Level 1 (task1)- : Determine the top three most common cuisines in the dataset ,calculate the percentage of restuarents that serve each of the top cuisines

```
import pandas as pd
data = {
    'restaurant_name': ['Black Horse', 'Curry Nights', 'Bobina', 'The Terai', 'Sharda Dinings'],
    'cuisine': ['Italian', 'Mexican', 'Italian', 'Chinese', 'Mexican']
}
df = pd.DataFrame(data)
cuisine_counts = df['cuisine'].value_counts()
top_cuisines = cuisine_counts.head(3)
total_restaurants = len(df)
top_cuisines_percentage = (top_cuisines / total_restaurants) * 100
print("Top 3 Cuisines and Their Percentages:")
for cuisine, count in top_cuisines.items():
    percentage = top_cuisines_percentage[cuisine]
    print(f"{cuisine}: {count} restaurants ({percentage:.2f}%)")
```

```
Top 3 Cuisines and Their Percentages:
Italian: 2 restaurants (40.00%)
Mexican: 2 restaurants (40.00%)
Chinese: 1 restaurants (20.00%)
```

Level 1 (Task2)-:Identify the city with the highest number of restaurants in the dataset

Calculate the average rating for restaurants in each city

Determine the city with highest average rating

```
import pandas as pd
data = {
    'restaurant_name': ['Restaurant1', 'Restaurant2', 'Restaurant3', 'Restaurant4', 'Restaurant5', 'Restaurant6'],
    'city': ['Gorakhpur', 'Luckhnow', 'New Delhi', 'Kanpur', 'Agra', 'Mumbai'],
    'rating': [4.8, 4.2, 3.8, 4.7, 4.1, 4.3]
}
df = pd.DataFrame(data)
city_counts = df['city'].value_counts()
city_with_most_restaurants = city_counts.idxmax()
most_restaurants_count = city_counts.max()
city_avg_ratings = df.groupby('city')['rating'].mean()
city_with_highest_avg_rating = city_avg_ratings.idxmax()
highest_avg_rating = city_avg_ratings.max()
print(f"City with the highest number of restaurants: {city_with_most_restaurants} ({most_restaurants_count} restaurants)")
print("\nAverage ratings for each city:")
print(city_avg_ratings)

print(f"\nCity with the highest average rating: {city_with_highest_avg_rating} (Average Rating: {highest_avg_rating:.2f})")
```

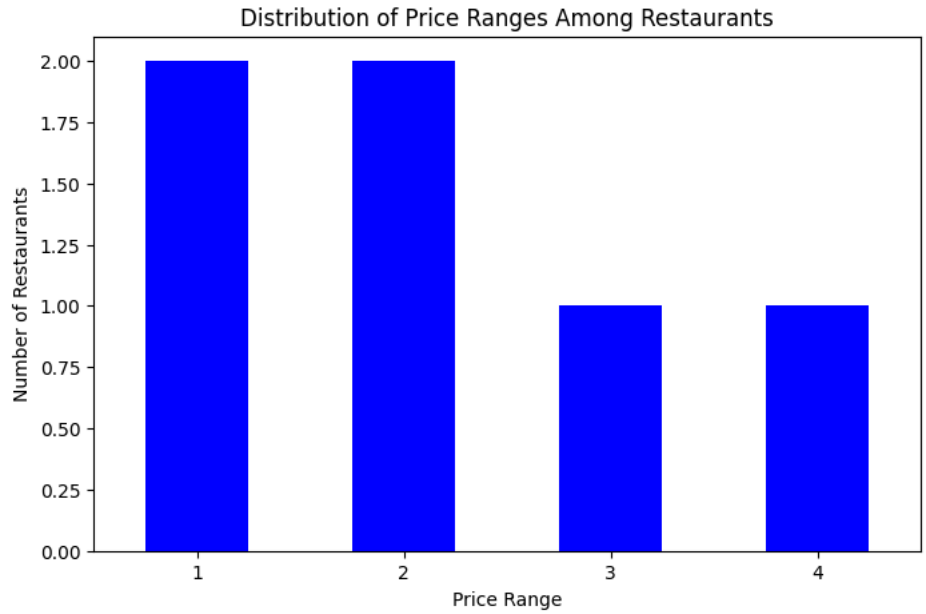
```
City with the highest number of restaurants: Gorakhpur (1 restaurants)

Average ratings for each city:
city
Agra         4.1
Gorakhpur    4.8
Kanpur       4.7
Luckhnow     4.2
Mumbai       4.3
New Delhi    3.8
Name: rating, dtype: float64

City with the highest average rating: Gorakhpur (Average Rating: 4.80)
```

Level 3 (Task3)-:Create a histogram or bar chart to visualize the distribution of price ranges among the restaurants

Calculate the percentage of restaurants in each price range category

```
import pandas as pd
import matplotlib.pyplot as plt
data = {
    'restaurant_name': ['Restaurant1', 'Restaurant2', 'Restaurant3', 'Restaurant4', 'Restaurant5', 'Restaurant6'],
    'price_range': [1, 2, 3, 2, 4, 1]
}
df = pd.DataFrame(data)
price_range_counts = df['price_range'].value_counts().sort_index()
plt.figure(figsize=(8, 5))
price_range_counts.plot(kind='bar', color='Red')
plt.title('Distribution of Price Ranges Among Restaurants')
```

```
plt.xlabel('Price Range')
plt.ylabel('Number of Restaurants')
plt.xticks(rotation=0)
plt.show()
total_restaurants = len(df)
price_range_percentage = (price_range_counts / total_restaurants) * 100
print("Percentage of restaurants in each price range:")
for price_range, percentage in price_range_percentage.items():
    print(f"Price Range {price_range}: {percentage:.2f}%")
```




```
Percentage of restaurants in each price range:
Price Range 1: 33.33%
Price Range 2: 33.33%
Price Range 3: 16.67%
Price Range 4: 16.67%
```

Level 1 (Task4)-: Determine the percentage of restaurants that offer the online delivery

Campare the average ratings of restaurants with and without online delivery

```
import pandas as pd
data = {
    'restaurant_name': ['Restaurant1', 'Restaurant2', 'Restaurant3', 'Restaurant4', 'Restaurant5', 'Restaurant6'],
    'online_delivery': [True, False, True, True, False, False],
    'rating': [4.5, 4.2, 3.8, 4.7, 4.1, 3.9]
}
df = pd.DataFrame(data)
total_restaurants = len(df)
restaurants_with_delivery = df['online_delivery'].sum()
percentage_with_delivery = (restaurants_with_delivery / total_restaurants)
avg_rating_with_delivery = df[df['online_delivery'] == True]['rating'].mean()
avg_rating_without_delivery = df[df['online_delivery'] == False]['rating'].mean()
print(f"Percentage of restaurants that offer online delivery: {percentage_with_delivery:.2f}%")
print(f"Average rating for restaurants with online delivery: {avg_rating_with_delivery:.2f}")
print(f"Average rating for restaurants without online delivery: {avg_rating_without_delivery:.2f}")
```

```
Percentage of restaurants that offer online delivery: 0.50%
Average rating for restaurants with online delivery: 4.33
Average rating for restaurants without online delivery: 4.07
```