In [2]:
```
#importing Importing Libraries
import pandas as pd
import numpy as np
import seaborn as sns


import matplotlib.pyplot as plt
%matplotlib inline
import warnings
warnings.filterwarnings("ignore")
from sklearn import linear_model
```

In [3]:
```
# Question 1: importing  Data
df = pd.read_csv("./Dataset.csv")
```

In [4]:
```
df
# we have two columns sqft and property price
```

Out[4]:

	Sqft	propertyprice
0	2500	800000
1	3500	1000000
2	3800	1500000
3	4500	2000000
4	5000	2500000

In [5]:
```
df.describe()
```

Out[5]:

	Sqft	propertyprice
count	5.00000	5.000000e+00
mean	3860.00000	1.560000e+06
std	960.72889	7.021396e+05
min	2500.00000	8.000000e+05
25%	3500.00000	1.000000e+06
50%	3800.00000	1.500000e+06
75%	4500.00000	2.000000e+06
max	5000.00000	2.500000e+06

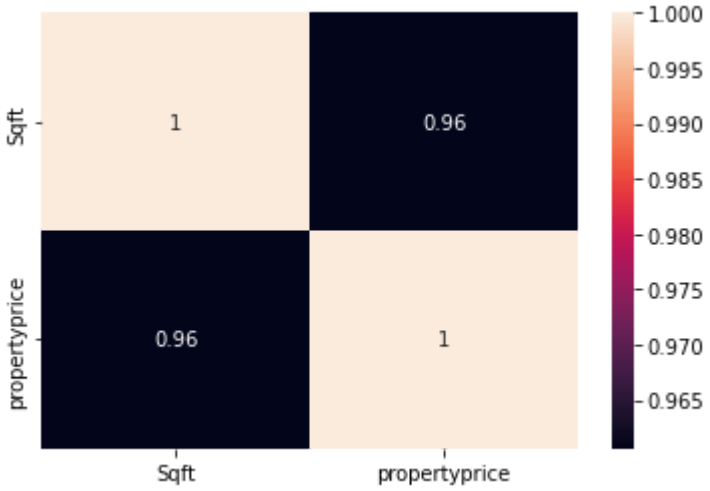
In [10]:
```
# Check for the missing and null values
df.isna().sum()
```

Out[10]:
```
Sqft             0
```

```
propertyprice    0
dtype: int64
```

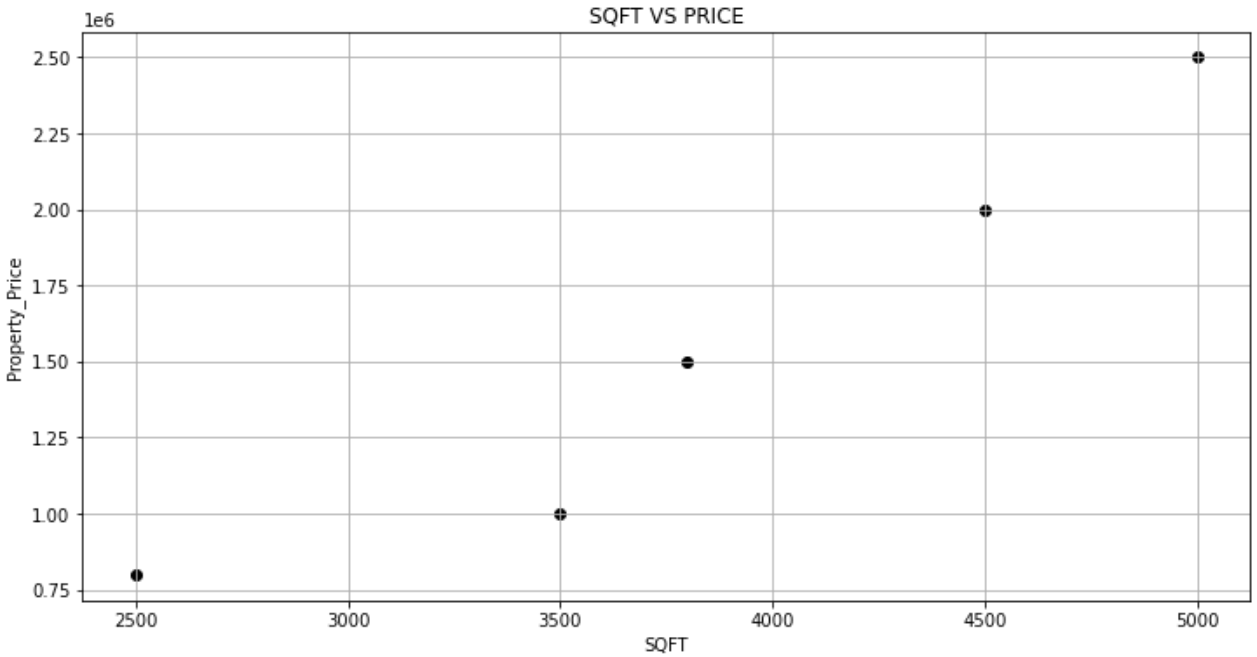
In [11]:

```
#Corelation with the heatmap
sns.heatmap(df.corr(),annot = True)
plt.show()
```



In [27]:

```
#Question 2: Scatterplot
plt.figure(figsize=(12,6))
plt.scatter(df['Sqft'],df['propertyprice'],color = 'black')
plt.title('SQFT VS PRICE')
plt.xlabel('SQFT')
plt.ylabel('Property_Price')
plt.grid(True)
plt.show()
```



In [16]:

```
n_df = df.drop('propertyprice', axis = 'columns' )
```

In [17]:
```
n_df
```

Out[17]:

	Sqft
0	2500
1	3500
2	3800
3	4500
4	5000

In [18]:
```
#Sales = Target
target = df['propertyprice']
```

In [19]:
```
target
```

Out[19]:
```
0     800000
1    1000000
2    1500000
3    2000000
4    2500000
Name: propertyprice, dtype: int64
```

In [20]:
```
# Question 3: Creating linear regression model
lr = linear_model.LinearRegression()
```

In [22]:
```
# Question 4: Training Data set
lr.fit(n_df,target)
```

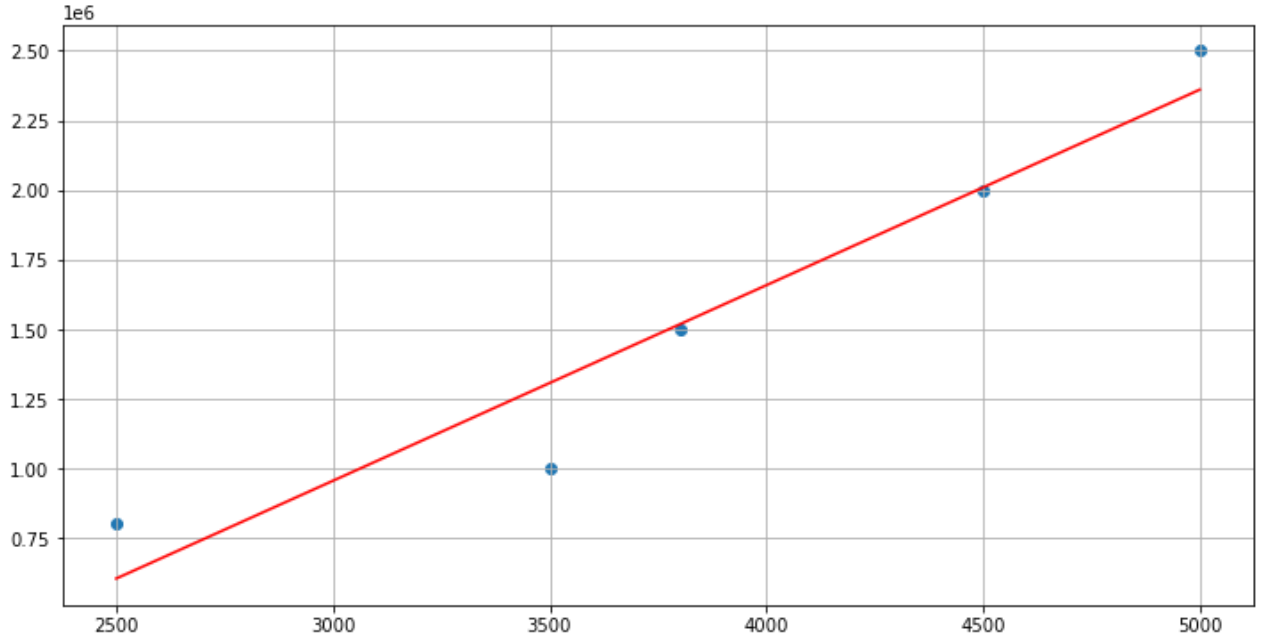
Out[22]:
```
LinearRegression()
```

In [24]:
```
#Question 5: Predict price for given 3200 sqft value.
lr.predict([[3200]])
```

Out[24]:
```
array([1096641.38678223])
```

In [25]:
```
#Generate model prediction for given sqft area
y_predict = lr.predict(n_df)
```

In [29]:
```
# Visualize the predicte amount
plt.figure(figsize=(12,6))
plt.scatter(df['Sqft'],df['propertyprice'])
plt.plot(df['Sqft'],y_predict,'r')
plt.grid(True)
plt.show()
```



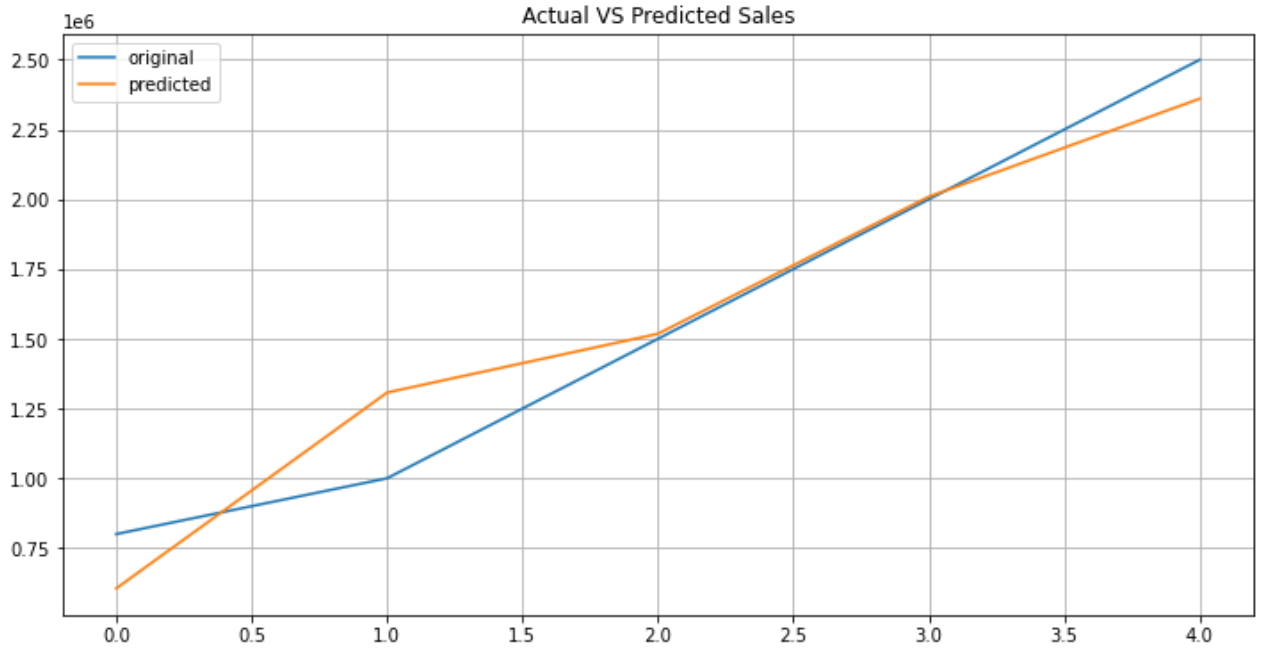
In [30]:
```
#Intercept value
print('Intercept:',lr.intercept_)
```

```
Intercept: -1149945.8288190686
```

In [31]:
```
#SLope Value
print('Slope:',lr.coef_)
```

```
Slope: [702.05850488]
```

In [32]:
```
plt.figure(figsize=(12,6))
x_ax = range(len(df['propertyprice']))
plt.plot(x_ax,df['propertyprice'],label ='original')
plt.plot(x_ax,y_predict,label='predicted')
plt.title("Actual VS Predicted Sales")
plt.legend()
plt.grid()
plt.show()
```



Conclusion from the assignment

There were no missing and null values in our dataset

Property price seems to be linearly dependent to the square foot i.e as the square foot increases the property price is increases too.

Based on trained Linear Model, if the house size is 3200 sqft then the house price will be approximate of 1096641.

In [ ]: