

Microsoft Excel interface showing a dataset with columns 'area' and 'price'.

Excel Ribbon:

- Clipboard: Cut, Copy, Paste, Format Painter
- Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color
- Alignment: Wrap Text, Merge & Center
- Number: General, Percentage, Decimal, Fraction
- Conditional Formatting: Normal, Bad, Good, Neutral, Calculation, Check Cell
- Cells: Insert, Delete, Format
- Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

Dataset:

	area	price
1		
2	8450	208500
3	9600	181500
4	11250	223500
5	9550	140000
6	14260	250000
7	14115	143000
8	10084	307000
9	10382	200000
10	6120	129900
11	7420	118000
12	11200	129500
13	11924	345000
14	12968	144000
15	10652	279500
16	10920	157000
17	6120	132000
18	11241	149000
19	10791	90000
20	13695	159000
21	7560	139000
22	14215	325300
23	7449	139400
24	9742	230000
25	4224	129900
26	8246	154000
27	14230	256300
28	7200	134800
29	11478	306000
30	16321	207500

Excel Status Bar: Average: 95719.01199 | Count: 2922 | Sum: 279499



colab.research.google.com/drive/1Sp8fc2vqxot61cyddvya2bR4ezMIJKZr#scrollTo=vKrHCik_jwfl

11__House_price_prediction_using_Linear_Regression.ipynb

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import Libraries

```
[1] 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()
```

Choose Files dataset.csv


- dataset.csv(application/vnd.ms-excel) - 19505 bytes, last modified: 5/5/2021 - 100% done

Load Dataset

Executing (8s) Cell > upload() > eval_js() > read_reply_from_input()

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```
[3] dataset = pd.read_csv('dataset.csv')
```

Load Summarize

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

```
(1460, 2)
  area  price
0   8450  208500
1   9600  181500
2  11250  223500
3   9550  140000
4  14260  250000
```

Visualize Dataset

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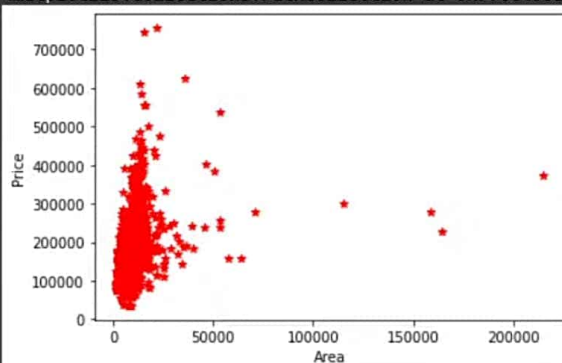
✓ RAM
Disk

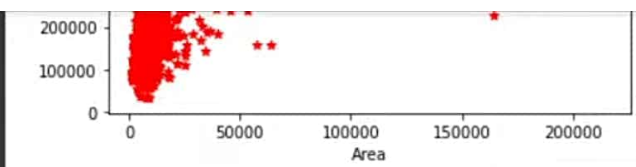
Editing



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

<matplotlib.collections.PathCollection at 0x7fec406a1a10>





▼ Segregate Dataset into Input X & Output Y

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



```
[ ] Y = dataset.price  
Y
```

▼ Training Dataset using Linear Regression

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```
[7]: 1456 210000
      1457 266500
      1458 142125
      1459 147500
      Name: price, Length: 1460, dtype: int64
```

Training Dataset using Linear Regression

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

```
LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=False)
```

Predicted Price for Land sq.Feet of custom values

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Predicted Price for Land sq.Feet of custom values

```
x=3333
LandAreainSqFt=[[x]]
PredictedmodelResult = model.predict(LandAreainSqFt)
print(PredictedmodelResult)
```

```
[165835.35841192]
```

Let's check is our model is Right ?

Theory Calculation

$Y = m * X + b$ (m is coefficient and b is intercept)

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$Y = m \times X + b$ (m is coefficient and b is intercept)

Coefficient - m

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

Intercept - b

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

Y=mx+b

x is Independent variable - Input - area

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

158836.1518968766

Y=mx+b

x is Independant variable - Input - area

0s

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

The Price of 3333 Square feet Land is: 165835.35841191828

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