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#importing packages
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt
import seaborn as sns
import plotly.express as px
import warnings
warnings.filterwarnings(action = 'ignore')
#importing dataset
df_Swiggy = pd.read_csv('Swiggy.csv', sep = ',')
df_Swiggy
#data processing
df_Swiggy.columns

df_Swiggy.isnull().sum()

df_Swiggy.describe()

df_Swiggy.info()
df_Swiggy['Rating'].unique()
['Rating'] = df_Swiggy['Rating'].str.replace('--', '0').astype(float)
df_Swiggy['Rating'].unique()
#cost for two
df_Swiggy['Cost_for_Two'].unique()
def data_processing(string):
  cost = string.split(' ')[1]
  return cost
df_Swiggy['Cost_for_Two'] = df_Swiggy['Cost_for_Two'].apply(data_processing)

df_Swiggy['Cost_for_Two'] = df_Swiggy['Cost_for_Two'].astype('int')

df_Swiggy['Cost_for_Two'].unique()
df_Swiggy.rename(columns = {'Cost_for_Two' : 'Cost_for_Two (₹)'}, inplace = True)
df_Swiggy
#Distribution of 'Ratings'
df_valid_Ratings = df_Swiggy[df_Swiggy['Rating'] > 0]
df_valid_Ratings
#Analyse "Approx Cost of 2 People" vs "Rating". Find out the relationship between them
df_Highest_Rated_Restaurants = df_Swiggy[df_Swiggy['Rating'] >= 4.0]
df_Highest_Rated_Restaurants
#Highest Rated Restaurants
df_Highest_Rated_Restaurants = df_Highest_Rated_Restaurants.loc[:, ['Shop_Name',
'Rating','Cost_for_Two (₹)']]
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df_Highest_Rated_Restaurants = df_Highest_Rated_Restaurants.groupby(['Shop_Name',
'Rating'])['Cost_for_Two (₹)'].agg('mean')

df_Highest_Rated_Restaurants = df_Highest_Rated_Restaurants.reset_index()

df_Highest_Rated_Restaurants
#Plotly Plot
fig = px.scatter(x = df_Highest_Rated_Restaurants['Cost_for_Two (₹)'],
                 y = df_Highest_Rated_Restaurants['Rating'],
                 color = df_Highest_Rated_Restaurants['Rating'],
                 size = df_Highest_Rated_Restaurants['Cost_for_Two (₹)'],
                 labels = {'x' : 'Approx. Cost_for_Two (₹)', 'y' : 'Rating', 'color' : 'Rating_Indicator'})
fig.update_layout(template = 'plotly_dark', title = "Analyse 'Approx Cost of 2 People' vs 'Rating'")
fig.show()
#Top 15 Expensive & Highest Rated Restaurants with Approx. Cost for 2 People
df_Expensive_Restaurants = df_Highest_Rated_Restaurants.sort_values(by = 'Cost_for_Two
(₹)', ascending = False)

df_Expensive_Restaurants

#Plotly Plot
fig = px.bar(data_frame = df_Expensive_Restaurants,
             x = df_Expensive_Restaurants['Shop_Name'][0:30],
             y = df_Expensive_Restaurants['Cost_for_Two (₹)'][0:30],
             color = df_Expensive_Restaurants['Rating'][0:30],
            labels = {'x' : 'Restaurant_Name', 'y' : 'Approx. Cost_for_Two (₹)', 'color' : 'Rating'})
fig.update_layout(template = 'plotly_dark',
                  title = 'Top 15 Expensive & Highest Rated Restaurants with Approx. Cost for 2
People')
fig.show()
```