

ASSIGNMENT 2

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Code:

```
import pandas as pd
csv_load = 'House Price India.csv'
df = pd.read_csv(csv_load)
df.head()

!pip install seaborn matplotlib
import seaborn as sns
import matplotlib.pyplot as plt

# Histogram of Price
plt.figure(figsize=(10, 6))
sns.histplot(df['Price'], bins=30, kde=True)
plt.xlabel('Price')
plt.ylabel('Frequency')
plt.title('Histogram of Price')
plt.show()

# Scatter Plot between Number of Bedrooms and Price
plt.figure(figsize=(10, 6))
sns.scatterplot(data=df, x='number of bedrooms', y='Price')
plt.xlabel('Number of Bedrooms')
plt.ylabel('Price')
plt.title('Scatter Plot: Number of Bedrooms vs. Price')
plt.show()

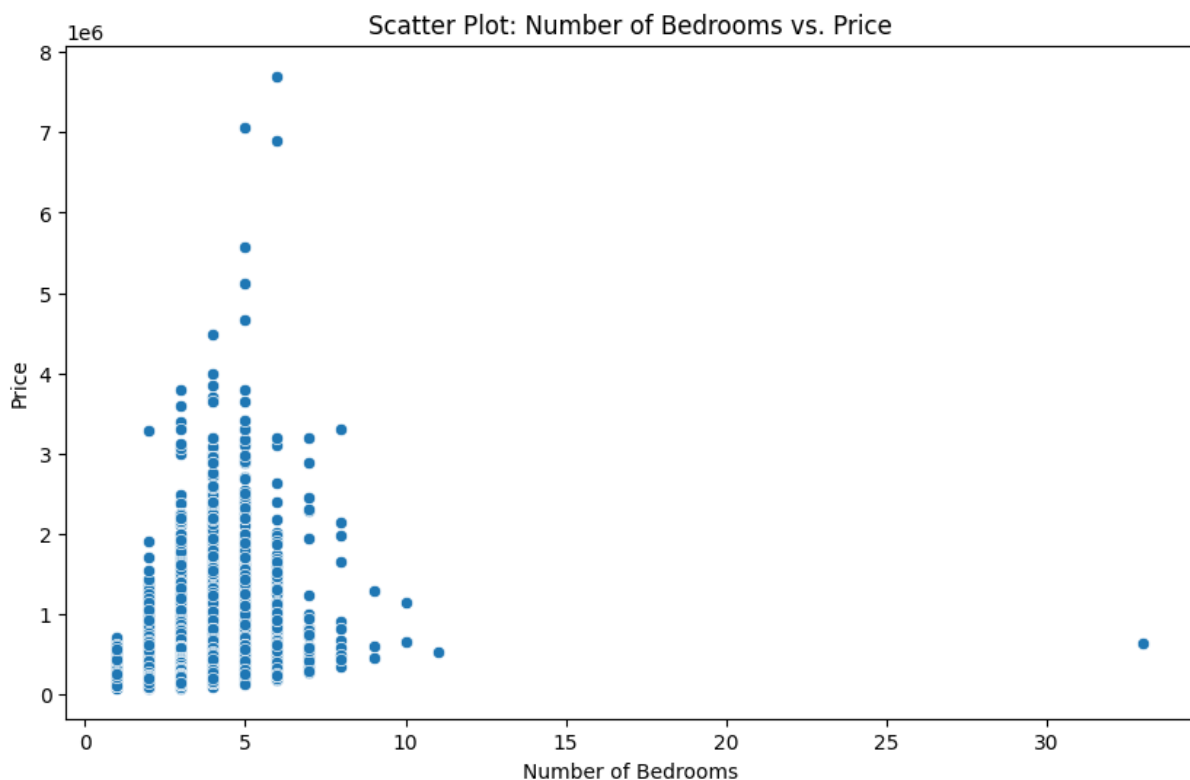
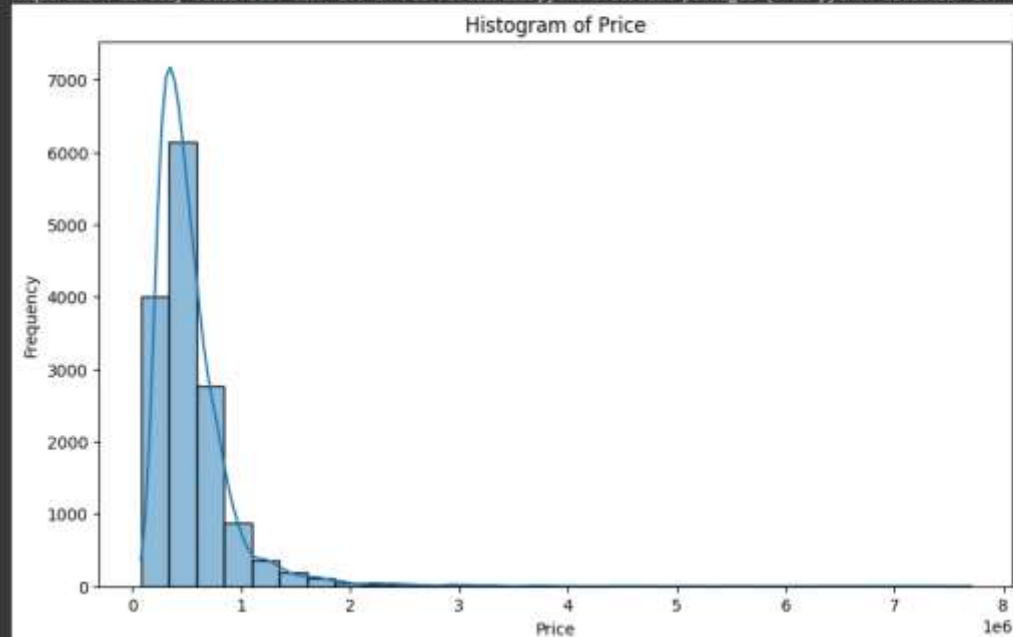
# Correlation Matrix
correlation_matrix = df.corr()
plt.figure(figsize=(12, 8))
sns.heatmap(correlation_matrix, annot=True, cmap='coolwarm', fmt='.2f',
linewidths=.5)
plt.title('Correlation Matrix')
plt.show()

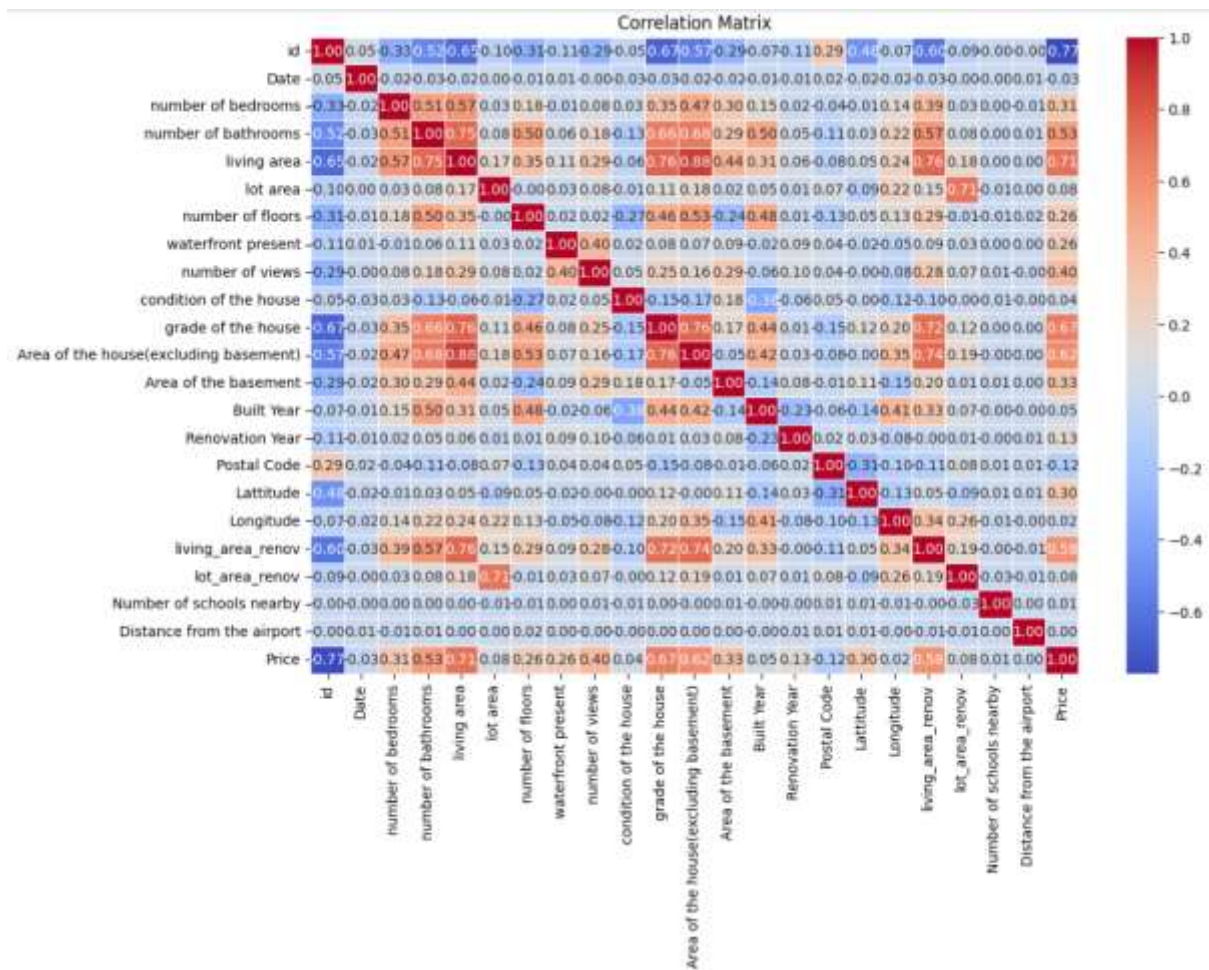
descriptive_stats = df.describe()
descriptive_stats

missing_values = df.isnull().sum()
# Interpolation (e.g., for time series data)
df['Price'].interpolate(method='linear', inplace=True)
missing_values_after_handling = df.isnull().sum()
print(df.head())
```

Output:

```
Requirement already satisfied: seaborn in /usr/local/lib/python3.10/dist-packages (0.12.2)
Requirement already satisfied: matplotlib in /usr/local/lib/python3.10/dist-packages (3.7.1)
Requirement already satisfied: numpy<1.24.0,>=1.17 in /usr/local/lib/python3.10/dist-packages (from seaborn) (1.23.5)
Requirement already satisfied: pandas>=0.25 in /usr/local/lib/python3.10/dist-packages (from seaborn) (1.5.3)
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.1.0)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (0.11.0)
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (4.42.1)
Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.4.4)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (23.1)
Requirement already satisfied: pillow>=6.2.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (9.4.0)
Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (3.1.1)
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-packages (from pandas>=0.25->seaborn) (2023.3)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist-packages (from python-dateutil>=2.7->matplotlib) (1.16.0)
```





| | id | Date | number of bedrooms | number of bathrooms | living area | \ |
|---|------------|-------|--------------------|---------------------|-------------|---|
| 0 | 6762810145 | 42491 | 5 | 2.50 | 3650 | |
| 1 | 6762810635 | 42491 | 4 | 2.50 | 2920 | |
| 2 | 6762810998 | 42491 | 5 | 2.75 | 2910 | |
| 3 | 6762812605 | 42491 | 4 | 2.50 | 3310 | |
| 4 | 6762812919 | 42491 | 3 | 2.00 | 2710 | |

| | lot area | number of floors | waterfront present | number of views | \ |
|---|----------|------------------|--------------------|-----------------|---|
| 0 | 9050 | 2.0 | 0 | 4 | |
| 1 | 4000 | 1.5 | 0 | 0 | |
| 2 | 9480 | 1.5 | 0 | 0 | |
| 3 | 42998 | 2.0 | 0 | 0 | |
| 4 | 4500 | 1.5 | 0 | 0 | |

| | condition of the house | ... | Built Year | Renovation Year | Postal Code | \ |
|---|------------------------|-----|------------|-----------------|-------------|---|
| 0 | 5 | ... | 1921 | 0 | 122003 | |
| 1 | 5 | ... | 1909 | 0 | 122004 | |
| 2 | 3 | ... | 1939 | 0 | 122004 | |
| 3 | 3 | ... | 2001 | 0 | 122005 | |
| 4 | 4 | ... | 1929 | 0 | 122006 | |

| | Latitude | Longitude | living_area_renov | lot_area_renov | \ |
|---|----------|-----------|-------------------|----------------|---|
| 0 | 52.8645 | -114.557 | 2880 | 5400 | |
| 1 | 52.8878 | -114.470 | 2470 | 4000 | |
| 2 | 52.8852 | -114.468 | 2940 | 6600 | |
| 3 | 52.9532 | -114.321 | 3350 | 42847 | |
| 4 | 52.9047 | -114.485 | 2060 | 4500 | |

| | Number of schools nearby | Distance from the airport | Price |
|---|--------------------------|---------------------------|---------|
| 0 | 2 | 58 | 2380000 |
| 1 | 2 | 51 | 1400000 |
| 2 | 1 | 53 | 1200000 |
| 3 | 3 | 76 | 838000 |
| 4 | 1 | 51 | 805000 |

[5 rows x 23 columns]