,                    |     |                 | 1500      |
| Rs. 1500 |   |     |                 |           |
| 257      | Finger Food,Continental,North Indian,             |     |                 | 1500      |
| Rs. 1500 |   |     |                 |           |
| 384      | North Indian,Italian,Modern Indian,Continental,   |     |                 | 1300      |
| Rs. 1300 |   |     |                 |           |
| 388      | Beverages,Desserts,Rolls,Biryani,Continental,C... |     |                 | 1300      |
| Rs. 1300 |   |     |                 |           |
| 420      | Singaporean,Indonesian,Japanese,Thai,Malaysian... |     |                 | 1300      |
| Rs. 1300 |   |     |                 |           |
| 599      | Maharashtrian,                                    |     |                 | 1100      |
| Rs. 1100 |   |     |                 |           |
| 975      | Desserts,Bakery,                                  |     |                 | 400       |
| Rs. 400  |   |     |                 |           |
| 1243     | Fast Food,Asian,North Indian,Bar Food,            |     |                 | 1600      |
| Rs. 1600 |   |     |                 |           |
| 1305     | Maharashtrian,                                    |     |                 | 1100      |
| Rs. 1100 |   |     |                 |           |
| 1573     | Asian,Italian,Mughlai,North Indian,Continental,   |     |                 | 2000      |
| Rs. 2000 |   |     |                 |           |
| 2046     | Beverages,Healthy Food,Fast Food,                 |     |                 | 600       |
| Rs. 600  |   |     |                 |           |
| 2165     | Salad,Continental,Finger Food,                    |     |                 | 1500      |
| Rs. 1500 |   |     |                 |           |
| 2219     | Thai,Chinese,Italian,North Indian,                |     |                 | 800       |
| Rs. 800  |   |     |                 |           |
| 2277     | Desserts,Ice Cream,                               |     |                 | 400       |
| Rs. 400  |   |     |                 |           |
| 2439     | South Indian,                                     |     |                 | 250       |
| Rs. 250  |   |     |                 |           |
| 2561     | North Indian,Italian,Modern Indian,Continental,   |     |                 | 1300      |
| Rs. 1300 |   |     |                 |           |
| 3284     | Beverages,Desserts,Rolls,Biryani,Continental,C... |     |                 | 1300      |

|          |   |      |
|----------|---|------|
| Rs. 1300 |   |      |
| 3501     | Beverages,Biryani,Charcoal Chicken,Salad,Desse... | 2000 |
| Rs. 2000 |   |      |
| 4047     | Beverages,Desserts,                               | 400  |
| Rs. 400  |   |      |
| 4617     | Kebab,Biryani,Afghan,Mughlai,North Indian,        | 700  |
| Rs. 700  |   |      |
| 5142     | Singaporean,Indonesian,Japanese,Thai,Malaysian... | 1300 |
| Rs. 1300 |   |      |

|      |   | liked |
|------|---|-------|
| 58   | Apple Cider, Craft Beer, Nachos, Cocktails, Bu... |       |
| 72   | Pasta, Salad, Cheesecake, Cocktails, Pizza, Pe... |       |
| 120  | Cocktails, Tiramisu, Ravioli, Beer, Murgh Ghee... |       |
| 166  | Cocktails, Pizza, Beer, Soya Chaap, Mocktails,... |       |
| 221  | Cocktails, Popcorn, Sangria, Beer, Mushroom Cr... |       |
| 257  |   | NaN   |
| 384  | Cocktails, Pizza, Nachos, Mocktails, Long Isla... |       |
| 388  | Pasta, Naan, Brownie, Paneer Romanchak, Parath... |       |
| 420  | Khao Suey, Khau Suey, Noodle, Cocktails, Sushi... |       |
| 599  | Chicken Thali, Mutton Thali, Pandhra Rassa, No... |       |
| 975  | Belgium Chocolate Cake, Chocolava Cake, Cream ... |       |
| 1243 | Cocktails, Pizza, Beer, Soya Chaap, Mocktails,... |       |
| 1305 | Chicken Thali, Mutton Thali, Pandhra Rassa, No... |       |
| 1573 | Apple Cider, Craft Beer, Nachos, Cocktails, Bu... |       |
| 2046 | Chicken Keema, Iced Tea, Omelette, Sandwich, K... |       |
| 2165 | Cocktails, Popcorn, Sangria, Beer, Mushroom Cr... |       |
| 2219 | Pasta, Pizza, Nachos, Tom Kha Soup, Garlic Bre... |       |
| 2277 | Ferrero Rocher, Chocolate Overdose, Waffles, D... |       |
| 2439 | Idli, Filtered Coffee, Vada, Mysore Masala Dos... |       |
| 2561 | Cocktails, Pizza, Nachos, Mocktails, Long Isla... |       |
| 3284 | Pasta, Naan, Brownie, Paneer Romanchak, Parath... |       |
| 3501 | Pasta, Salad, Cheesecake, Cocktails, Pizza, Pe... |       |
| 4047 | Waffles, Churros, Freak Shake, Vanilla Ice Cre... |       |
| 4617 | Butter Chicken, Dal Makhani, Paneer Lababdar, ... |       |
| 5142 | Khao Suey, Khau Suey, Noodle, Cocktails, Sushi... |       |

```
print((df_baner_top['rest_name'].unique()))  
#there are duplicate restaurants"
```

```
[ 'Effingut\r\r\n
'The K Factory\r\r\n
"Mr Rabbit's Bar & Burrow\r\r\n
'The Urban Foundry\r\r\n
'Elephant & Co.\r\r\n
'TTF - The Tenth Floor\r\r\n
'Linkin Barrel\r\r\n
'Bhairavee Pure Veg Restaurant\r\r\n
,
'The Asian Box Resto Bar\r\r\n
```

```
'Maratha Samrat\r\r\n
'7th Heaven\r\r\n
'The Urban Foundry\r\r\n
'Maratha Samrat\r\r\n
'Effingut\r\r\n
'Andaground\r\r\n
'Elephant & Co.\r\r\n
'FatCook\r\r\n
'Cream Stone\r\r\n
'Idlicious\r\r\n
'Linkin Barrel\r\r\n
'Bhairavee Pure Veg Restaurant\r\r\n
'
'The K Factory\r\r\n
'World of Desserts\r\r\n
'Makkhan Maar Ke\r\r\n
'The Asian Box Resto Bar\r\r\n
']
```

we can see that some restaurants names are almost same but they are repeating.

```
#lets clean the strings
baner_top_rest=[]
for i in df_baner_top['rest_name'].unique():
    i=i.strip()
    baner_top_rest.append(i)

baner_top_rest
#still there are duplicates in this, lets remove the duplicate values

['Effingut',
'The K Factory',
'Mr Rabbit's Bar & Burrow',
'The Urban Foundry',
'Elephant & Co.',
'TTF - The Tenth Floor',
'Linkin Barrel',
'Bhairavee Pure Veg Restaurant',
'The Asian Box Resto Bar',
'Maratha Samrat',
'7th Heaven',
'The Urban Foundry',
'Maratha Samrat',
'Effingut',
'Andaground',
'Elephant & Co.',
'FatCook',
'Cream Stone',
'Idlicious',
```

```

'Linkin Barrel',
'Bhairavee Pure Veg Restaurant',
'The K Factory',
'World of Desserts',
'Makkhan Maar Ke',
'The Asian Box Resto Bar']

#lets remove duplicates from the list
baner_rest_top=[]
for i in baner_top_rest:
    if i not in baner_rest_top:
        baner_rest_top.append(i)

print(baner_rest_top)
print(len(baner_rest_top))

['Effingut', 'The K Factory', "Mr Rabbit's Bar & Burrow", 'The Urban Foundry', 'Elephant & Co.', 'TTF - The Tenth Floor', 'Linkin Barrel', 'Bhairavee Pure Veg Restaurant', 'The Asian Box Resto Bar', 'Maratha Samrat', '7th Heaven', 'Andaground', 'FatCook', 'Cream Stone', 'Idlicious', 'World of Desserts', 'Makkhan Maar Ke']
17

```

There are 17 restaurants in baner which got rating more than 4.2

## Restaurants which got 0 rating on Zomato in Pune.

```

df_zero_rating=df[df['dine_rating']==0]
df_zero_rating

```

|  | rest_name      |
|--|----------------|
| rest_type \                              |                |
| 36 Zen Bar\r\r\n                         |                |
| Bar                                      |                |
| 96 The Chinese Restaurant\r\r\n          | ... Fine       |
| Dining                                   |                |
| 100 Fusion Fantasea\r\r\n                | ... Bar,Casual |
| Dining                                   |                |
| 102 The Bar Stock Exchange\r\r\n         | ... Pub,Casual |
| Dining                                   |                |
| 116 Asia Kitchen By Mainland China\r\r\n | ...            |
| NaN                                      |                |
| ...                                      | ...            |
| ...                                      |                |
| 5312 Super Meal\r\n                      | ...            |
| NaN                                      |                |

|       |                                 |     |       |
|-------|---------------------------------|-----|-------|
| 5355  | Garawa Biryani\r\n              | ... | Quick |
| Bites |                                 |     |       |
| 5399  | Janta Khanaval\r\n              | ... |       |
| NaN   |                                 |     |       |
| 5400  | Taj 24/7\r\n                    |     |       |
| NaN   |                                 |     |       |
| 5419  | Homemade Meal Box - Snigdha\r\n | ... |       |
| NaN   |                                 |     |       |

|      | loc                   | dine_rating | dine_reviews | delivery_rating |
|------|-----------------------|-------------|--------------|-----------------|
| \    |                       |             |              |                 |
| 36   | Hotel Mercure, Lavasa | 0.0         | NaN          | NaN             |
| 96   | Mundhwa               | 0.0         | NaN          | NaN             |
| 100  | Erandwane             | 0.0         | NaN          | NaN             |
| 102  | FC Road               | 0.0         | NaN          | NaN             |
| 116  | Senapati Bapat Road   | 0.0         | NaN          | NaN             |
| ...  | ...                   | ...         | ...          | ...             |
| 5312 | Shivaji Nagar         | 0.0         | NaN          | NaN             |
| 5355 | Sadashiv Peth         | 0.0         | NaN          | NaN             |
| 5399 | Narhe                 | 0.0         | NaN          | NaN             |
| 5400 | Kothrud               | 0.0         | NaN          | NaN             |
| 5419 | Kondhwa               | 0.0         | NaN          | NaN             |

|                             | delivery_reviews | cuisine                       | \             |
|-----------------------------|------------------|-------------------------------|---------------|
| 36                          | NaN              |                               | Finger        |
| Food,                       |                  |                               |               |
| 96                          | NaN              |                               |               |
| Cantonese,Chinese,          |                  |                               |               |
| 100                         | NaN              | Chinese,Mughlai,Malwani,North |               |
| Indian,Continental,         |                  |                               |               |
| 102                         | NaN              | Italian,North                 |               |
| Indian,Chinese,Continental, |                  |                               |               |
| 116                         | NaN              |                               |               |
| Chinese,Asian,              |                  |                               |               |
| ...                         | ...              |                               | .             |
| ..                          |                  |                               |               |
| 5312                        | NaN              |                               | Biryani,North |
| Indian,                     |                  |                               |               |



```

5355      NaN
Biryani,
5399      NaN
Maharashtrian,
5400      NaN      Beverages,South Indian,Street
Food,
5419      NaN      North
Indian,

```

```

      Cost (RS)      cost liked
36      2400 Rs. 2400      NaN
96      2000 Rs. 2000      NaN
100     2000 Rs. 2000      NaN
102     1900 Rs. 1900      NaN
116     1800 Rs. 1800      NaN
...      ...      ...      ...
5312     350 Rs. 350      NaN
5355     250 Rs. 250      NaN
5399     300 Rs. 300      NaN
5400     200 Rs. 200      NaN
5419     300 Rs. 300      NaN

```

```
[566 rows x 11 columns]
```

```
df_zero_rating.shape
```

```
(566, 11)
```

There are 566 restaurants which got 0 ratings on zomato, may be these are new restaurants or may be not very popular.

## TOP 10 RESTAURANTS LOCATION IN PUNE

```
df_locations=df[['dine_rating','loc']]
df_locations
```

```

      dine_rating      loc
0      4.2      The Westin, Mundhwa
1      4.1      The Westin, Mundhwa
2      4.5  Conrad Pune, Bund Garden Road
3      4.0      The Westin, Mundhwa
4      3.9  Vivanta Pune, Hinjewadi
...      ...      ...
5428     3.1      Sinhgad Road
5429     2.9      Viman Nagar
5430     3.8      Pimpri
5431     3.1      Sadashiv Peth
5432     3.6      B.T. Kawade Road

```

```
[5183 rows x 2 columns]
```

```
best_rest=df_locations[df_locations["dine_rating"]>4.2]
best_rest.head(20)
```

|    | dine_rating | loc   |
|----|-------------|---|
| 2  | 4.5         | Conrad Pune, Bund Garden Road                   |
| 5  | 4.5         | Hyatt Pune, Nagar Road                          |
| 8  | 4.5         | Sheraton Grand, Bund Garden Road                |
| 18 | 4.3         | The Hyatt Regency, Nagar Road                   |
| 21 | 4.8         | JW Marriott Pune, Senapati Bapat Road           |
| 22 | 4.3         | Crowne Plaza Pune City Centre, Bund Garden Road |
| 25 | 4.4         | JW Marriott Pune, Senapati Bapat Road           |
| 29 | 4.3         | Blue Diamond, Koregaon Park                     |
| 38 | 4.8         | Koregaon Park                                   |
| 39 | 4.6         | Mundhwa   |
| 40 | 4.3         | Vivanta Pune, Hinjewadi                         |
| 42 | 4.5         | JW Marriott Pune, Senapati Bapat Road           |
| 43 | 4.4         | East Street                                     |
| 49 | 4.9         | Koregaon Park                                   |
| 52 | 4.4         | Marriott Suites Pune                            |
| 53 | 4.4         | Della Adventure Resort                          |
| 58 | 4.7         | Baner   |
| 61 | 4.5         | Bund Garden Road                                |
| 63 | 4.5         | Shivaji Nagar                                   |
| 65 | 4.4         | ABC Farms,Mundhwa                               |

```
best_rest.shape
```

```
(439, 2)
```

```
a=best_rest.groupby("loc")
print(a)
```

```
<pandas.core.groupby.generic.DataFrameGroupBy object at 0x7fa3213aa6d0>
```

```
location_wise_best_Restaurant=a.size()
print(location_wise_best_Restaurant)
print(type(location_wise_best_Restaurant))
```

| loc                           |    |
|-------------------------------|----|
| ABC Farms,Mundhwa             | 2  |
| Akurdi                        | 1  |
| Amanora Town Centre, Hadapsar | 4  |
| Aundh                         | 17 |
| Balewadi                      | 3  |
| ..                            | .. |
| Wagholi                       | 1  |
| Wakad                         | 11 |

```

Wanowrie                2
Warje                    1
Yerawada                 1
Length: 91, dtype: int64
<class 'pandas.core.series.Series'>

location_wise_best=location_wise_best_Restaurant.sort_values(ascending
=False)
a=location_wise_best[:10]

location_wise_best

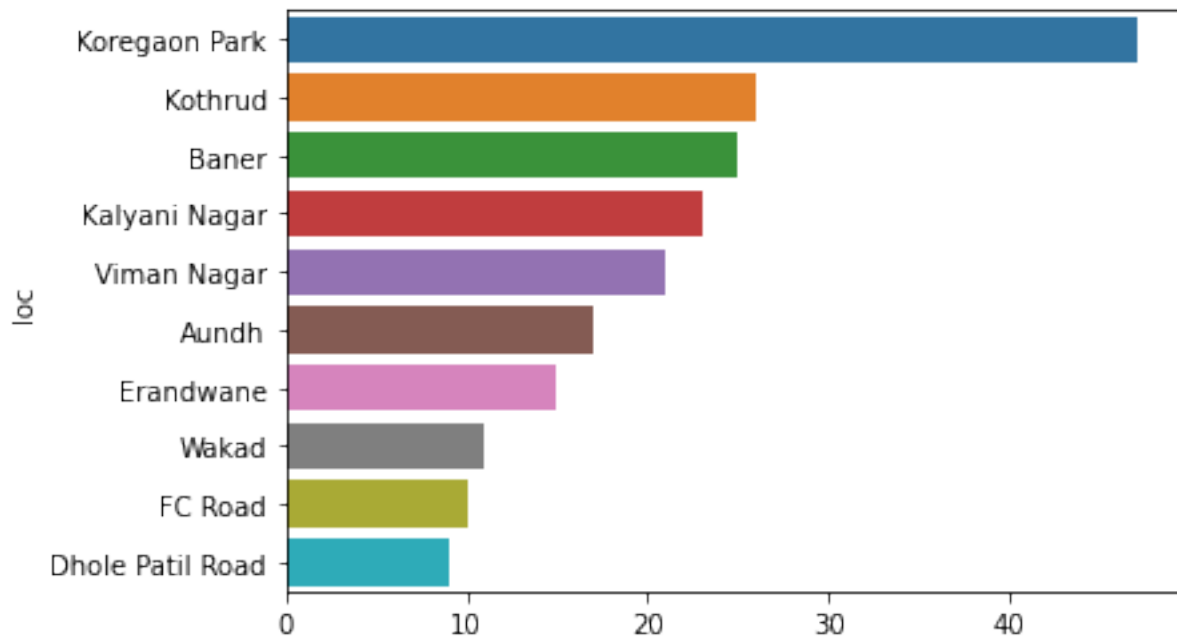
loc
Koregaon Park           47
Kothrud                  26
Baner                    25
Kalyani Nagar            23
Viman Nagar              21
..
Pashan                   1
Pimple Gurav             1
Pimpri                   1
Pubtown, Creaticity Mall, Yerawada 1
Yerawada                  1
Length: 91, dtype: int64

#bar plot

sns.barplot(x=a,y=a.index)

<AxesSubplot:ylabel='loc'>

```



```
#total number of restaurant by location
```

```
Number_of_location=df[['loc','dine_rating']]
a=Number_of_location.groupby("loc")
rest_per_location=a.size()
```

```
rest_per_location=rest_per_location.sort_values(ascending=False)
rest_per_location
```

```
loc
Kothrud                264
Wakad                  225
Viman Nagar            224
Baner                  219
Hinjawadi              213
```

```
...
Rahul Complex, Kothrud    1
Bopkhel                  1
St Larn Hotel, Koregaon Park  1
Super Mall                1
Hotel Satish Executive, Wakad  1
Length: 193, dtype: int64
```

```
rest_per_location[:10]
```

```
loc
Kothrud                264
Wakad                  225
Viman Nagar            224
```

|                 |     |
|-----------------|-----|
| Baner           | 219 |
| Hinjawadi       | 213 |
| Hadapsar        | 183 |
| Kharadi         | 180 |
| Sinhgad Road    | 142 |
| Pimple Saudagar | 134 |
| Koregaon Park   | 123 |

dtype: int64

*#now we want to find  
 #(number of rest which got more than 4.2/ total number of rest) per  
 location*

*#we are concatenating two series together*

frames=[rest\_per\_location,location\_wise\_best]

```
data_n=pd.concat(
    frames,
    axis=1,
    join="inner",
    ignore_index=False,
    copy=True,
)
```

data\_n

|                                   | 0   | 1  |
|-----------------------------------|-----|----|
| loc                               |     |    |
| Kothrud                           | 264 | 26 |
| Wakad                             | 225 | 11 |
| Viman Nagar                       | 224 | 21 |
| Baner                             | 219 | 25 |
| Hinjawadi                         | 213 | 7  |
| ...                               | ... | .. |
| The Mills, Bund Garden Road       | 1   | 1  |
| The E-Square Hotel, Shivaji Nagar | 1   | 1  |
| Creaticity Mall, Yerawada         | 1   | 1  |
| Panchshil Tech Park, Yerawada     | 1   | 1  |
| Parichay Hotel, FC Road           | 1   | 1  |

[91 rows x 2 columns]

data\_n[0]

|                             |     |
|-----------------------------|-----|
| loc                         |     |
| Kothrud                     | 264 |
| Wakad                       | 225 |
| Viman Nagar                 | 224 |
| Baner                       | 219 |
| Hinjawadi                   | 213 |
| ...                         | ... |
| The Mills, Bund Garden Road | 1   |

```
The E-Square Hotel, Shivaji Nagar      1
Creaticity Mall, Yerawada             1
Panchshil Tech Park, Yerawada        1
Parichay Hotel, FC Road               1
Name: 0, Length: 91, dtype: int64
```

```
print(len(data_n[0].values))
```

```
91
```

```
data_n['popularity_percentage']=list(map(lambda t: (t[1]/t[0])*100,
zip(data_n[0], data_n[1])))
```

```
data_n
```

|                                   | 0   | 1  | popularity_percentage |
|-----------------------------------|-----|----|-----------------------|
| loc                               |     |    |                       |
| Kothrud                           | 264 | 26 | 9.848485              |
| Wakad                             | 225 | 11 | 4.888889              |
| Viman Nagar                       | 224 | 21 | 9.375000              |
| Baner                             | 219 | 25 | 11.415525             |
| Hinjawadi                         | 213 | 7  | 3.286385              |
| ...                               | ... | .. | ...                   |
| The Mills, Bund Garden Road       | 1   | 1  | 100.000000            |
| The E-Square Hotel, Shivaji Nagar | 1   | 1  | 100.000000            |
| Creaticity Mall, Yerawada         | 1   | 1  | 100.000000            |
| Panchshil Tech Park, Yerawada     | 1   | 1  | 100.000000            |
| Parichay Hotel, FC Road           | 1   | 1  | 100.000000            |

```
[91 rows x 3 columns]
```

```
data_updated=data_n[data_n[0]>100]
```

```
data_updated
```

|                 | 0   | 1  | popularity_percentage |
|-----------------|-----|----|-----------------------|
| loc             |     |    |                       |
| Kothrud         | 264 | 26 | 9.848485              |
| Wakad           | 225 | 11 | 4.888889              |
| Viman Nagar     | 224 | 21 | 9.375000              |
| Baner           | 219 | 25 | 11.415525             |
| Hinjawadi       | 213 | 7  | 3.286385              |
| Hadapsar        | 183 | 3  | 1.639344              |
| Kharadi         | 180 | 8  | 4.444444              |
| Sinhgad Road    | 142 | 6  | 4.225352              |
| Pimple Saudagar | 134 | 7  | 5.223881              |
| Koregaon Park   | 123 | 47 | 38.211382             |
| Chinchwad       | 114 | 2  | 1.754386              |
| Aundh           | 113 | 17 | 15.044248             |
| Kondhwa         | 104 | 4  | 3.846154              |

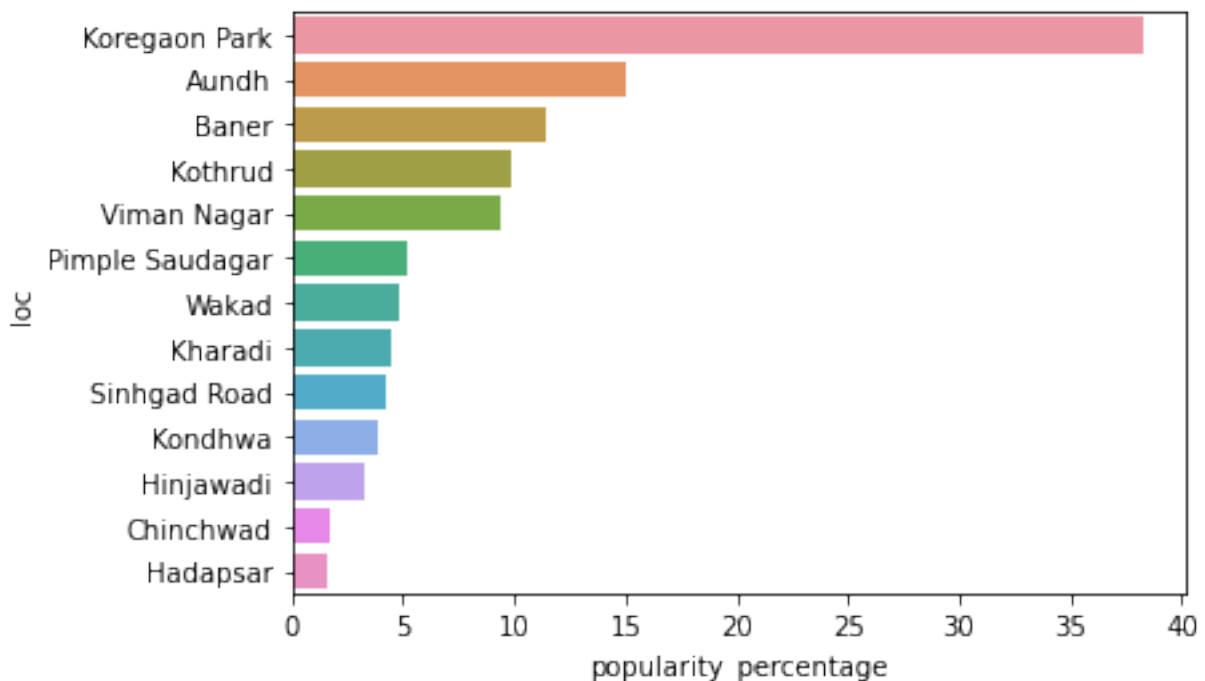
```
data_updated=data_updated.sort_values(by="popularity_percentage",ascending=False)
```

```
data_updated
```

|                 | 0   | 1  | popularity_percentage |
|-----------------|-----|----|-----------------------|
| loc             |     |    |                       |
| Koregaon Park   | 123 | 47 | 38.211382             |
| Aundh           | 113 | 17 | 15.044248             |
| Baner           | 219 | 25 | 11.415525             |
| Kothrud         | 264 | 26 | 9.848485              |
| Viman Nagar     | 224 | 21 | 9.375000              |
| Pimple Saudagar | 134 | 7  | 5.223881              |
| Wakad           | 225 | 11 | 4.888889              |
| Kharadi         | 180 | 8  | 4.444444              |
| Sinhgad Road    | 142 | 6  | 4.225352              |
| Kondhwa         | 104 | 4  | 3.846154              |
| Hinjawadi       | 213 | 7  | 3.286385              |
| Chinchwad       | 114 | 2  | 1.754386              |
| Hadapsar        | 183 | 3  | 1.639344              |

```
sns.barplot(data_updated['popularity_percentage'],data_updated.index)
```

```
<AxesSubplot:xlabel='popularity_percentage', ylabel='loc'>
```



These are the best locations in pune where find the high rated restaurants

Koregaun Park has the highest popuarity percentage out of all the locations in pune

THE END

