

```
In [17]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [18]: df=pd.read_csv("/Users/bob/Downloads/12_mobile_prices_2023.csv")
df.fillna(0,inplace=True)
df
```

Out[18]:

	Phone Name	Rating ?/5	Number of Ratings	RAM	ROM/Storage	Back/Rare Camera	Front Camera	Battery	Proces
0	POCO C50 (Royal Blue, 32 GB)	4.2	33,561	2 GB RAM	32 GB ROM	8MP Dual Camera	5MP Front Camera	5000 mAh	Media Helio Proces Upto GHz P
1	POCO M4 5G (Cool Blue, 64 GB)	4.2	77,128	4 GB RAM	64 GB ROM	50MP + 2MP	8MP Front Camera	5000 mAh	Media Dimer Proces
2	POCO C51 (Royal Blue, 64 GB)	4.3	15,175	4 GB RAM	64 GB ROM	8MP Dual Rear Camera	5MP Front Camera	5000 mAh	Helio Proces
3	POCO C55 (Cool Blue, 64 GB)	4.2	22,621	4 GB RAM	64 GB ROM	50MP Dual Rear Camera	5MP Front Camera	5000 mAh	Media Helio Proces
4	POCO C51 (Power Black, 64 GB)	4.3	15,175	4 GB RAM	64 GB ROM	8MP Dual Rear Camera	5MP Front Camera	5000 mAh	Helio Proces
...
1831	Infinix Note 7 (Forest Green, 64 GB)	4.3	25,582	4 GB RAM	64 GB ROM	48MP + 2MP + 2MP + AI Lens Camera	16MP Front Camera	5000 mAh	Media Helio Proces
1832	Infinix Note 7 (Bolivia Blue, 64 GB)	4.3	25,582	4 GB RAM	64 GB ROM	48MP + 2MP + 2MP + AI Lens Camera	16MP Front Camera	5000 mAh	Media Helio Proces
1833	Infinix Note 7 (Aether Black, 64 GB)	4.3	25,582	4 GB RAM	64 GB ROM	48MP + 2MP + 2MP + AI Lens Camera	16MP Front Camera	5000 mAh	Media Helio Proces

	Phone Name	Rating ?/5	Number of Ratings	RAM	ROM/Storage	Back/Rare Camera	Front Camera	Battery	Processor
1834	Infinix Zero 8i (Silver Diamond, 128 GB)	4.2	7,117	8 GB RAM	128 GB ROM	48MP + 8MP + 2MP + AI Lens Camera	16MP + 8MP Dual Front Camera	4500 mAh	MediaTek Helio G90 Processor
1835	Infinix S5 (Quetzal Cyan, 64 GB)	4.3	15,701	4 GB RAM	64 GB ROM	16MP + 5MP + 2MP + Low Light Sensor	32MP Front Camera	4000 mAh	Helio (MTK6) Processor

1836 rows x 11 columns

In [19]: df.head()

Out[19]:

	Phone Name	Rating ?/5	Number of Ratings	RAM	ROM/Storage	Back/Rare Camera	Front Camera	Battery	Processor
0	POCO C50 (Royal Blue, 32 GB)	4.2	33,561	2 GB RAM	32 GB ROM	8MP Dual Camera	5MP Front Camera	5000 mAh	Mediatek Helio A22 Processor, Upto 2.0 GHz Pro...
1	POCO M4 5G (Cool Blue, 64 GB)	4.2	77,128	4 GB RAM	64 GB ROM	50MP + 2MP	8MP Front Camera	5000 mAh	Mediatek Dimensity 700 Processor
2	POCO C51 (Royal Blue, 64 GB)	4.3	15,175	4 GB RAM	64 GB ROM	8MP Dual Rear Camera	5MP Front Camera	5000 mAh	Helio G36 Processor
3	POCO C55 (Cool Blue, 64 GB)	4.2	22,621	4 GB RAM	64 GB ROM	50MP Dual Rear Camera	5MP Front Camera	5000 mAh	Mediatek Helio G85 Processor
4	POCO C51 (Power Black, 64 GB)	4.3	15,175	4 GB RAM	64 GB ROM	8MP Dual Rear Camera	5MP Front Camera	5000 mAh	Helio G36 Processor

In [20]: `df.info()`

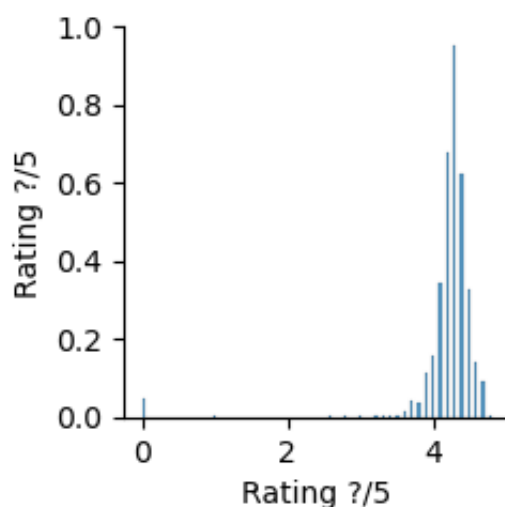
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1836 entries, 0 to 1835
Data columns (total 11 columns):
#   Column                Non-Null Count  Dtype
---  -
0   Phone Name            1836 non-null   object
1   Rating ?/5            1836 non-null   float64
2   Number of Ratings     1836 non-null   object
3   RAM                   1836 non-null   object
4   ROM/Storage           1836 non-null   object
5   Back/Rare Camera      1836 non-null   object
6   Front Camera          1836 non-null   object
7   Battery               1836 non-null   object
8   Processor              1836 non-null   object
9   Price in INR          1836 non-null   object
10  Date of Scraping      1836 non-null   object
dtypes: float64(1), object(10)
memory usage: 157.9+ KB
```

In [21]: `df.columns`

```
Out[21]: Index(['Phone Name', 'Rating ?/5', 'Number of Ratings', 'RAM', 'ROM/Storage',
               'Back/Rare Camera', 'Front Camera', 'Battery', 'Processor',
               'Price in INR', 'Date of Scraping'],
              dtype='object')
```

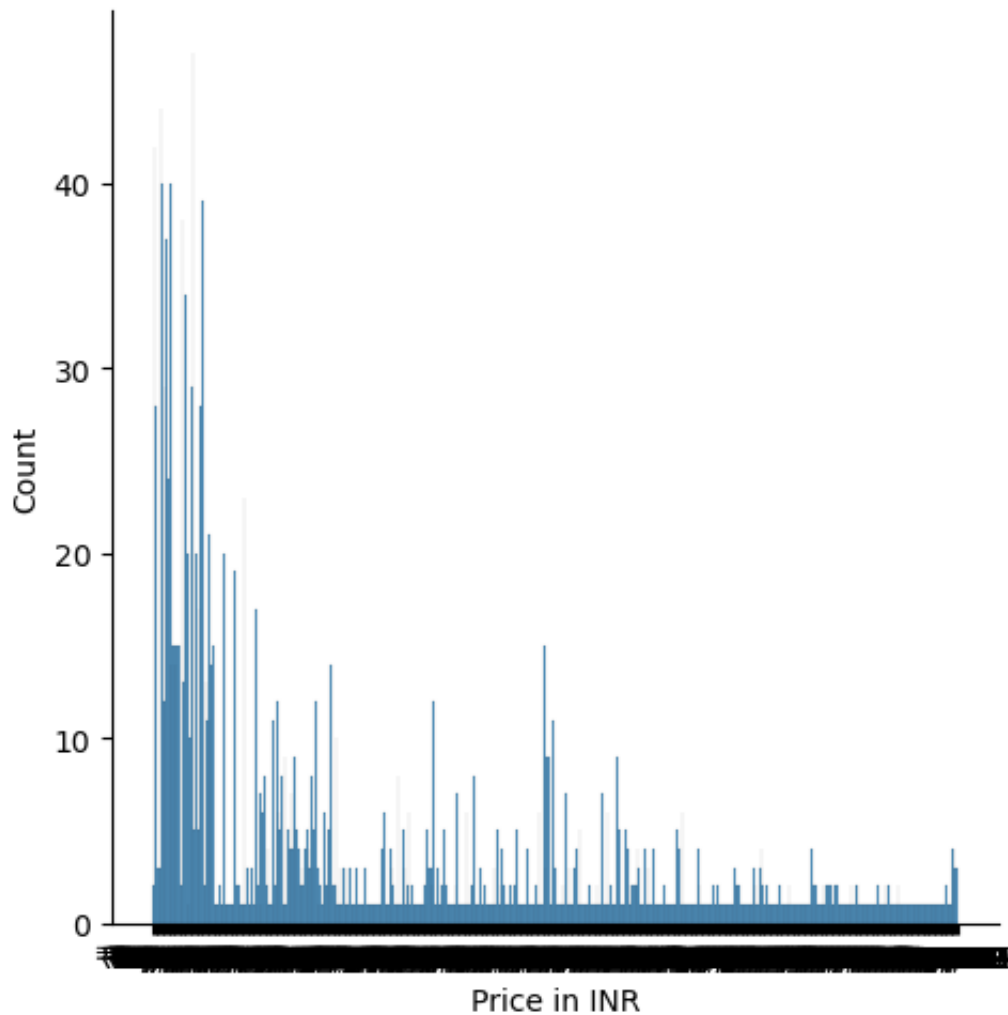
In [22]: `sns.pairplot(df)`

Out[22]: <seaborn.axisgrid.PairGrid at 0x7f8ecae7f7f0>



```
In [23]: sns.displot(df['Price in INR'])
```

```
Out[23]: <seaborn.axisgrid.FacetGrid at 0x7f8eca50e320>
```



```
In [24]: df1=df.drop(['Phone Name'],axis=1)
df1
df1=df1.drop(df1.index[1537:])
df1.isna().sum()
```

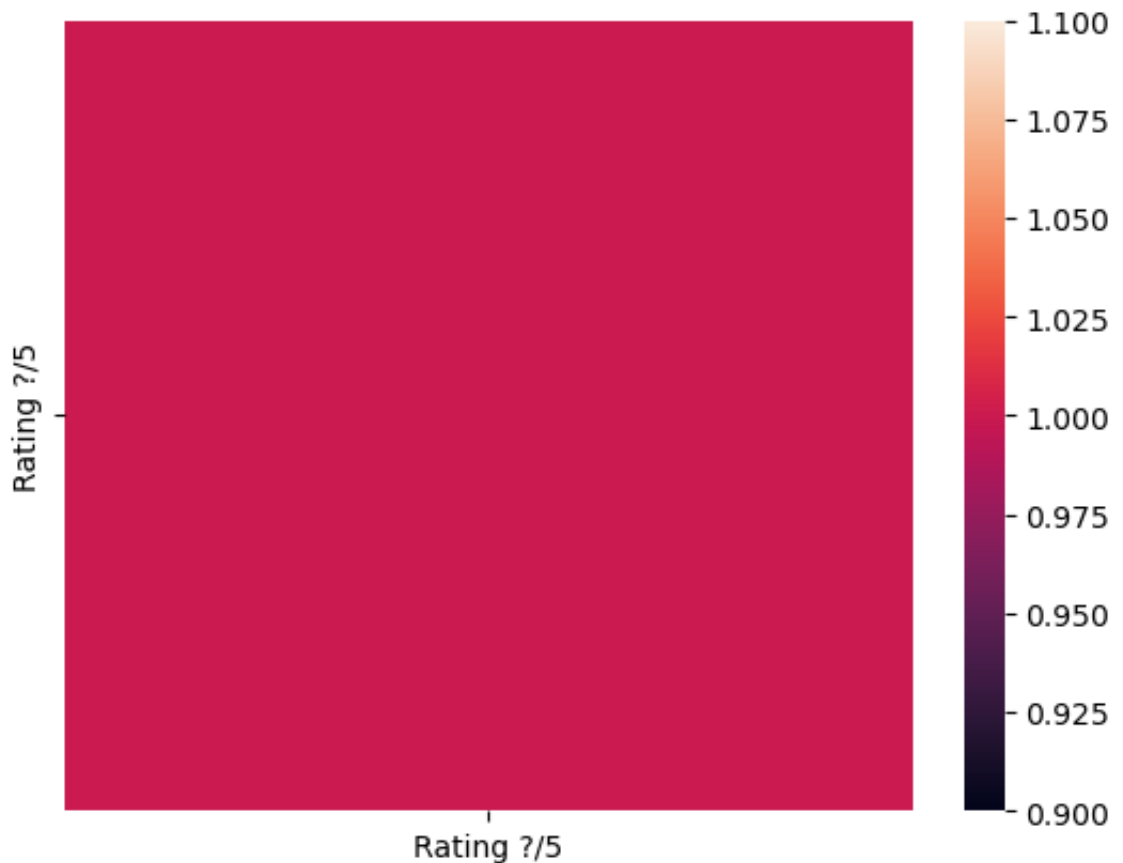
```
Out[24]: Rating ?/5          0
Number of Ratings          0
RAM                        0
ROM/Storage                0
Back/Rare Camera          0
Front Camera               0
Battery                    0
Processor                  0
Price in INR               0
Date of Scraping           0
dtype: int64
```

```
In [25]: sns.heatmap(df1.corr())
```

```
/var/folders/2n/rrl24lws3pb1nz8_t911srvm0000gn/T/ipykernel_17186/781785195.py:1: FutureWarning: The default value of numeric_only in DataFrame.corr is deprecated. In a future version, it will default to False. Select only valid columns or specify the value of numeric_only to silence this warning.
```

```
sns.heatmap(df1.corr())
```

```
Out [25]: <Axes: >
```



```
In [26]: from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
```

```
In [27]: df1.isna().sum()
```

```
Out[27]: Rating ?/5          0
Number of Ratings          0
RAM                        0
ROM/Storage                0
Back/Rare Camera          0
Front Camera              0
Battery                   0
Processor                 0
Price in INR              0
Date of Scraping          0
dtype: int64
```

```
In [41]: y=df1['Rating ?/5']
x=df1.drop(['RAM', 'Number of Ratings', 'ROM/Storage', 'Back/Rare Came
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.3)
print(x_train)
```

```
      Rating ?/5
1170         4.3
951          4.2
801          4.4
182          4.3
990          4.5
...         ...
92           4.5
313          4.4
20           4.1
696          4.2
520          4.2

[1075 rows x 1 columns]
```

```
In [42]: model=LinearRegression()
model.fit(x_train,y_train)
model.intercept_
```

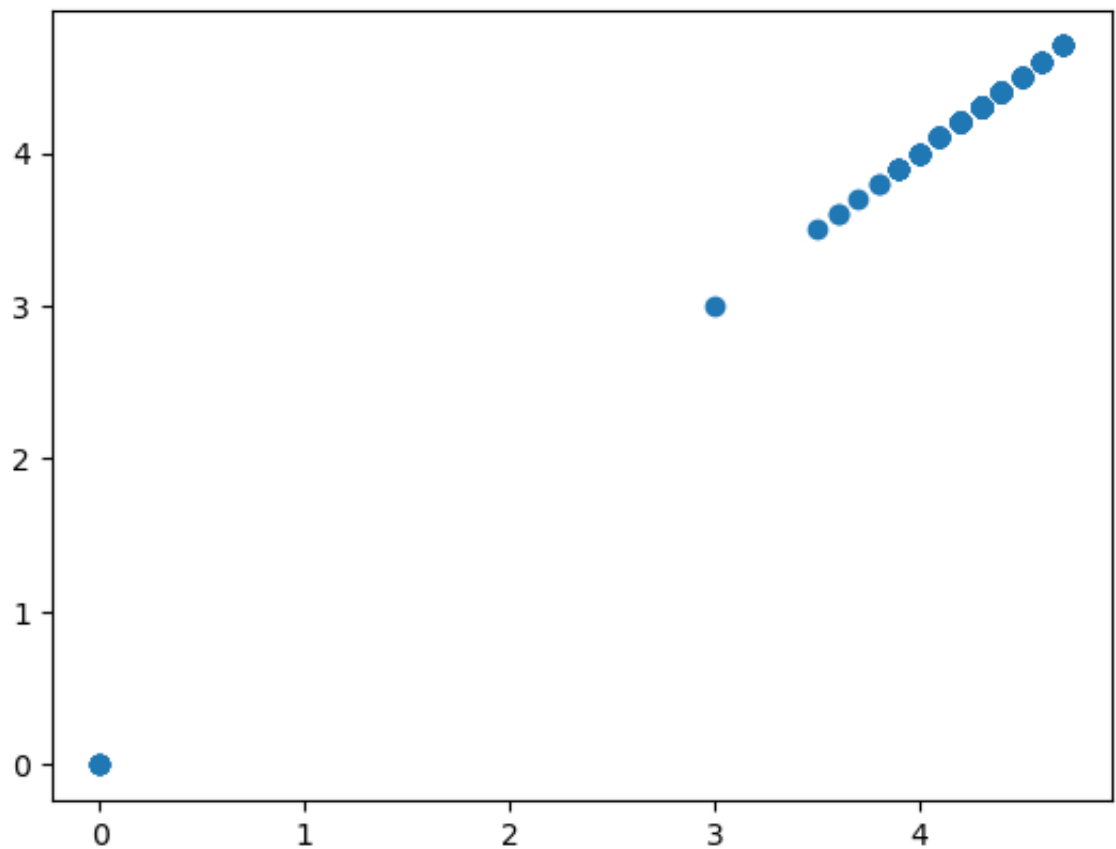
```
Out[42]: 8.881784197001252e-15
```

```
In [43]: model.coef_
```

```
Out[43]: array([1.])
```

```
In [44]: prediction=model.predict(x_test)  
plt.scatter(y_test,prediction)
```

Out [44]: <matplotlib.collections.PathCollection at 0x7f8ef4b37790>



```
In [45]: model.score(x_test,y_test)
```

Out [45]: 1.0

```
In [ ]:
```