

Import Library

```
import pandas as pd
from sklearn.linear_model import LinearRegression
import matplotlib.pyplot as plt
```

Load Dataset from Local Directory

```
from google.colab import files
uploaded = files.upload()
```

Housing.csv

• **Housing.csv**(text/csv) - 7668 bytes, last modified: 4/4/2023 - 100% done
Saving Hous... .csv to Housing.csv

Load Dataset

```
dataset = pd.read_csv('Housing.csv')
```

Load Summarize

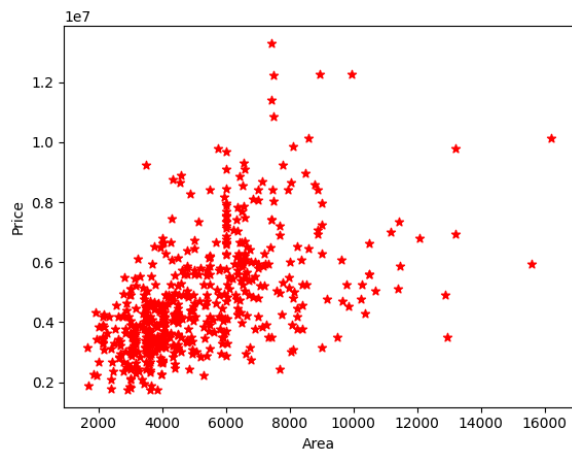
```
print(dataset.shape)
print(dataset.head(5))
```

```
(545, 2)
   area  price
0  7420 13300000
1  8960 12250000
2  9960 12250000
3  7500 12215000
4  7420 11410000
```

Visualize Dataset

```
plt.xlabel('Area')
plt.ylabel('Price')
plt.scatter(dataset.area, dataset.price, color='red', marker='*')
```

 <matplotlib.collections.PathCollection at 0x7f088b8cd160>



Segregate Dataset into X & Y

```
X = dataset.drop('price', axis='columns')
X
```

	area
0	7420
1	8960
2	9960
3	7500
4	7420
...	...
540	3000
541	2400
542	3620
543	2910
544	3850

545 rows × 1 columns

```
Y = dataset.price
Y
0      13300000
1      12250000
2      12250000
3      12215000
4      11410000
...
540     1820000
541     1767150
542     1750000
543     1750000
544     1750000
Name: price, Length: 545, dtype: int64
```

Training Dataset using Linear Regression

```
model = LinearRegression()
model.fit(X,Y)
```

```
LinearRegression()
LinearRegression()
```

Predicted Price for Land sq.feet of custom values

```
x = 7450
LandAreaInSqFt = [[x]]
PredictedmodelResult = model.predict(LandAreaInSqFt)
print(PredictedmodelResult)

[5829021.44472867]
/usr/local/lib/python3.9/dist-packages/sklearn/base.py:439: UserWarning: X does not have valid feature names, but LinearRegression was fitted with feature names
warnings.warn(
```

▾ Let's check whether model is right?

Theory Calculation $Y = m * X + b$

Coefficient - m

```
m = model.coef_
print(m)

[461.97489427]
```

Intercept - b

```
b = model.intercept_
print(b)

2387308.48239643
```

▾ $y = mx + b$

```
y = m*x+b
print("The price of {0} Square feet land is: {1}" .format(x,y[0]))

The price of 7450 Square feet land is: 5829021.44472867
```