Insights on Zomato Data ¶

In [2]:

```
pip install plotly
```

```
Collecting plotly
  Downloading plotly-5.12.0-py2.py3-none-any.whl (15.2 MB)
Collecting tenacity>=6.2.0
  Downloading tenacity-8.1.0-py3-none-any.whl (23 kB)
Installing collected packages: tenacity, plotly
Successfully installed plotly-5.12.0 tenacity-8.1.0
Note: you may need to restart the kernel to use updated packages.
```

In [3]:

```
# Importing Libraries
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
import pandas as pd
import plotly.express as px
import plotly.graph_objects as go
# Graph Object Plotly sublibray
import re
```

In [4]:

```
# To Load Data
data = pd.read_excel(r'C:\Users\DELL14\Downloads\zomato.xlsx')
```

In [5]:

```
# DataSet Has 51717 rows and 17 Columns
data.shape
```

Out[5]:

```
(51717, 17)
```

In [6]:

```
# Dropping Irrelevant Columns in our Dataset
data.drop(['url', 'phone', 'menu_item','location','rest_type'], axis=1, inplace=True)
```

In [7]:

```
data.rename(columns={"listed_in(type)":"rest_type",
                     "listed_in(city)":"location",
                     "approx_cost(for two people)":"cost"},inplace=True)
```

In [8]:

```
data.drop_duplicates(inplace=True)
# to Remove Null Values
data.shape
# new shape
```

Out[8]:

```
(51667, 12)
```

In [9]:

```
# Removing Null Values from these columns
data=data[data.cuisines.isna()==False]
data=data[data.rate.isna()==False]
data=data[data.cost.isna()==False]
```

In [10]:

```
data.isna().sum()
```

Out[10]:

```
address             0
name                0
online_order        0
book_table          0
rate                0
votes               0
dish_liked      20181
cuisines            0
cost                0
reviews_list        0
rest_type           0
location            0
dtype: int64
```

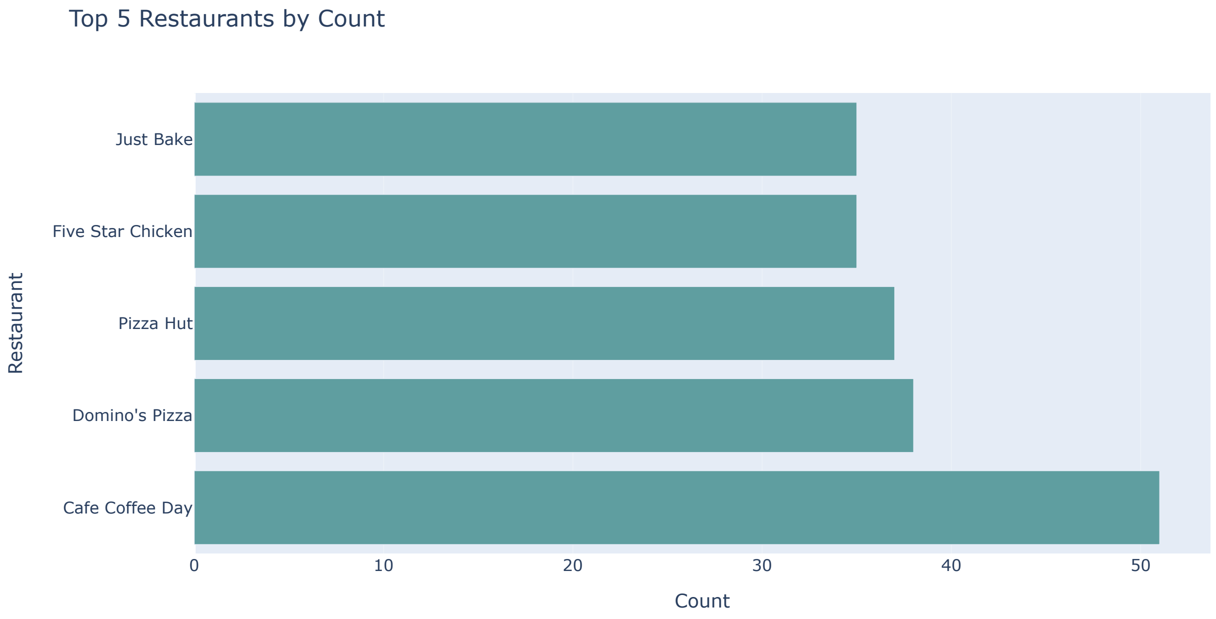
In [11]:

```
# Restaurant Name can be repeated due to multiple branches in State.
# But one branch will have one only 1 Address
# So, By filtering on Address we can delete repeated Restaurant Data
data.drop_duplicates(["name","address"],inplace=True)
```

1) Top 5 Restaurants by Count

In [12]:

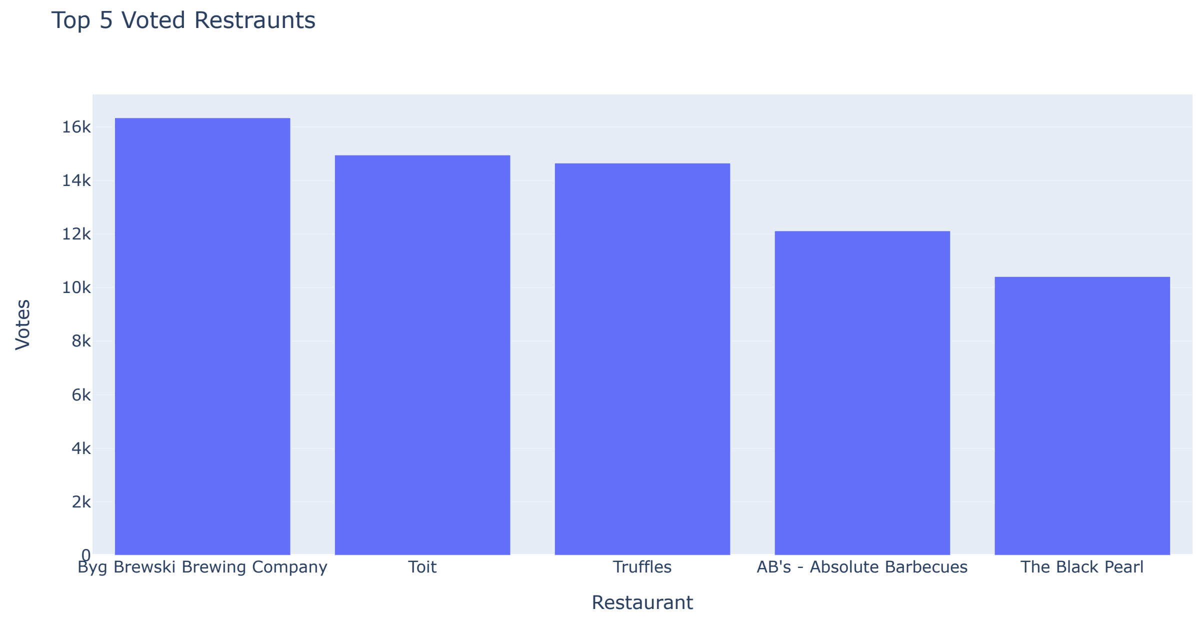
```
restro5 = data.groupby('name')['name'].count().sort_values(ascending=False).head(5)

fig = px.bar(restro5,
color_discrete_sequence =['cadetblue']*len(restro5),
title = "Top 5 Restaurants by Count",
orientation='h',
labels = {"value":"Count","index":"Restaurant"})
fig.update_layout(showlegend=False)
```



2) Top 5 Voted Restraunts

In [13]:

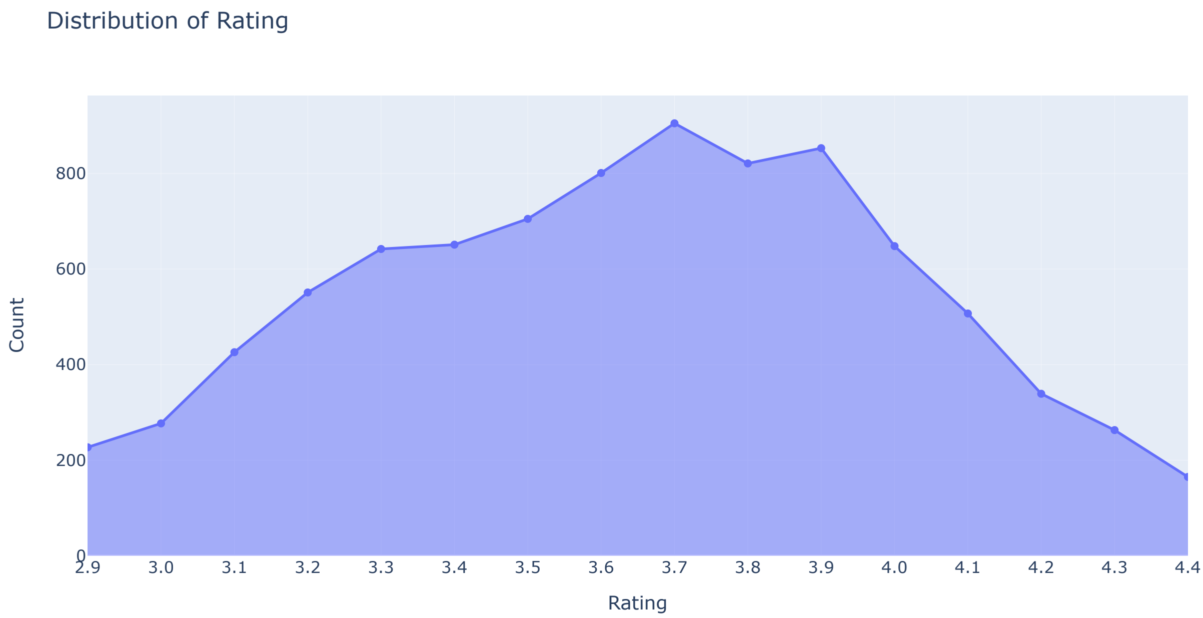
```
votedresto5 = data.sort_values(by=["votes"],ascending=False).head(5)
px.bar(votedresto5,
       x="name",
       y="votes",
       title ="Top 5 Voted Restraunts",
       labels={"name":"Restaurant","votes":"Votes"}
      )
```



3) Distribution of ratings by Counts

In [14]:

```
rates= []
pattern = "^[^ /]*"
for i in data["rate"].fillna(float("NaN")).replace("NEW",float("NaN")).replace("-",float("NaN")):
        rate1 = re.findall(pattern,str(i))
        rates.extend(rate1)

data["rate"]= rates
rateareadata = data.groupby('rate')['name'].count()
fig = px.area(rateareadata,
              title="Distribution of Rating",
              markers=True,labels={"value":"Count","rate":"Rating"},
              range_x=[10,25])
fig.update_layout(showlegend=False)
fig.show()
print("Mean : ",data.rate.describe().top)
```

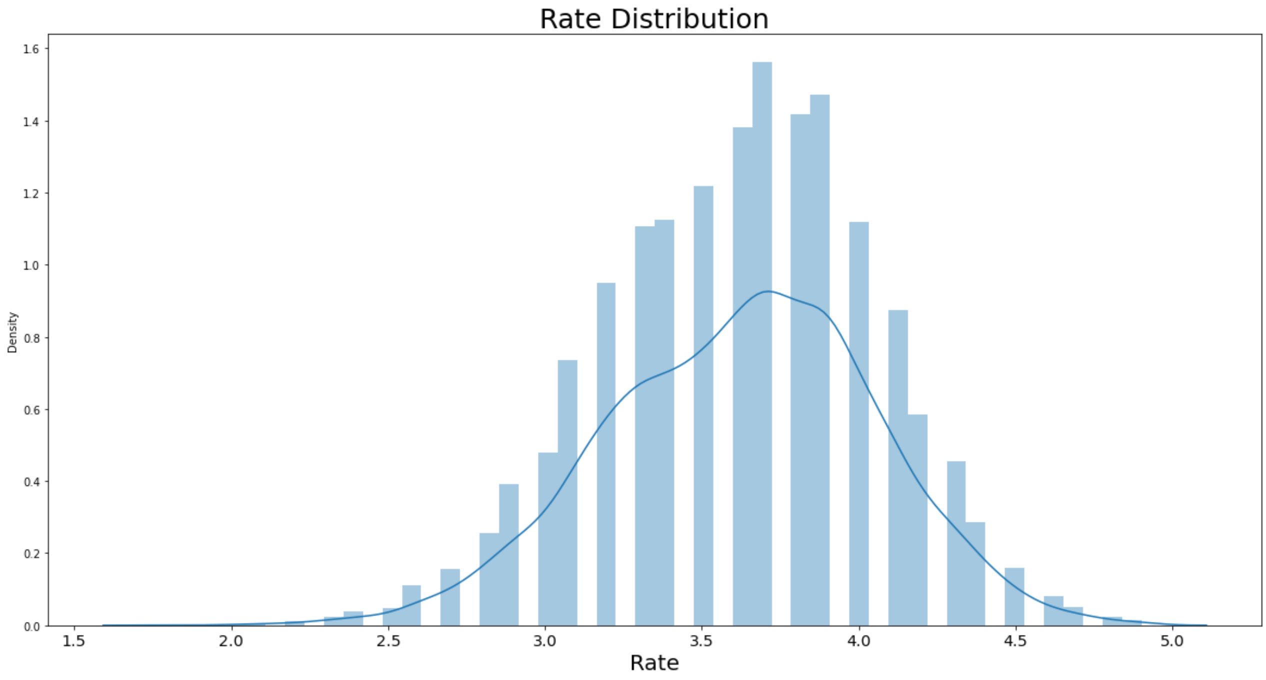


```
Mean :  3.7
```

In [15]:

```
x=data.rate.sort_values()
data1= [x]
plt.figure(figsize=(20,10))
sns.distplot(data1)
plt.title('Rate Distribution', fontsize=25)
plt.xlabel('Rate', fontsize=20)
plt.xticks(

        fontweight='light',
        fontsize='x-large'
    )
plt.show()
```

```
C:\Users\DELL14\anaconda3\lib\site-packages\seaborn\distributions.py:2619: FutureWarning:

`distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot`
(a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
```



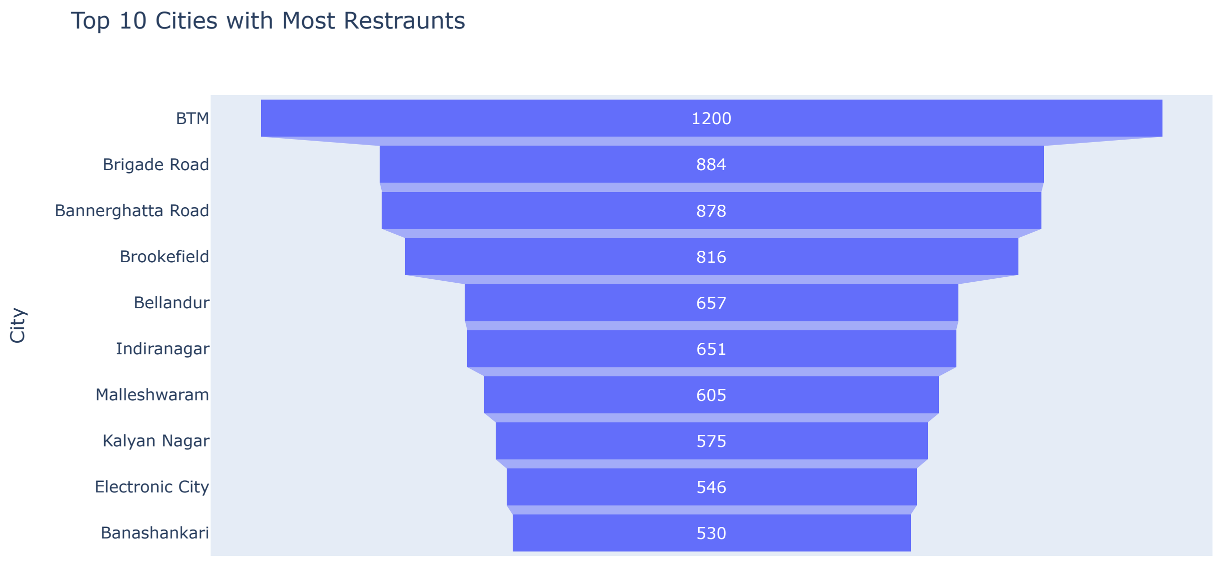
In [ ]:

```

```

4) Top 10 Cities with Most Restraunts

In [16]:

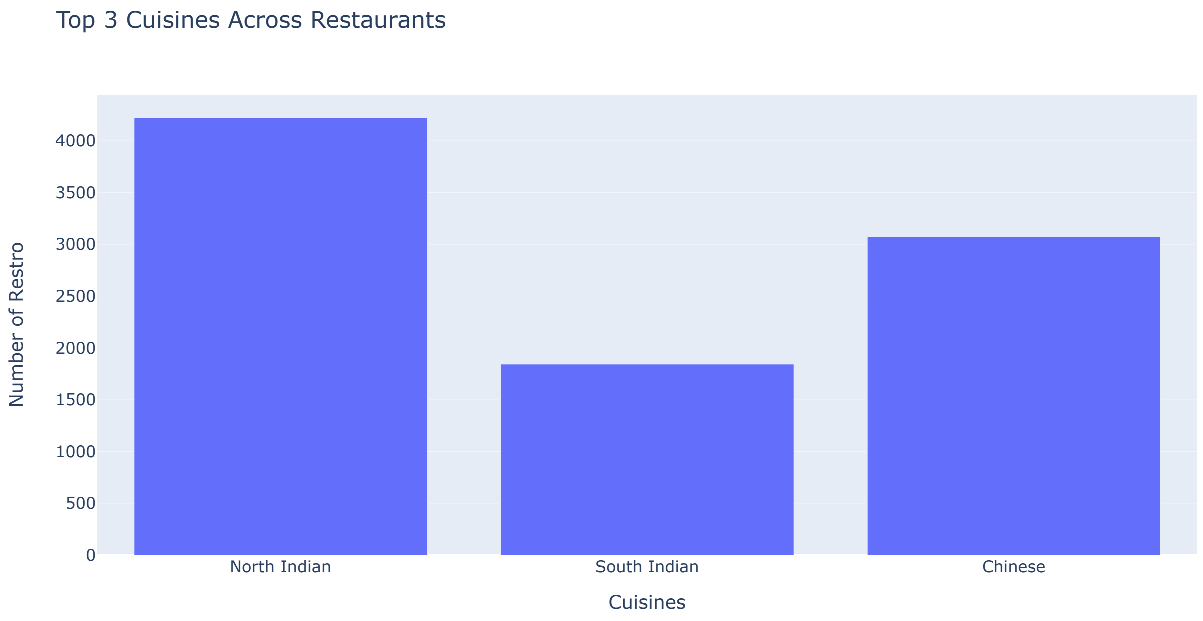
```
funneldata = data.groupby("location")["name"].count().sort_values(ascending = False).head(10)
fig = px.funnel(funneldata,title="Top 10 Cities with Most Restraunts",
                labels={"location":"City"})
fig.update_layout(showlegend=False)
```



5) Top 3 Cuisines Across Restaurants

In [17]:

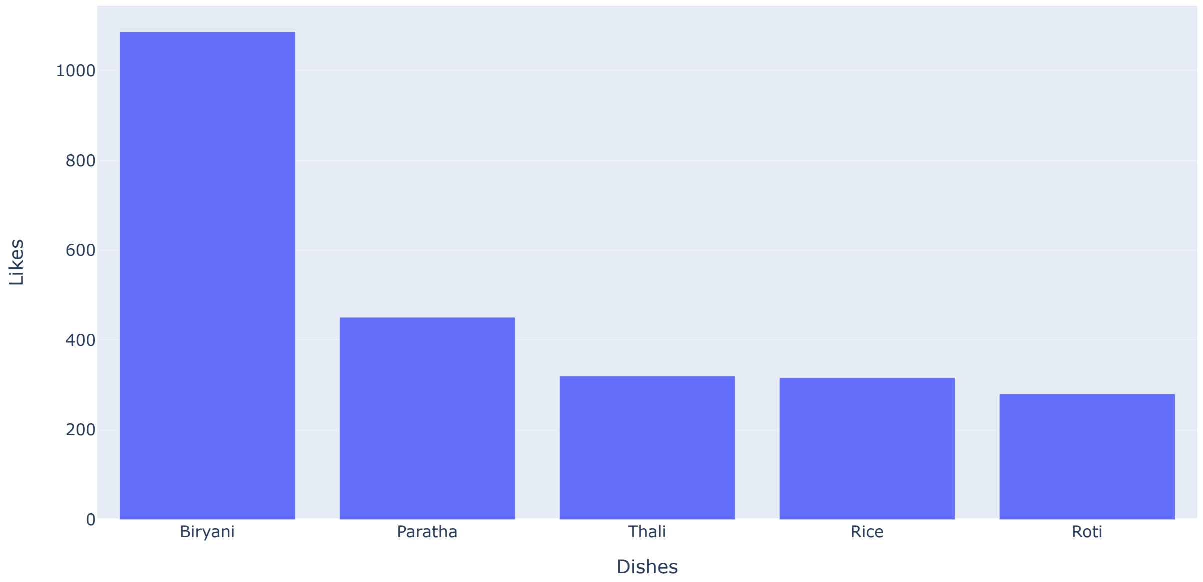
```
counta=countb=countc=0
for i in data["cuisines"]:
    a = "North Indian"
    b = "South Indian"
    c = "Chinese"
    if("North Indian" in str(i)):
        counta = counta+1
    if("South Indian" in str(i)):
        countb = countb+1
    if("Chinese" in str(i)):
        countc = countc+1
cuisineslst1 = ["North Indian","South Indian","Chinese"]
cuisineslst2 = [counta,countb,countc]

px.bar(x=cuisineslst1,
       y=cuisineslst2,
       labels={"x":"Cuisines","y":"Number of Restro"},
       title="Top 3 Cuisines Across Restaurants")
```



6) Top 5 Main-Course Liked Indian Dishes

In [18]:

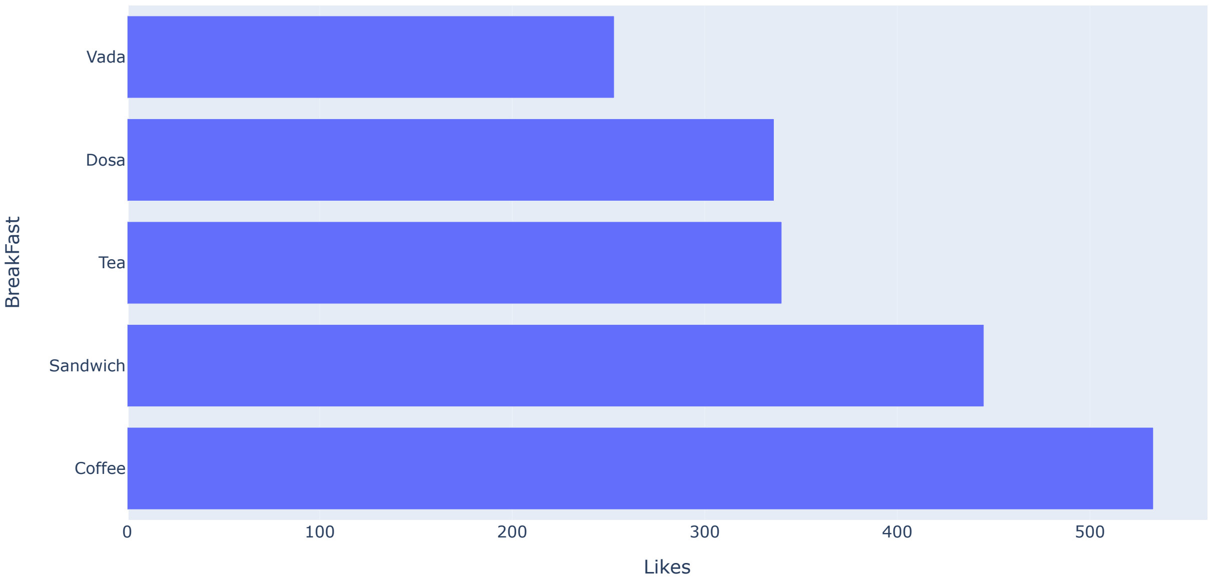
```
counta=countb=countc=countd=counte=0
for i in data["dish_liked"]:
    if("Biryani" in str(i)):
        counta = counta+1
    if("Paratha" in str(i)):
        countb = countb+1
    if("Thali" in str(i)):
        countc = countc+1
    if("Rice" in str(i)):
        countd = countd+1
    if("Roti" in str(i)):
        counte = counte+1
dishlst1 = ["Biryani","Paratha","Thali","Rice","Roti"]
dishlst2 = [counta,countb,countc,countd,counte]

px.bar(x=dishlst1,y=dishlst2,labels={"x":"Dishes","y":"Likes"})
```



7) Top 5 Liked BreakFast

In [19]:

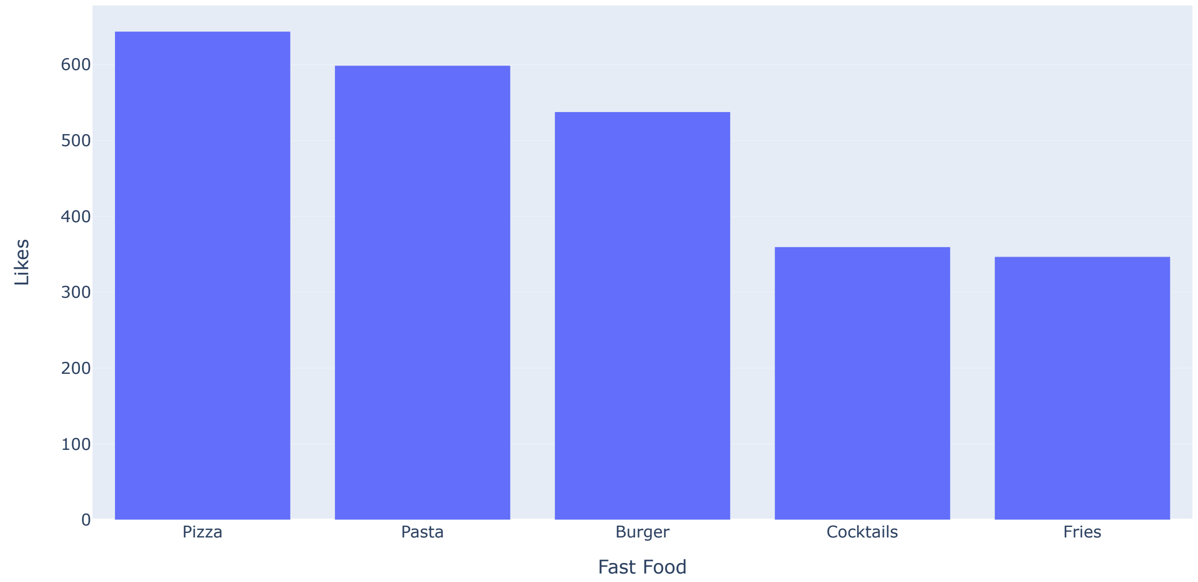
```
counta=countb=countc=countd=counte=0
for i in data["dish_liked"]:
    if("Coffee" in str(i)):
        counta = counta+1
    if("Sandwich" in str(i)):
        countb = countb+1
    if("Tea" in str(i)):
        countc = countc+1
    if("Dosa" in str(i)):
        countd = countd+1
    if("Vada" in str(i)):
        counte = counte+1
dishlst1 = ["Coffee","Sandwich","Tea","Dosa","Vada"]
dishlst2 = [counta,countb,countc,countd,counte]

px.bar(x=dishlst2,y=dishlst1,orientation="h",labels={"x":"Likes","y":"BreakFast"})
```



8) Top 5 Liked Fast Food

In [20]:

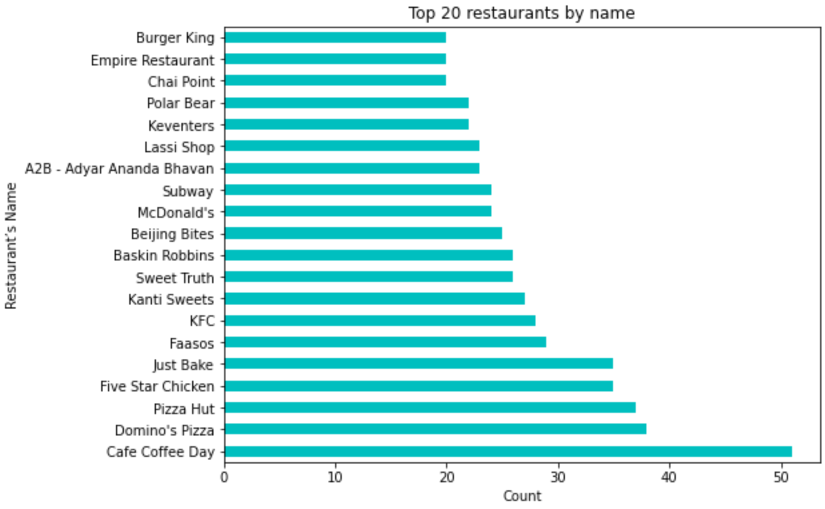
```
counta=countb=countc=countd=counte=0
for i in data["dish_liked"]:
    if("Pizza" in str(i)):
        counta = counta+1
    if("Pasta" in str(i)):
        countb = countb+1
    if("Burger" in str(i)):
        countc = countc+1
    if("Cocktails" in str(i)):
        countd = countd+1
    if("Fries" in str(i)):
        counte = counte+1
dishlst1 = ["Pizza","Pasta","Burger","Cocktails","Fries"]
dishlst2 = [counta,countb,countc,countd,counte]

px.bar(x=dishlst1,y=dishlst2,labels={"x":"Fast Food","y":"Likes"})
```



9) Top 20 restaurants by name

In [21]:

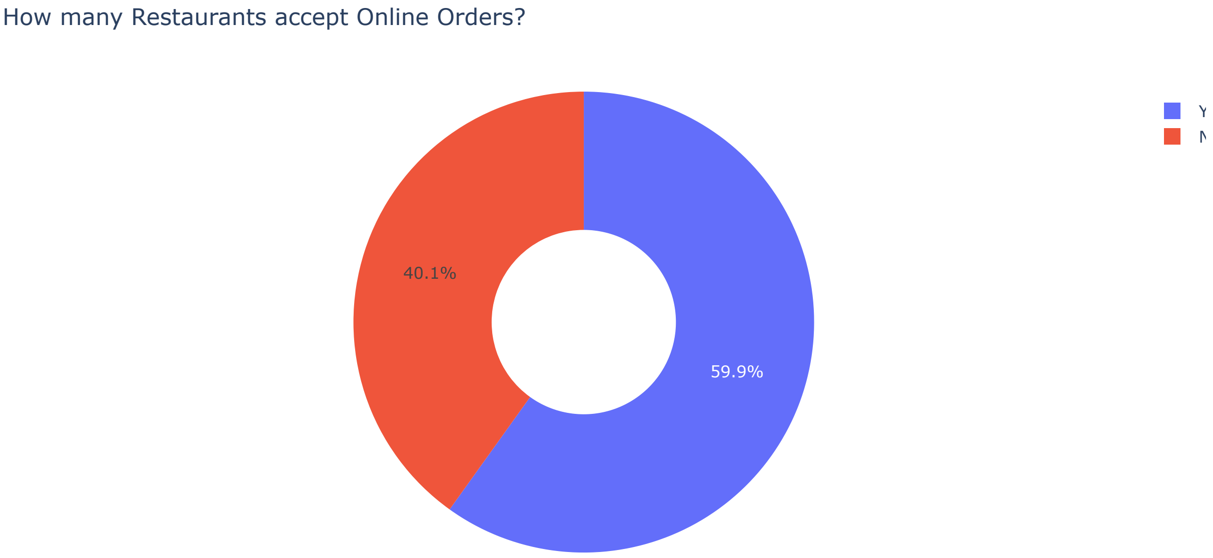
```
top20name=data.name.value_counts().head(20)
plt.figure(figsize=(8,6))
ax=top20name.plot(kind="barh",color="c")
plt.title("Top 20 restaurants by name")
plt.ylabel("Restaurant’s Name")
plt.xlabel("Count")
plt.show()
```



10) Online Orders Counts

In [22]:

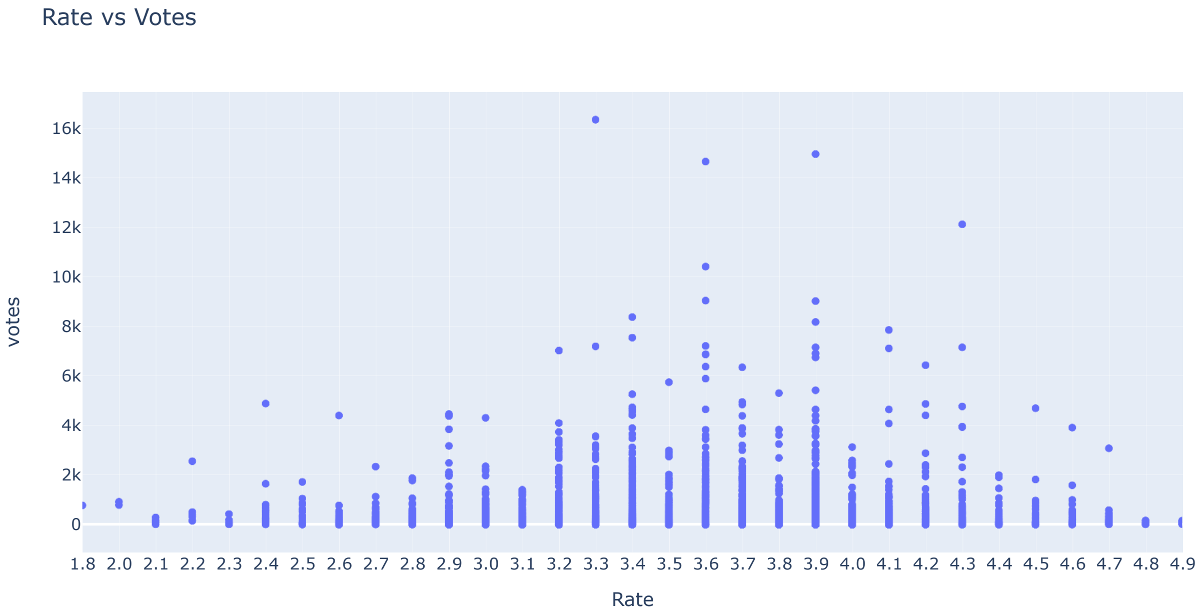
```
piedata = data.online_order.value_counts()
px.pie(piedata,values=piedata.values,
       title="How many Restaurants accept Online Orders?",
       names=piedata.index,
       hover_name=piedata.index,hole = 0.4)
# YES has the most counts
```



11) Rate vs Votes

In [23]:

```
px.scatter(data,
           x=data.rate.sort_values(),
           y=data.votes,title="Rate vs Votes",range_x=[0,30],labels={"x":"Rate"})
# We can conclude through this most votes in the range of 3 to 4.5
# also rate and votes are not diretly propotional to each other.
```



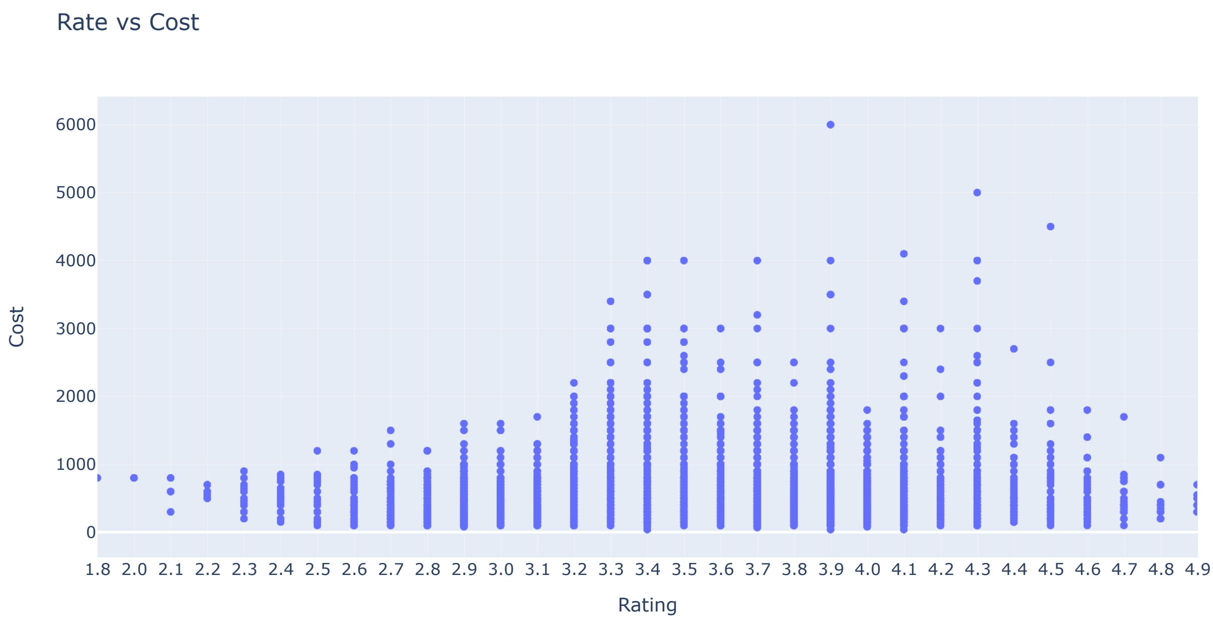
In [ ]:

```

```

12) Rate vs Cost

In [24]:

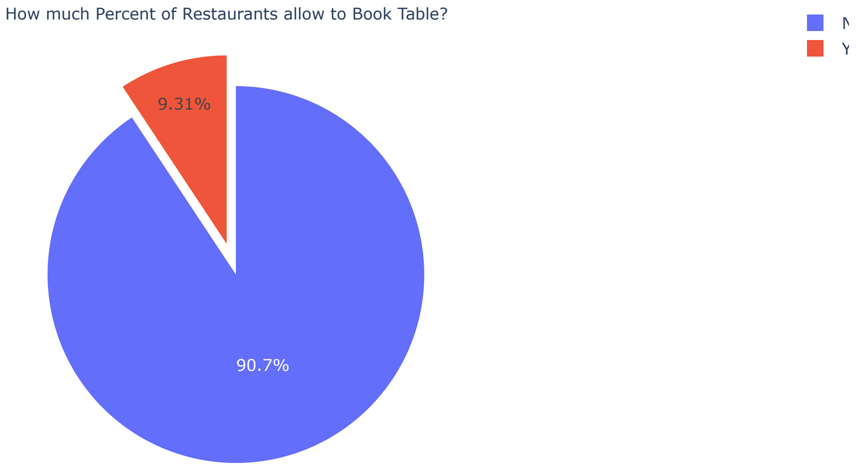
```
px.scatter(data,
           x=data.rate.sort_values(),
           y=data.cost,title="Rate vs Cost",range_x=[0,30],
         labels={"cost":"Cost","x":"Rating"})
# Most customers prefer mid range cost restro
# More the cost is Higher is the ratings
```



13) Book Table Counts

In [25]:

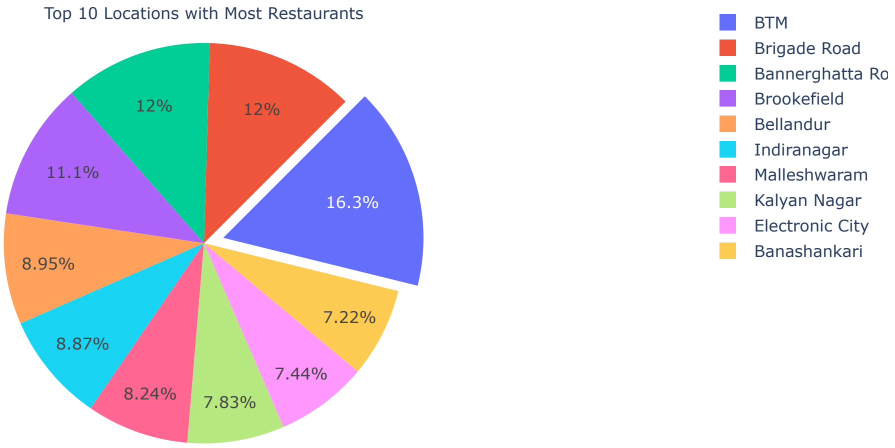
```
booktable = data.book_table.value_counts()
fig = go.Figure(data=[go.Pie(labels=booktable.index,
                             values=booktable.values,
                             pull=[0.17, 0],
                             title="How much Percent of Restaurants allow to Book Table?")])
fig.show()
# Less than even 10 percent
```



14) Top 10 Locations with Most Restaurants

In [26]:

```
piedata = data.location.value_counts()[:10]
fig = go.Figure(data=[go.Pie(labels=piedata.index,
                             values=piedata.values,
                             pull=[0.1,0,0,0,0,0,0,0,0,0],
                             title="Top 10 Locations with Most Restaurants",rotation=45)])
fig.show()
print("Most Restaurants are in",data.location.describe().top)
print("There are a total of",data.location.describe().freq,"Restaurants")
```

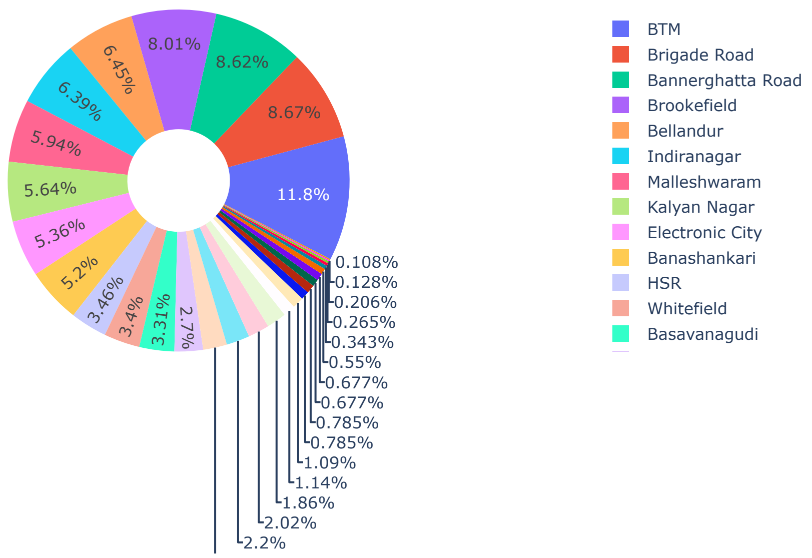


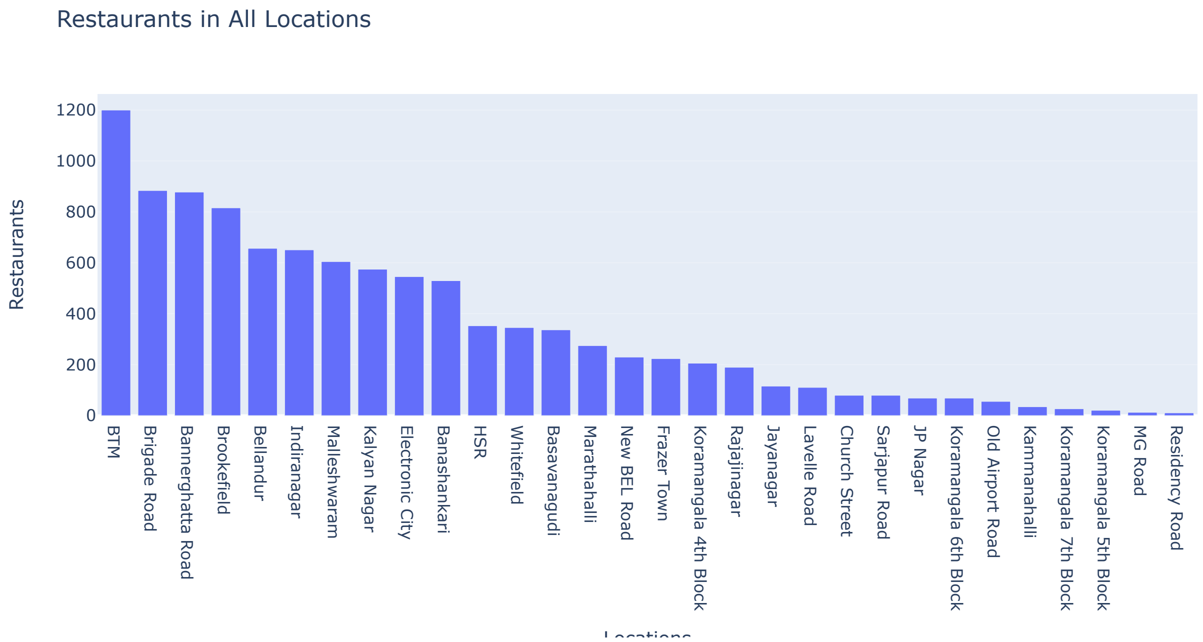
```
Most Restaurants are in BTM
There are a total of 1200 Restaurants
```

15) Restaurants in All Locations

In [27]:

```
piedata = data.location.value_counts()
fig = go.Figure(data=[go.Pie(labels=piedata.index,
                             values=piedata.values,
                             pull=[0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0],
                             rotation=75,hole = 0.3)])
fig.show()

fig1 = px.bar(piedata,title="Restaurants in All Locations",
              labels={"value":"Restaurants","index":"Locations"})
fig1.update_layout(showlegend=False)
fig1.show()
```

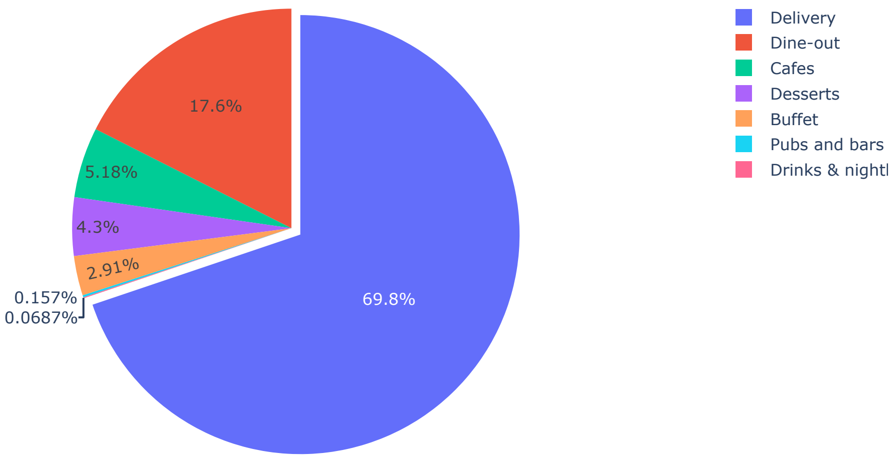




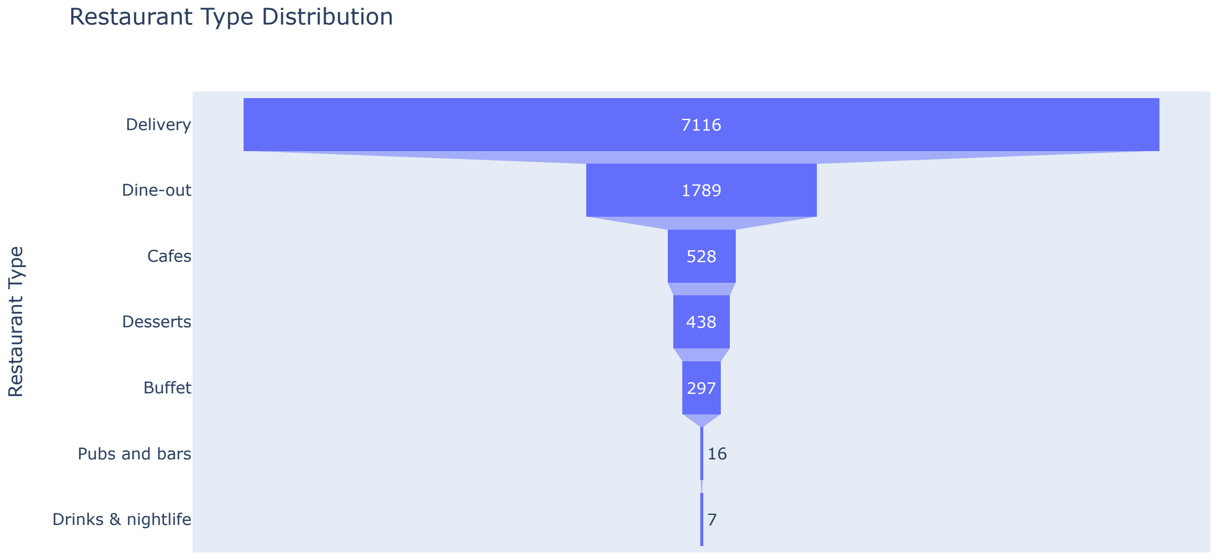
16) Restaurant Type Distribution

In [28]:

```
resttype = data.rest_type.value_counts()
fig = go.Figure(data=[go.Pie(labels=resttype.index,
                             values=resttype.values,
                             pull=[0.05,0,0,0,0,0,0])])
fig.show()
print("Most Restaurants are",data.rest_type.describe().top,"type")
print("There are a total of",data.rest_type.describe().freq,"Restaurants in this Category")

fig1 = px.funnel(resttype,title="Restaurant Type Distribution",
              labels={"index":"Restaurant Type"})
fig1.update_layout(showlegend=False)
fig1.show()
```



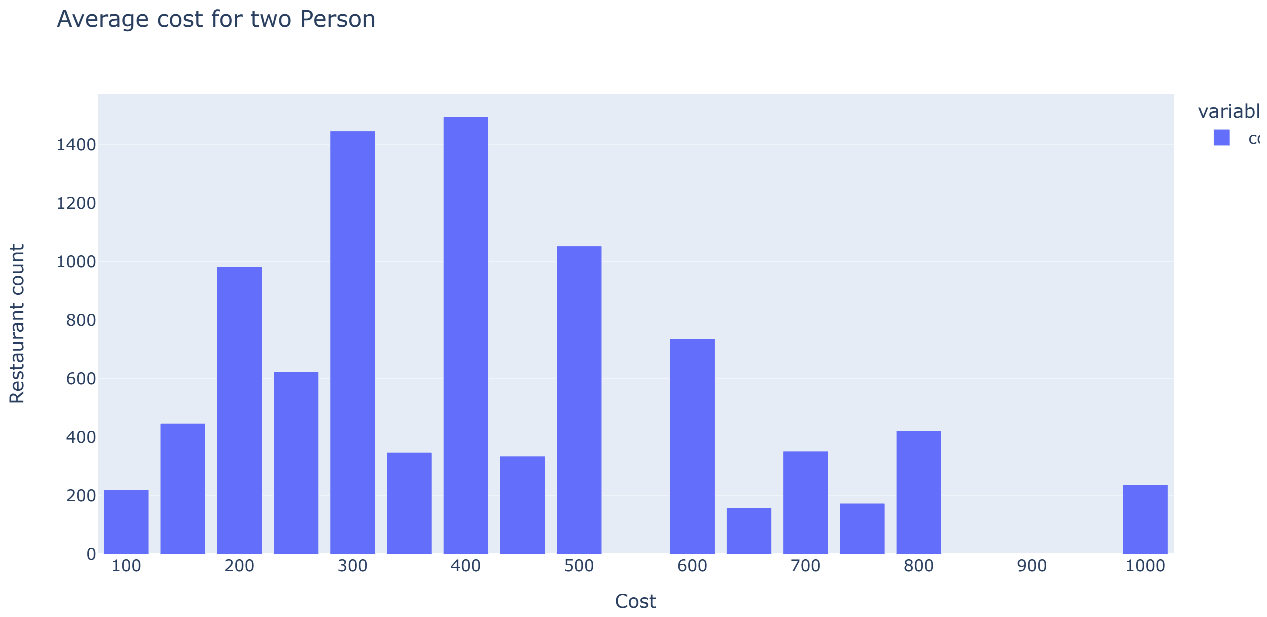
```
Most Restaurants are Delivery type
There are a total of 7116 Restaurants in this Category
```



17) Average Cost for 2 Persons

In [29]:

```python
costdata = data.cost.value_counts().head(15)
fig = px.bar(costdata,title="Average cost for two Person",
             labels={"index":"Cost","value":"Restaurant count"})
fig.show()
print("The Average Cost for 2 Person at a Restaurant is",data.cost.median())
```

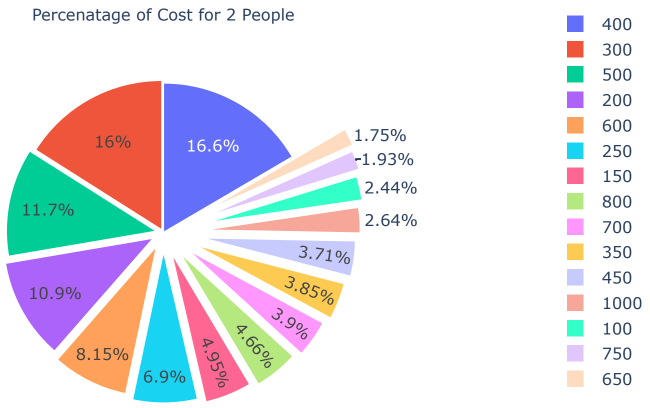


```
The Average Cost for 2 Person at a Restaurant is 400.0
```

18) Percenatage of Cost for 2 People

In [30]:

```python
fig = go.Figure(data=[go.Pie(labels=costdata.index,
                             values=costdata.values,
                       pull=[0.01,0.03,0.06,0.09,0.12,0.15,0.18,0.21,0.24,0.27,0.30,0.33,0.36,0.39,0.41],
                             title="Percenatage of Cost for 2 People")])
fig.show()
print("Average cost for 2 is around 300-400 for 32.6% restaurants")
```

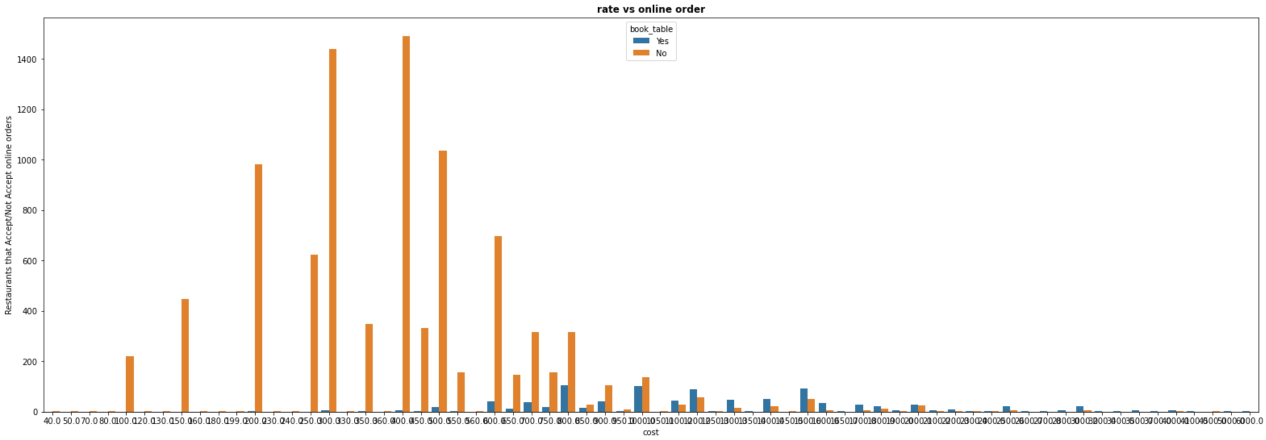


```
Average cost for 2 is around 300-400 for 32.6% restaurants
```

19) Rate vs Online order

In [31]:

```
plt.subplots(figsize=(27,9))
sns.countplot(x=data.cost.sort_values(),
              data=data,
              hue='book_table')
plt.ylabel("Restaurants that Accept/Not Accept online orders")
plt.title("rate vs online order",weight = 'bold')
plt.show()
```



In [ ]:

```

```

In [ ]:

```

```