```
import warnings
warnings.filterwarnings("ignore")
```

```
# Import libraries
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
```

```
# Import dataset
re=pd.read_csv("realest.csv")
```

```
re.head()
```

	Price	Bedroom	Space	Room	Lot	Tax	Bathroom	Garage	Condition
0	53.0	2.0	967.0	5.0	39.0	652.0	1.5	0.0	0.0
1	55.0	2.0	815.0	5.0	33.0	1000.0	1.0	2.0	1.0
2	56.0	3.0	900.0	5.0	35.0	897.0	1.5	1.0	0.0
3	58.0	3.0	1007.0	6.0	24.0	964.0	1.5	2.0	0.0
4	64.0	3.0	1100.0	7.0	50.0	1099.0	1.5	1.5	0.0

```
re.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 128 entries, 0 to 155
Data columns (total 9 columns):
 #   Column     Non-Null Count  Dtype
---  ------     --------------  -----
 0   Price      128 non-null    float64
 1   Bedroom    128 non-null    float64
 2   Space      128 non-null    float64
 3   Room       128 non-null    float64
 4   Lot        128 non-null    float64
 5   Tax        128 non-null    float64
 6   Bathroom   128 non-null    float64
 7   Garage     128 non-null    float64
 8   Condition  128 non-null    float64
dtypes: float64(9)
memory usage: 10.0 KB
```

```
re.describe()
```

	Price	Bedroom	Space	Room	Lot	Tax	Bathroom	Garage	Condition
count	128.000000	128.000000	128.000000	128.000000	128.000000	128.000000	128.000000	128.000000	128.000000
mean	56.718750	3.195312	1109.382812	6.531250	32.664062	925.476562	1.488281	0.812500	0.226562
std	13.348708	1.392096	480.844011	1.724933	8.630907	435.174559	0.548674	0.810852	0.420252
min	32.000000	1.000000	539.000000	4.000000	24.000000	418.000000	1.000000	0.000000	0.000000
25%	46.000000	2.000000	809.750000	5.000000	25.000000	679.750000	1.000000	0.000000	0.000000
50%	56.000000	3.000000	963.500000	6.000000	30.000000	855.500000	1.500000	1.000000	0.000000
75%	64.000000	4.000000	1199.500000	7.000000	35.500000	1039.750000	2.000000	1.500000	0.000000
max	90.000000	8.000000	2295.000000	12.000000	50.000000	2752.000000	3.000000	2.000000	1.000000

```
pd.isnull(re).sum()
# checking null value
```

	0
Price	0
Bedroom	0
Space	0
Room	0
Lot	0
Tax	0
Bathroom	0
Garage	0
Condition	0

dtype: int64

```
re.dropna(inplace=True)
# droping null values


pd.isnull(re).sum()
```

	0
Price	0
Bedroom	0
Space	0
Room	0
Lot	0
Tax	0
Bathroom	0
Garage	0
Condition	0

dtype: int64

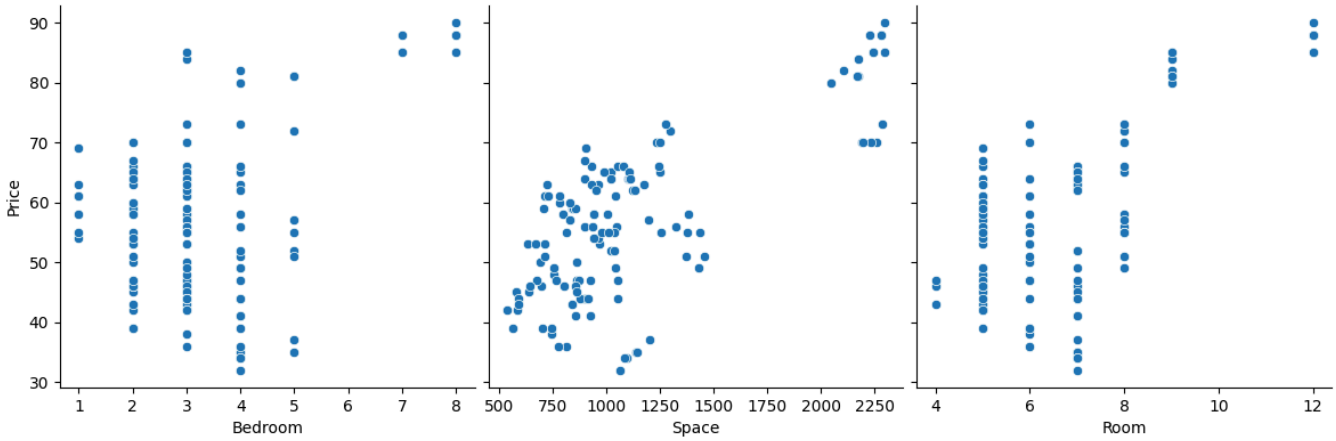
```
re.dtypes
```

	0
Price	float64
Bedroom	float64
Space	float64
Room	float64
Lot	float64
Tax	float64
Bathroom	float64
Garage	float64
Condition	float64

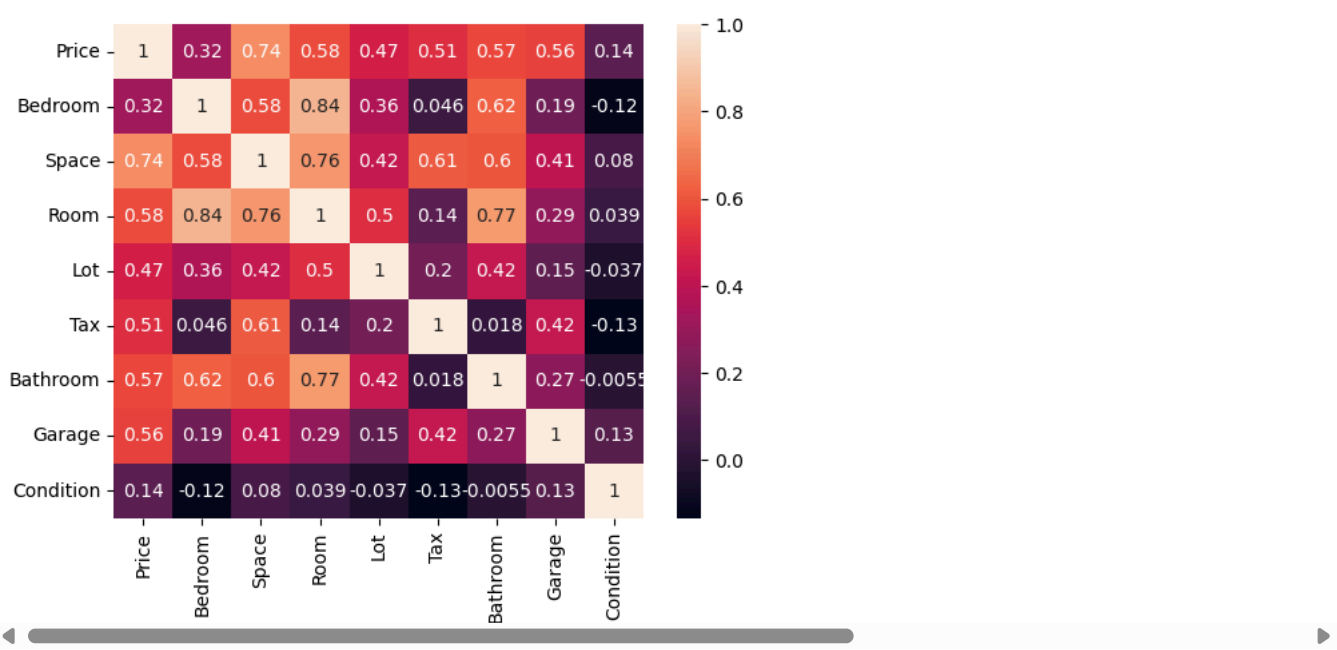
dtype: object

```
# Pairplot
sns.pairplot(re,x_vars=['Bedroom','Space','Room'],y_vars=['Price'],size=4,aspect=1,kind='scatter')
# Pairplot is usually used to plot when we want to know correlation in terms of positive, negative or no-correlation
# target variable is Price(y), we are comparing price with bedroom, space and room to see who is more correlated(positively correlated)
# aspect = ratio
# Space = positive corelation
```

```
<seaborn.axisgrid.PairGrid at 0x78c21705ea40>
```




```
# Heatmap
sns.heatmap(re.corr(),annot=True)
plt.show()
# heatmap plots co-relation with numbers and colors
# heatmap- light color for negative corr and dark for +ve corr
# Space is more correlated with Credit amount , so its our indepedant var
```




```
x=re['Space'].values
y=re['Price'].values


X=x.reshape(-1,1)
X
```

```
array([[ 967.],
       [ 815.],
       [ 900.],
       [1007.],
       [1100.],
       [ 897.],
       [2261.],
       [2104.],
       [2240.],
       [ 641.],
       [ 862.],
       [1043.],
       [1325.],
       [ 782.],
       [1126.],
       [ 929.],
       [1137.],
       [ 743.],
```

```
            [ 803.],
            [ 696.],
            [ 691.],
            [1023.],
            [ 964.],
            [ 799.],
            [ 943.],
            [1041.],
            [1124.],
            [ 855.],
            [2230.],
            [1299.],
            [2173.],
            [2278.],
            [ 583.],
            [ 874.],
            [1053.],
            [1255.],
            [ 785.],
            [1104.],
            [1250.],
            [ 898.],
            [1142.],
            [ 812.],
            [ 539.],
            [ 758.],
            [ 636.],
            [1053.],
            [ 828.],
            [ 839.],
            [1049.],
            [ 880.],
            [1458.],
            [2191.],
            [1233.],
            [2171.],
            [2295.],
            [ 581.],
            [ 924.],
```

```
#Train_test_split¶
from sklearn.model_selection import train_test_split
X_train,X_test,y_train,y_test = train_test_split(X,y,train_size=0.7,test_size=0.3,random_state=100)
```

```
X_train.shape
```

```
(89, 1)
```

```
y_test.shape
```

```
(39,)
```

```
#Building a linear model
from sklearn.linear_model import LinearRegression
lr=LinearRegression()
lr.fit(X_train,y_train)
```

```
LinearRegression()
```

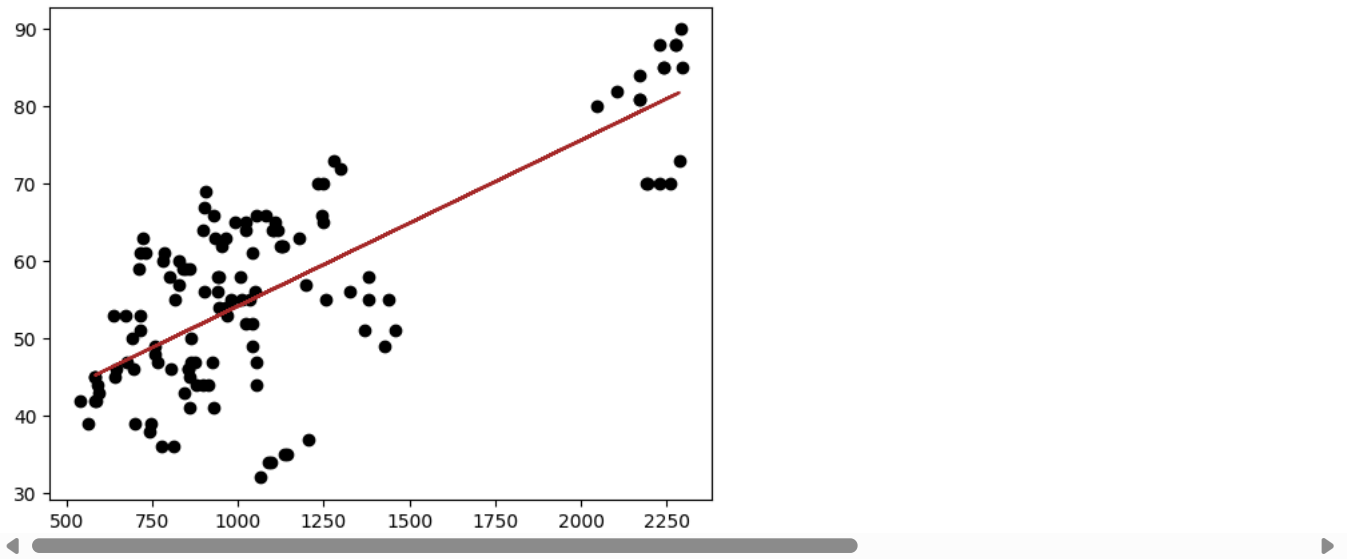
```
ypred=lr.predict(X_test)
ypred
```

```
array([55.11961598, 52.75962602, 56.49270104, 60.16141271, 52.9527161 ,
       54.69052689, 51.17199641, 56.64288222, 55.07670707, 79.74932938,
       56.42833768, 80.58605309, 60.61195625, 48.23273618, 79.85660165,
       51.19345086, 62.13522249, 51.49381322, 45.25056705, 54.64761798,
       81.59441244, 57.05051685, 45.29347596, 59.66796026, 50.16363706,
       55.33416052, 56.85742677, 81.80895698, 76.61697907, 49.41273116,
       54.00398436, 54.94798034, 51.17199641, 49.00509653, 48.70473418,
       53.4247141 , 53.72507645, 51.98726567, 49.5843668 ])
```

```
#Calculating r2
from sklearn.metrics import r2_score
r_squared=r2_score(y_test,ypred)
r_squared
```

```
0.5100691257265606
```

```
#Visualizing the fit on test data
plt.scatter(re['Space'],re['Price'],color='Black')
plt.plot(X_test,ypred,color='Brown')
plt.show()
```



Start coding or generate with AI.

```
0.5100691257265606
```