```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
from numpy import arange
import math
import random
import seaborn as sns
import plotly.graph_objects as go
import plotly.offline as po
from plotly.offline import download_plotlyjs, init_notebook_mode,
plot, iplot
import plotly.express as px
```

Data Preprocessing

```
df = pd.read_csv('../input/zomato-bangalore-restaurants/zomato.csv')

# making copy
df_cpy=df

df.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 51717 entries, 0 to 51716
Data columns (total 17 columns):
 #   Column                       Non-Null Count  Dtype
---  ------                       --------------  -----
 0   url                          51717 non-null  object
 1   address                      51717 non-null  object
 2   name                         51717 non-null  object
 3   online_order                 51717 non-null  object
 4   book_table                   51717 non-null  object
 5   rate                         43942 non-null  object
 6   votes                        51717 non-null  int64
 7   phone                        50509 non-null  object
 8   location                     51696 non-null  object
 9   rest_type                    51490 non-null  object
 10  dish_liked                   23639 non-null  object
 11  cuisines                     51672 non-null  object
 12  approx_cost(for two people)  51371 non-null  object
 13  reviews_list                 51717 non-null  object
 14  menu_item                    51717 non-null  object
 15  listed_in(type)              51717 non-null  object
 16  listed_in(city)              51717 non-null  object
dtypes: int64(1), object(16)
memory usage: 6.7+ MB

df.head()

                                                 url  \
0  https://www.zomato.com/bangalore/jalsa-banasha...
```

```
1  https://www.zomato.com/bangalore/spice-elephan...
2  https://www.zomato.com/SanchurroBangalore?cont...
3  https://www.zomato.com/bangalore/addhuri-udupi...
4  https://www.zomato.com/bangalore/grand-village...

                                             address
name  \
0  942, 21st Main Road, 2nd Stage, Banashankari, ...
Jalsa
1  2nd Floor, 80 Feet Road, Near Big Bazaar, 6th ...         Spice
Elephant
2  1112, Next to KIMS Medical College, 17th Cross...        San Churro
Cafe
3  1st Floor, Annakuteera, 3rd Stage, Banashankar...  Addhuri Udupi
Bhojana
4  10, 3rd Floor, Lakshmi Associates, Gandhi Baza...          Grand
Village

  online_order book_table   rate  votes
phone  \
0          Yes        Yes  4.1/5    775    080 42297555\r\n+91
9743772233
1          Yes         No  4.1/5    787                      080
41714161
2          Yes         No  3.8/5    918                    +91
9663487993
3           No         No  3.7/5     88                    +91
9620009302
4           No         No  3.8/5    166  +91 8026612447\r\n+91
9901210005

       location            rest_type  \
0  Banashankari        Casual Dining
1  Banashankari        Casual Dining
2  Banashankari  Cafe, Casual Dining
3  Banashankari          Quick Bites
4  Basavanagudi        Casual Dining

                                          dish_liked  \
0  Pasta, Lunch Buffet, Masala Papad, Paneer Laja...
1  Momos, Lunch Buffet, Chocolate Nirvana, Thai G...
2  Churros, Cannelloni, Minestrone Soup, Hot Choc...
3                                        Masala Dosa
4                                Panipuri, Gol Gappe

                        cuisines approx_cost(for two people)  \
0  North Indian, Mughlai, Chinese                         800
1     Chinese, North Indian, Thai                         800
2          Cafe, Mexican, Italian                         800
3      South Indian, North Indian                         300
```

```
4        North Indian, Rajasthani                         600

                                        reviews_list menu_item  \
0  [('Rated 4.0', 'RATED\n  A beautiful place to ...        []
1  [('Rated 4.0', 'RATED\n  Had been here for din...        []
2  [('Rated 3.0', "RATED\n  Ambience is not that ...        []
3  [('Rated 4.0', "RATED\n  Great food and proper...        []
4  [('Rated 4.0', 'RATED\n  Very good restaurant ...        []

  listed_in(type) listed_in(city)
0          Buffet    Banashankari
1          Buffet    Banashankari
2          Buffet    Banashankari
3          Buffet    Banashankari
4          Buffet    Banashankari
```

```
df.describe()
```

```
              votes
count  51717.000000
mean     283.697527
std      803.838853
min        0.000000
25%        7.000000
50%       41.000000
75%      198.000000
max    16832.000000
```

```
# df['votes']= df['votes'].astype(int)
```

```
df.isnull().sum()
df.dropna(how='any',inplace=True)
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 23193 entries, 0 to 51715
Data columns (total 17 columns):
 #   Column                       Non-Null Count  Dtype 
---  ------                       --------------  ----- 
 0   url                          23193 non-null  object
 1   address                      23193 non-null  object
 2   name                         23193 non-null  object
 3   online_order                 23193 non-null  object
 4   book_table                   23193 non-null  object
 5   rate                         23193 non-null  object
 6   votes                        23193 non-null  int64 
 7   phone                        23193 non-null  object
 8   location                     23193 non-null  object
 9   rest_type                    23193 non-null  object
 10  dish_liked                   23193 non-null  object
 11  cuisines                     23193 non-null  object
 12  approx_cost(for two people)  23193 non-null  object
 13  reviews_list                 23193 non-null  object
 14  menu_item                    23193 non-null  object
 15  listed_in(type)              23193 non-null  object
 16  listed_in(city)              23193 non-null  object
dtypes: int64(1), object(16)
memory usage: 3.2+ MB
```

```
# df['online_order'].unique()---------- alright
# df['book_table'].unique()------------ alright

df['rate'].unique()
```

```
array(['4.1/5', '3.8/5', '3.7/5', '4.6/5', '4.0/5', '4.2/5', '3.9/5',
       '3.0/5', '3.6/5', '2.8/5', '4.4/5', '3.1/5', '4.3/5', '2.6/5',
       '3.3/5', '3.5/5', '3.8 /5', '3.2/5', '4.5/5', '2.5/5', '2.9/5',
       '3.4/5', '2.7/5', '4.7/5', 'NEW', '2.4/5', '2.2/5', '2.3/5',
       '4.8/5', '3.9 /5', '4.2 /5', '4.0 /5', '4.1 /5', '2.9 /5',
       '2.7 /5', '2.5 /5', '2.6 /5', '4.5 /5', '4.3 /5', '3.7 /5',
       '4.4 /5', '4.9/5', '2.1/5', '2.0/5', '1.8/5', '3.4 /5', '3.6
/5',
       '3.3 /5', '4.6 /5', '4.9 /5', '3.2 /5', '3.0 /5', '2.8 /5',
       '3.5 /5', '3.1 /5', '4.8 /5', '2.3 /5', '4.7 /5', '2.4 /5',
       '2.1 /5', '2.2 /5', '2.0 /5', '1.8 /5'], dtype=object)
```

```
#  remove 'NEW' and '/5'
df['rate'] = df['rate'].replace('NEW',np.NaN)
df['rate'] = df['rate'].replace('-',np.NaN)
df.dropna(how = 'any', inplace = True)
df['rate'] = df.loc[:,'rate'].replace('[ ]','',regex = True)
df['rate'] = df['rate'].astype(str)
df['rate'] = df['rate'].apply(lambda r: r.replace('/5',''))
df['rate'] = df['rate'].apply(lambda r: float(r))

# df['rest_type'].unique() ------- all right
# df['dish_liked'].unique()
# df['cuisines'].unique()

df['dish_liked'] = df['dish_liked'].apply(lambda r: r.replace(", 
",","))
df['dish_liked'] = df['dish_liked'].apply(lambda r: r.split(','))
df['cuisines'] = df['cuisines'].apply(lambda r: r.replace(", ",","))
df['cuisines'] = df['cuisines'].apply(lambda r: r.split(','))

df['approx_cost(for two people)'].unique()
```

```
array(['800', '300', '600', '700', '550', '500', '450', '650', '400',
       '750', '200', '850', '1,200', '150', '350', '250', '1,500',
       '1,300', '1,000', '100', '900', '1,100', '1,600', '950', '230',
       '1,700', '1,350', '2,200', '1,400', '2,000', '1,800', '1,900',
       '180', '330', '2,500', '2,100', '3,000', '2,800', '3,400',
'40',
       '1,250', '3,500', '4,000', '2,400', '1,450', '3,200', '6,000',
       '1,050', '4,100', '2,300', '120', '2,600', '5,000', '3,700',
       '1,650', '2,700', '4,500'], dtype=object)

# remove comma from approx_cost
df['approx_cost(for two people)'] = df['approx_cost(for two
people)'].str.replace(',','')
df['approx_cost(for two people)'] = df['approx_cost(for two
people)'].astype(int)

#  dropping inessential columns
df.drop(['url','address','phone', 'menu_item',
'reviews_list'],axis=1,inplace=True)

df['listed_in(city)'].unique()

array(['Banashankari', 'Bannerghatta Road', 'Basavanagudi',
'Bellandur',
       'Brigade Road', 'Brookefield', 'BTM', 'Church Street',
       'Electronic City', 'Frazer Town', 'HSR', 'Indiranagar',
       'Jayanagar', 'JP Nagar', 'Kalyan Nagar', 'Kammanahalli',
       'Koramangala 4th Block', 'Koramangala 5th Block',
       'Koramangala 6th Block', 'Koramangala 7th Block', 'Lavelle
Road',
       'Malleshwaram', 'Marathahalli', 'MG Road', 'New BEL Road',
       'Old Airport Road', 'Rajajinagar', 'Residency Road',
       'Sarjapur Road', 'Whitefield'], dtype=object)

df['location'].unique()

array(['Banashankari', 'Basavanagudi', 'Jayanagar', 'Kumaraswamy
Layout',
       'Rajarajeshwari Nagar', 'Mysore Road', 'Uttarahalli',
       'South Bangalore', 'Vijay Nagar', 'Bannerghatta Road', 'JP
Nagar',
       'BTM', 'Wilson Garden', 'Koramangala 5th Block', 'Shanti
Nagar',
       'Richmond Road', 'City Market', 'Bellandur', 'Sarjapur Road',
       'Marathahalli', 'HSR', 'Old Airport Road', 'Indiranagar',
       'Koramangala 1st Block', 'East Bangalore', 'MG Road',
       'Brigade Road', 'Lavelle Road', 'Church Street', 'Ulsoor',
       'Residency Road', 'Shivajinagar', 'Infantry Road',
       'St. Marks Road', 'Cunningham Road', 'Race Course Road',
'Domlur',
       'Koramangala 8th Block', 'Frazer Town', 'Ejipura', 'Vasanth
Nagar',
       'Jeevan Bhima Nagar', 'Old Madras Road', 'Commercial Street',
       'Koramangala 6th Block', 'Majestic', 'Langford Town',
       'Koramangala 7th Block', 'Brookefield', 'Whitefield',
       'ITPL Main Road, Whitefield', 'Varthur Main Road, Whitefield',
       'Koramangala 2nd Block', 'Koramangala 3rd Block',
       'Koramangala 4th Block', 'Koramangala', 'Bommanahalli',
       'Hosur Road', 'Seshadripuram', 'Electronic City', 'Banaswadi',
       'North Bangalore', 'RT Nagar', 'Kammanahalli', 'Hennur',
       'HBR Layout', 'Kalyan Nagar', 'Thippasandra', 'CV Raman Nagar',
       'Kaggadasapura', 'Kanakapura Road', 'Nagawara', 'Rammurthy
Nagar',
       'Sankey Road', 'Central Bangalore', 'Malleshwaram',
       'Sadashiv Nagar', 'Basaveshwara Nagar', 'Rajajinagar',
       'New BEL Road', 'West Bangalore', 'Yeshwantpur', 'Sanjay
Nagar',
       'Sahakara Nagar', 'Jalahalli', 'Yelahanka', 'Magadi Road',
       'KR Puram'], dtype=object)

#  cleaned data
df.head()

                    name online_order book_table  rate  votes
location  \
0                  Jalsa          Yes        Yes   4.1    775
Banashankari
1         Spice Elephant          Yes         No   4.1    787
Banashankari
2        San Churro Cafe          Yes         No   3.8    918
Banashankari
3  Addhuri Udupi Bhojana           No         No   3.7     88
Banashankari
4          Grand Village           No         No   3.8    166
Basavanagudi

             rest_type
dish_liked  \
0        Casual Dining  [Pasta, Lunch Buffet, Masala Papad, Paneer
Laj...
1        Casual Dining  [Momos, Lunch Buffet, Chocolate Nirvana,
Thai ...
2  Cafe, Casual Dining  [Churros, Cannelloni, Minestrone Soup, Hot
Cho...
3          Quick Bites                                          [Masala
Dosa]
4        Casual Dining                                  [Panipuri, Gol
Gappe]

                           cuisines  approx_cost(for two people)  \
0  [North Indian, Mughlai, Chinese]                          800
1     [Chinese, North Indian, Thai]                          800
2          [Cafe, Mexican, Italian]                          800
3      [South Indian, North Indian]                          300
4        [North Indian, Rajasthani]                          600
```

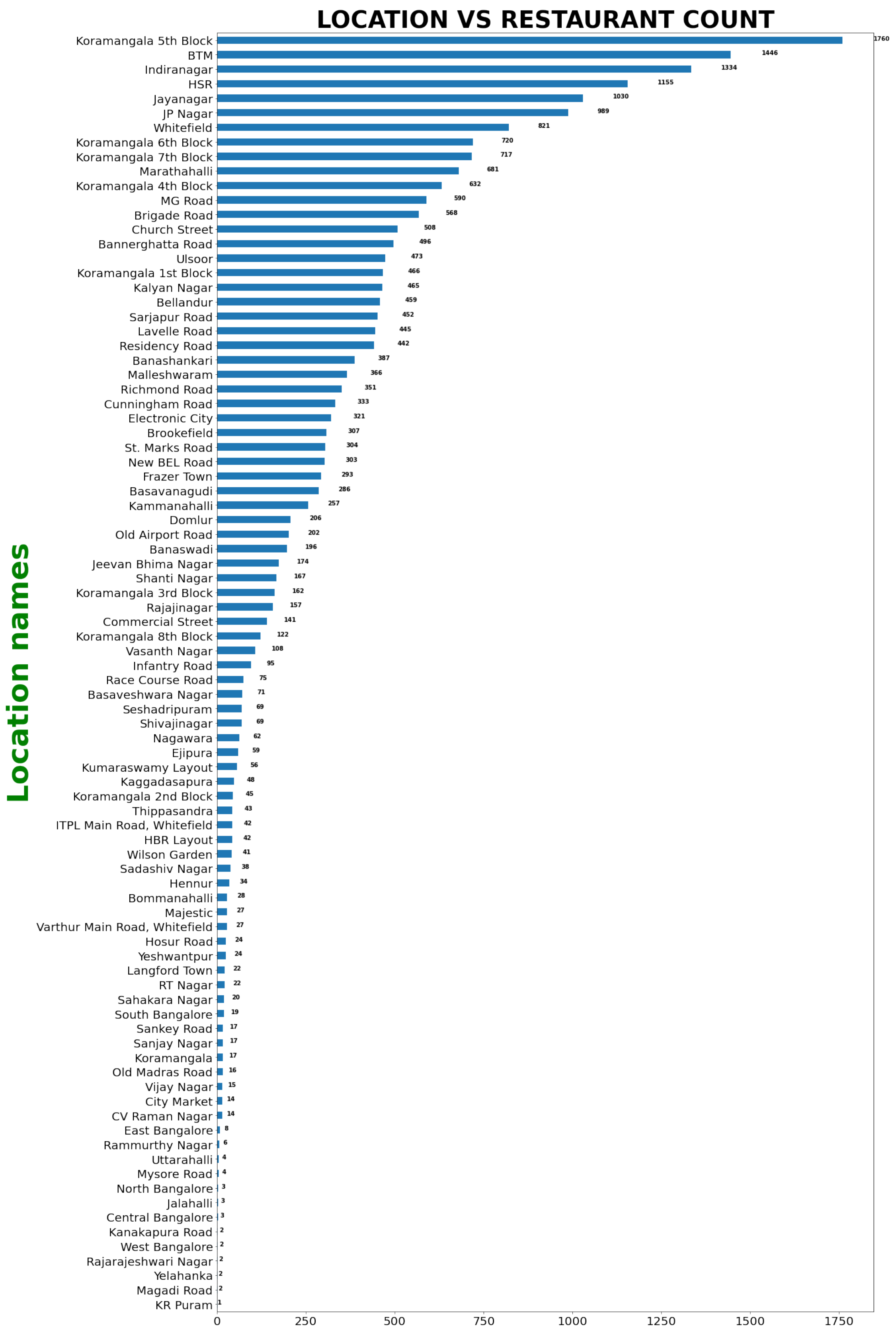
```
  listed_in(type) listed_in(city)
0          Buffet    Banashankari
1          Buffet    Banashankari
2          Buffet    Banashankari
3          Buffet    Banashankari
4          Buffet    Banashankari
```

```
df.to_csv('cleaned_data.csv',index=False)
```

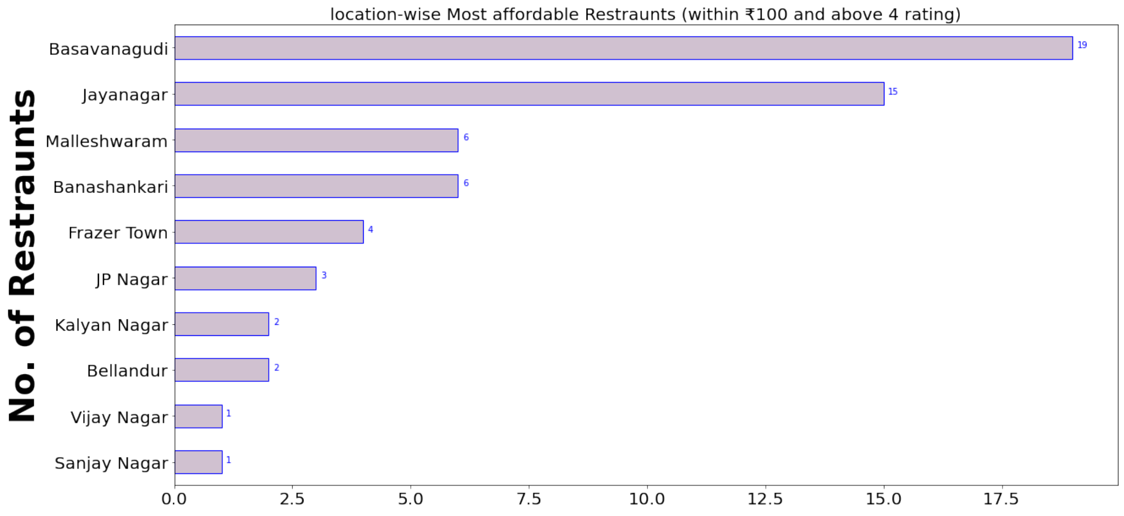
```
# Analysis
```

```
Totallocation=df['location'].value_counts().sort_values(ascending=True
)
```

```
fig=plt.figure(figsize=(20,40))
Totallocation.plot(kind="barh",fontsize=20)
plt.ylabel("Location
names",fontsize=50,color="green",fontweight='bold')
plt.title("LOCATION VS RESTAURANT
COUNT",fontsize=40,color="BLACK",fontweight='bold')
for v in range(len(Totallocation)):

plt.text(v+Totallocation[v],v,Totallocation[v],fontsize=10,color="BLAC
K",fontweight='bold')
```

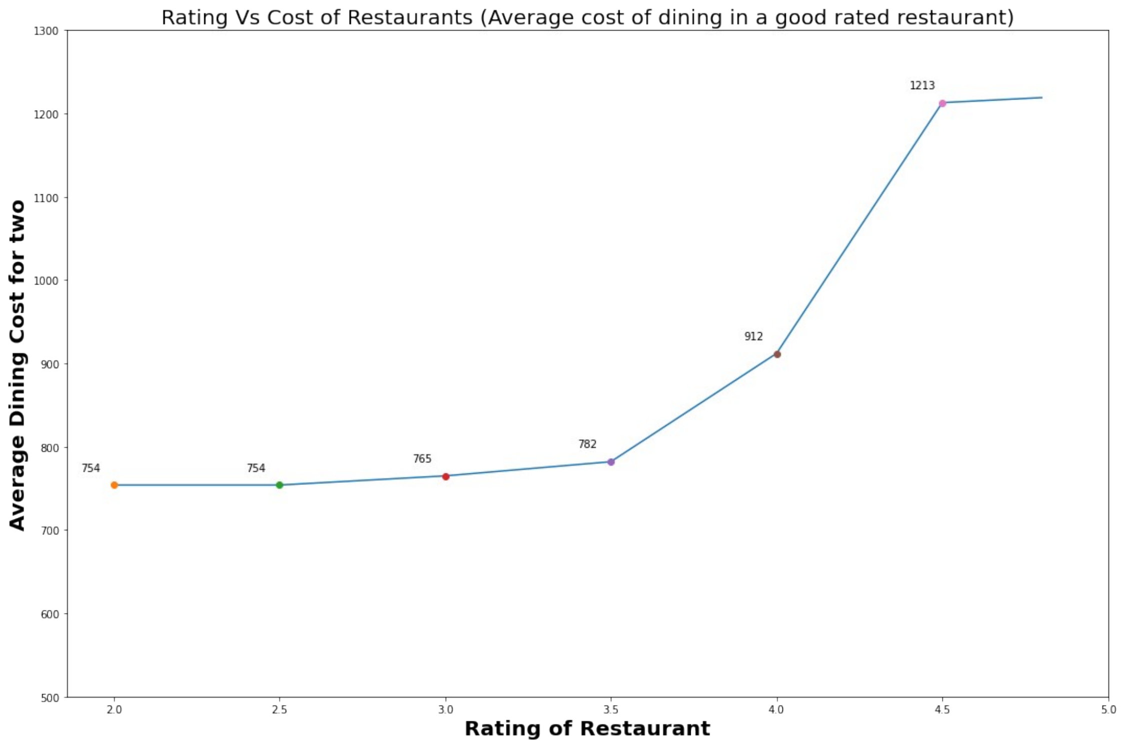

LOCATION VS RESTAURANT COUNT
Location names
Koramangala 5th Block 1760
BTM 1446
Indiranagar 1334
HSR 1155
Jayanagar 1030
JP Nagar 989
Whitefield 821
Koramangala 6th Block 720
Koramangala 7th Block 717
Marathahalli 681
Koramangala 4th Block 632
MG Road 590
Brigade Road 568
Church Street 508
Bannerghatta Road 496
Ulsoor 473
Koramangala 1st Block 466
Kalyan Nagar 465
Bellandur 459
Sarjapur Road 452
Lavelle Road 445
Residency Road 442
Banashankari 387
Malleshwaram 366
Richmond Road 351
Cunningham Road 333
Electronic City 321
Brookefield 307
St. Marks Road 304
New BEL Road 303
Frazer Town 293
Basavanagudi 286
Kammanahalli 257
Domlur 206
Old Airport Road 202
Banaswadi 196
Jeevan Bhima Nagar 174
Shanti Nagar 167
Koramangala 3rd Block 162
Rajajinagar 157
Commercial Street 141
Koramangala 8th Block 122
Vasanth Nagar 108
Infantry Road 95
Race Course Road 75
Basaveshwara Nagar 71
Seshadripuram 69
Shivajinagar 69
Nagawara 62
Ejipura 59
Kumaraswamy Layout 56
Kaggadasapura 48
Koramangala 2nd Block 45
Thippasandra 43
ITPL Main Road, Whitefield 42
HBR Layout 42
Wilson Garden 41
Sadashiv Nagar 38
Hennur 34
Bommanahalli 28
Majestic 27
Varthur Main Road, Whitefield 27
Hosur Road 24
Yeshwantpur 24
Langford Town 22
RT Nagar 22
Sahakara Nagar 20
South Bangalore 19
Sankey Road 17
Sanjay Nagar 17
Koramangala 17
Old Madras Road 16
Vijay Nagar 15
City Market 14
CV Raman Nagar 14
East Bangalore 8
Rammurthy Nagar 6
Uttarahalli 4
Mysore Road 4
North Bangalore 3
Jalahalli 3
Central Bangalore 3
Kanakapura Road 2
West Bangalore 2
Rajarajeshwari Nagar 2
Yelahanka 2
Magadi Road 2
KR Puram 1
0
250
500
750
1000
1250
1500
1750

```
fig=plt.figure(figsize=(20,10))
temp1=df[(df['approx_cost(for two people)']<=100) & (df['rate']>4)]
["location"].value_counts().sort_values(ascending=True)
temp1.plot(kind="barh",fontsize=20,color=(0.4, 0.2, 0.4,
0.3),edgecolor='blue')
plt.ylabel("No. of
Restraunts",fontsize=40,color="black",fontweight='bold')
plt.title("location-wise Most affordable Restraunts (within ₹100 and
above 4 rating)",fontsize=20,color="BLACK",fontweight='normal')
for i, v in enumerate(temp1):
    plt.text(v+0.1, i , str(v), color='blue', fontweight='medium')
```



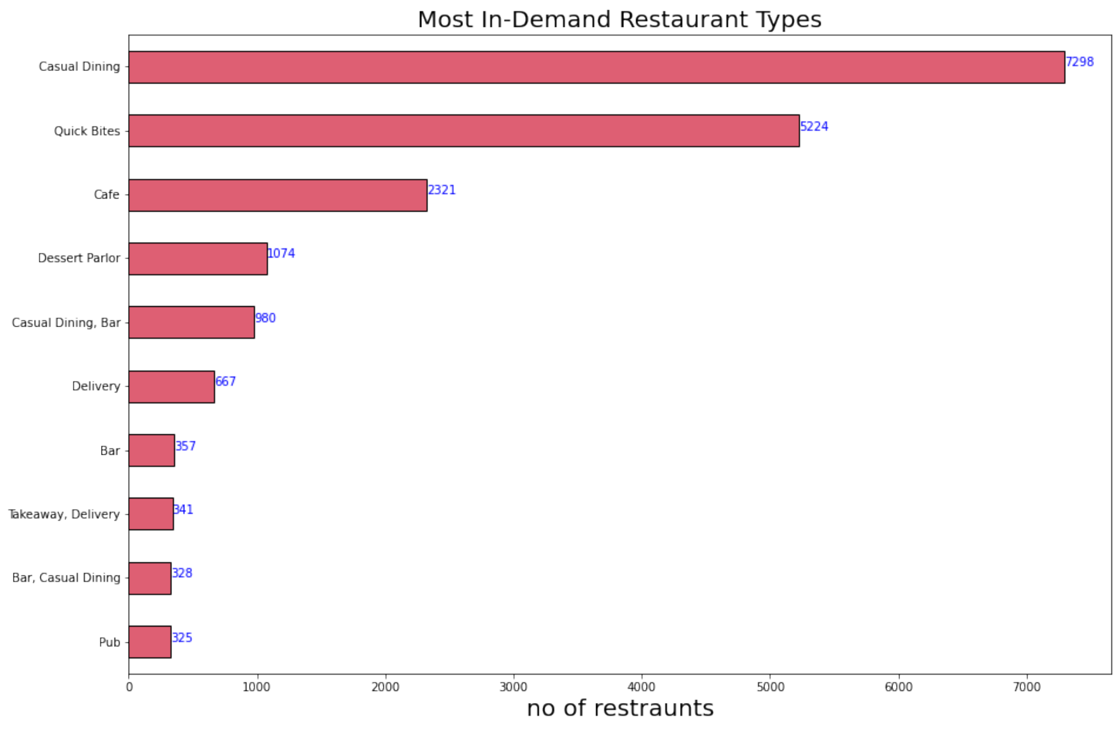
```
final_rating_list= list(arange(2.0, 5.0, 0.5))
final_rating_list.append(4.8)

rating_to_cost = {}


for rating in final_rating_list:
    average_cost_in_rated_rest = (df[df['rate']>=rating]
['approx_cost(for two people)']).mean()
    rating_to_cost[rating]= int(average_cost_in_rated_rest)

fig=plt.figure(figsize=(15,10))

x_axis_values = list(arange(2.0, 5.0, 0.5))
y_axis_values=[]

for rating in x_axis_values:
    value=(df[df['rate']>=rating]['approx_cost(for two
people)']).mean()
```

```
    y_axis_values.append(int(value))


cost_plotting= list(rating_to_cost.values())
plt.plot(final_rating_list, cost_plotting)


for i,j in zip(x_axis_values,y_axis_values):
    plt.plot(i, j,'o')
    plt.annotate(str(j),xy=(i-0.1 ,j+17))


plt.title('Rating Vs Cost of Restaurants (Average cost of dining in a
good rated restaurant)',fontsize=20,color="black",fontweight='normal')
plt.xlabel('Rating of
Restaurant',fontsize=20,color="black",fontweight='bold')
plt.ylabel('Average Dining Cost for
two',fontsize=20,color="black",fontweight='bold')
plt.xticks(list(arange(2.0, 5.5, 0.5)))
plt.yticks(list(arange(500, 1400, 100)))
plt.tight_layout()
plt.show()
```



```
from collections import Counter
fig=plt.figure(figsize=(15,10))
temp2=df['rest_type'].value_counts()[:10].sort_values(ascending=True)
temp2.plot(kind="barh",color='#de5f73',edgecolor="black")
```

```
plt.title("Most In-Demand Restaurant 
Types",fontsize=20,color="black",fontweight='normal')
plt.xlabel("no of 
restraunts",fontsize=20,color="black",fontweight='normal')
for i, v in enumerate(temp2):
    plt.text(v+0.1, i , str(v), color='blue', fontweight='medium')
```



```
labels = ["Yes",'No']
values = df['online_order'].value_counts()

fig = go.Figure(data=[go.Pie(labels=labels,
                             values=values,hole=.3)])
fig.update_traces(textfont_size=20,
                  marker=dict( line=dict(color='#000111', width=2)))

fig.update_layout(title="Online delivery availability ",
                  titlefont={'size': 20},
                  )
fig.show()

labels = ["Yes",'No']
values = df['book_table'].value_counts()

fig = go.Figure(data=[go.Pie(labels=labels,
                             values=values,hole=.3)])
fig.update_traces(textfont_size=20,
                  marker=dict( line=dict(color='#000111', width=2)))
```

```
fig.update_layout(title="Table booking availability ",
                  titlefont={'size': 20},
                  )
fig.show()


# values = df['listed_in(type)'].value_counts()

# labels = values.index
# fig = go.Figure(data=[go.Pie(labels=labels,
#                              values=values,hole=.3)])
# fig.update_traces(textfont_size=20,
#                   marker=dict( line=dict(color='#000111', width=2)))

# fig.update_layout(title="",
#                   titlefont={'size': 20},
#                   )
# fig.show()
```

```
df
```

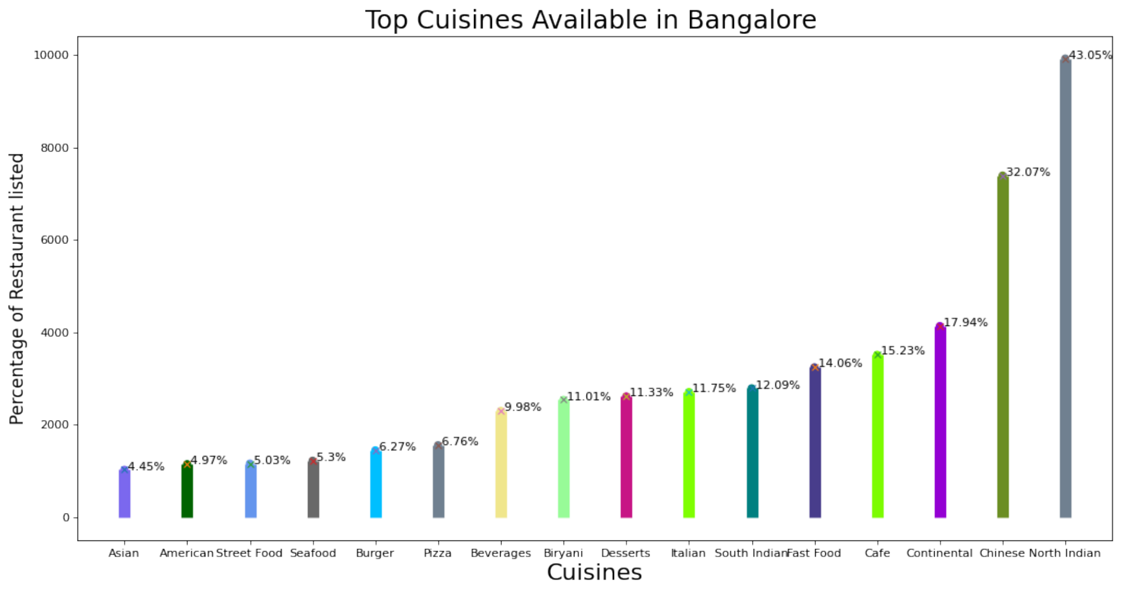
```
                                                  name online_order
\
0                                                Jalsa          Yes

1                                       Spice Elephant          Yes

2                                      San Churro Cafe          Yes

3                                Addhuri Udupi Bhojana           No

4                                        Grand Village           No

...                                                ...          ...

51705                               Izakaya Gastro Pub          Yes

51707        M Bar - Bengaluru Marriott Hotel Whitefield           No

51708                             Keys Cafe - Keys Hotel           No

51711                                          Bhagini           No

51715  Chime - Sheraton Grand Bengaluru Whitefield Ho...           No


      book_table  rate  votes                     location  \
0            Yes   4.1    775                 Banashankari
1             No   4.1    787                 Banashankari
```

```
2            No   3.8    918                Banashankari
3            No   3.7     88                Banashankari
4            No   3.8    166                Basavanagudi
...         ...   ...    ...                         ...
51705       Yes   3.8    128                  Whitefield
51707        No   3.9     77                  Whitefield
51708        No   2.8    161                  Whitefield
51711        No   2.5     81                  Whitefield
51715       Yes   4.3    236  ITPL Main Road, Whitefield

                 rest_type                                                            
dish_liked  \
0            Casual Dining  [Pasta, Lunch Buffet, Masala Papad, Paneer 
Laj...   
1            Casual Dining  [Momos, Lunch Buffet, Chocolate Nirvana, 
Thai ...   
2      Cafe, Casual Dining  [Churros, Cannelloni, Minestrone Soup, Hot 
Cho...   
3              Quick Bites                                              
[Masala Dosa]   
4            Casual Dining                              [Panipuri, Gol 
Gappe]   
...                    ...                                                
...   
51705   Bar, Casual Dining  [Beer, Chicken Guntur, Paneer Tikka, Fish, 
Noo...   
51707     Fine Dining, Bar                                 [Rooftop 
Ambience]   
51708   Casual Dining, Bar  [Salads, Coffee, Breakfast Buffet, Halwa, 
Chic...   
51711   Casual Dining, Bar                            [Biryani, 
Andhra Meal]   
51715                  Bar                    [Cocktails, Pizza, 
Buttermilk]   

                                            cuisines  \
0                 [North Indian, Mughlai, Chinese]   
1                    [Chinese, North Indian, Thai]   
2                         [Cafe, Mexican, Italian]   
3                     [South Indian, North Indian]   
4                       [North Indian, Rajasthani]   
...                                            ...   
51705     [North Indian, Continental, Mediterranean]   
51707                                [Finger Food]   
51708           [Chinese, Continental, North Indian]   
51711  [Andhra, South Indian, Chinese, North Indian]   
51715                                [Finger Food]   

       approx_cost(for two people) listed_in(type) listed_in(city)  
0                              800          Buffet    Banashankari  
```

```
1                              800         Buffet    Banashankari
2                              800         Buffet    Banashankari
3                              300         Buffet    Banashankari
4                              600         Buffet    Banashankari
...                            ...            ...             ...
51705                         1200   Pubs and bars      Whitefield
51707                         2000   Pubs and bars      Whitefield
51708                         1200   Pubs and bars      Whitefield
51711                          800   Pubs and bars      Whitefield
51715                         2500   Pubs and bars      Whitefield

[23046 rows x 12 columns]
```

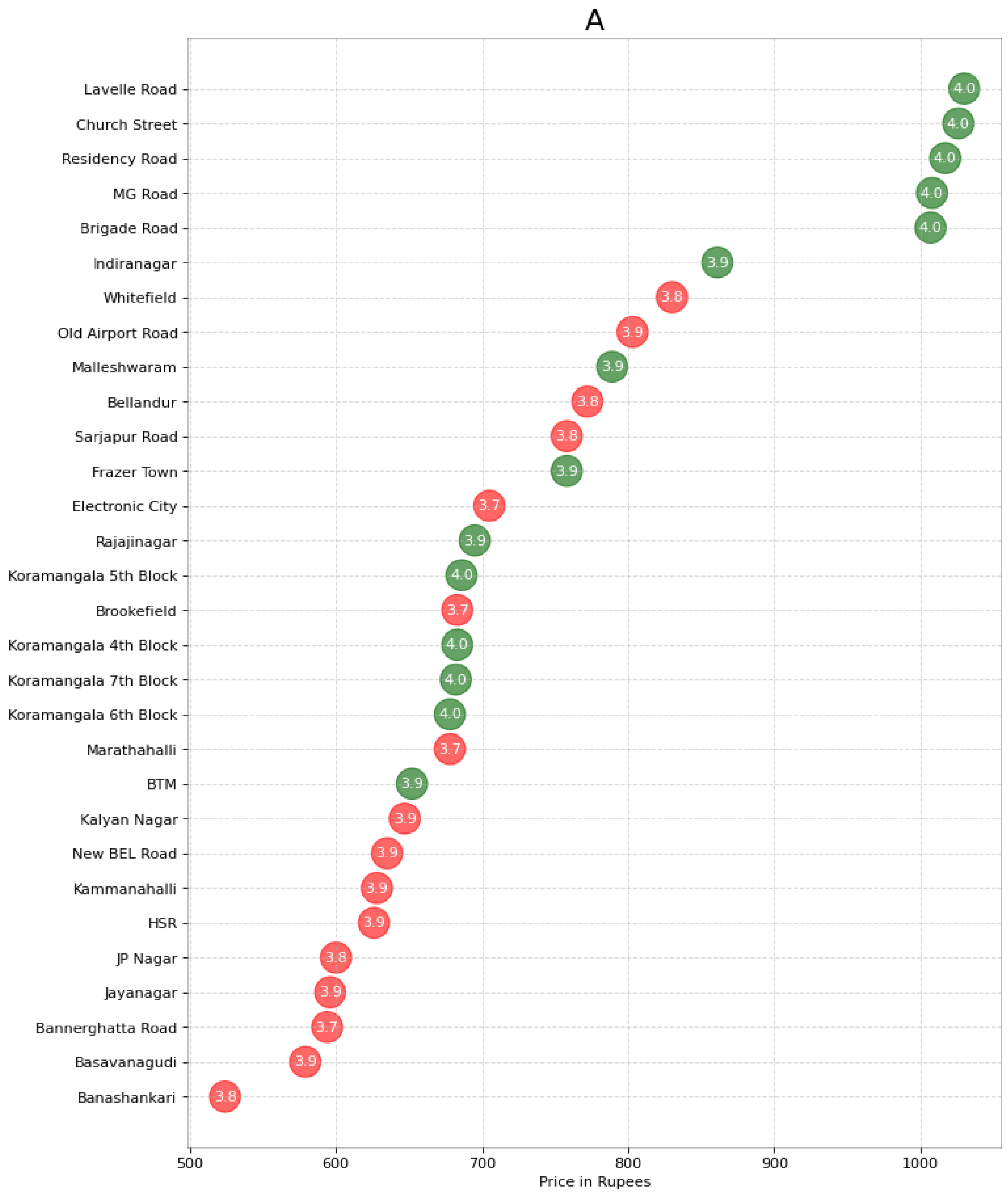
```
cuisines = {}


def add_cuisines(element_list):
    for element in element_list:
        element = element.strip()

        if element in cuisines.keys():
            cuisines[element] = cuisines[element]+1

        else:
            cuisines[element] = 1


df.cuisines.apply(add_cuisines) #function call
----------------------------------------------------------------------
--------------------

top_15_cuisines = dict(sorted(cuisines.items(), key=lambda x: x[1],
reverse=True)[15::-1])
bottom_15_cuisines = dict(sorted(cuisines.items(), key=lambda x: x[1],
reverse=True)[-15:])


keys =[]
values =[]
plotting_point=[]


for key in top_15_cuisines.keys():
    keys.append(key)


for value in top_15_cuisines.values():
    values.append(value)
    plotting_point.append(' '+str(round(value*100/len(df.cuisines),2))
+'%')

all_colors = list(plt.cm.colors.cnames.keys())
c = random.choices(all_colors, k=len(keys))


plt.figure(figsize=(16,8), dpi= 80)
plt.scatter(keys,values,color=c)
plt.vlines(ymin=0, ymax=values, x=keys, color=c, alpha=1,
linewidth=10)


for i,j,k in zip(values, keys, plotting_point):
    plt.plot( j,i, "x")
    plt.annotate(str(k),xy=(j,i))


plt.title('Top Cuisines Available in Bangalore ', fontsize=22)
plt.xlabel('Cuisines',fontsize=20,color="black",fontweight='normal')
plt.ylabel('Percentage of Restaurant
listed',fontsize=15,color="black",fontweight='normal')
plt.plot()
```

```
[]
```



```
Location_data = df.filter(['listed_in(city)', 'approx_cost(for two
people)', 'rate'])
Location_data['total_restaurant'] = 1

Location_data=
Location_data.groupby('listed_in(city)').agg({'approx_cost(for two
people)':'mean',

'total_restaurant':'sum',

'rate':'mean'
                                                              })
Location_data.rate = np.round(Location_data.rate,2)
Location_data =Location_data.sort_values('approx_cost(for two
people)', ascending=False)

Location_data['approx_cost(for two people)'] =
Location_data['approx_cost(for two people)'].astype(int)

Location_data= Location_data.sort_values('approx_cost(for two
people)', ascending=True)

average_cost = (df[df['approx_cost(for two people)']!=0]
['approx_cost(for two people)']).mean()
min_cost=min(df[df['approx_cost(for two people)']!=0]['approx_cost(for
two people)'])
max_cost=max(df[df['approx_cost(for two people)']!=0]['approx_cost(for
two people)'])

average_rate=(df[df['rate']!=0]['rate']).mean()
min_rate=min(df[df['rate']!=0]['rate'])
max_rate=max(df[df['rate']!=0]['rate'])


Location_data['colors_rate'] = ['red' if  x< average_rate else
'darkgreen' for x in Location_data['rate']]



plt.figure(figsize=(10,14), dpi= 80)
plt.scatter(Location_data['approx_cost(for two people)'],
Location_data.index, s=450, alpha=.6, color=Location_data.colors_rate)
#Annotating
for x, y, tex in zip(Location_data['approx_cost(for two people)'],
Location_data.index, Location_data['rate']):
    t = plt.text(x, y, round(tex, 1), horizontalalignment='center',
                 verticalalignment='center',
fontdict={'color':'white'})




plt.gca().spines["top"].set_alpha(.3)
plt.gca().spines["bottom"].set_alpha(.3)
plt.gca().spines["right"].set_alpha(.3)
plt.gca().spines["left"].set_alpha(.3)
# plt.yticks(df.index, df.cars)
```

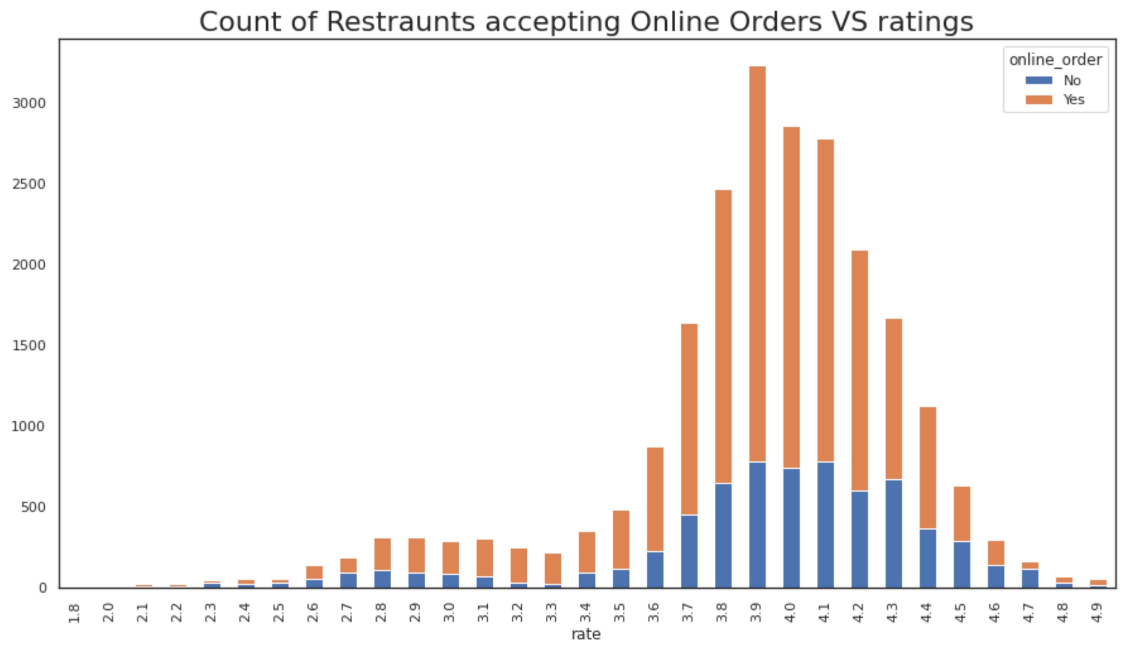
```
plt.title('A', fontdict={'size':20})
plt.xlabel('Price in Rupees')
plt.grid(linestyle='--', alpha=0.5)
# plt.xlim(-2.5, 2.5)
plt.show()
```



```
#Creating a dictionary to hold the count of dishes based on the
presence of dish in the best dishes column
dishes_set = {}

#Funtion to keep the dishes count
```

```
def find_favt_dish(dishes):
    for dish in dishes:
        if dish in dishes_set.keys():
            dishes_set[dish]+=1
        else:
            dishes_set[dish]=1

df.dish_liked.apply(find_favt_dish)
#Deleting nan value
# del dishes_set['nan']
#Sorting the dataframe
liked_dishes_list = (sorted(dishes_set.items(), key=lambda x: x[1],
reverse=True))

top_15_dishes=pd.DataFrame(liked_dishes_list[:15],columns=['Dishes','C
ount'])
# plt.barh(top_15_dishes['Dishes'],top_10_dishes['Count'])


fig = px.bar(top_15_dishes, x="Dishes", y="Count", text="Count")

fig.update_traces(textposition='inside',marker_color='#de5f30',width=0
.5)

fig.update_layout(
    height=500,
    title_text='Top Dishes liked by People',
    plot_bgcolor='#c3eb34'
)

fig.show()

sns.set(rc = {'figure.figsize':(15,8)})
sns.set_style('white')
y=pd.crosstab(df.rate,df.online_order)
y.plot(kind='bar',stacked=True)
plt.title("Count of Restraunts accepting Online Orders VS
ratings",fontsize=22)
```

```
Text(0.5, 1.0, 'Count of Restraunts accepting Online Orders VS
ratings')
```


Count of Restraunts accepting Online Orders VS ratings
online_order
No
Yes
0
500
1000
1500
2000
2500
3000
1.8
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.1
4.2
4.3
4.4
4.5
4.6
4.7
4.8
4.9
rate