In [1]:
```
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# 6.2 Program to demonstrate Linear Regression (multiple variable) using python
import pandas as pd
from sklearn import linear_model
```

In [2]:
```
link = (r"https://raw.githubusercontent.com/codebasics/py/master/ML/2_linear_reg_mu
data = pd.read_csv(link)
print(data)
```

```
   area  bedrooms  age   price
0  2600       3.0   20  550000
1  3000       4.0   15  565000
2  3200       NaN   18  610000
3  3600       3.0   30  595000
4  4000       5.0    8  760000
5  4100       6.0    8  810000
```

In [3]:
```
data.bedrooms
```

Out[3]:
```
0    3.0
1    4.0
2    NaN
3    3.0
4    5.0
5    6.0
Name: bedrooms, dtype: float64
```

In [4]:
```
data.bedrooms.median()
```

Out[4]:
```
4.0
```

In [5]:
```
data.bedrooms = data.bedrooms.fillna(0)
data
```

Out[5]:

	area	bedrooms	age	price
0	2600	3.0	20	550000
1	3000	4.0	15	565000
2	3200	0.0	18	610000
3	3600	3.0	30	595000
4	4000	5.0	8	760000
5	4100	6.0	8	810000

In [6]:
```
data.price.mean()
```

Out[6]:
```
648333.3333333334
```

In [7]:
```
model = linear_model.LinearRegression()
model.fit(data.drop('price', axis = 'columns'), data.price)
```

Out[7]:
```
▾ LinearRegression
LinearRegression()
```

In [8]:
```
model.predict([[3000,3,40]])[0]
```

```
C:\Users\ayush\AppData\Local\Programs\Python\Python310\lib\site-packages\sklearn\base.py:450: UserWarning: X does not have valid feature names, but LinearRegression was fitted with feature names
  warnings.warn(
```

Out[8]:
```
467691.8621264559
```

In [9]:
```
model.predict([[2500,4,5]])[0]
```

```
C:\Users\ayush\AppData\Local\Programs\Python\Python310\lib\site-packages\sklearn\base.py:450: UserWarning: X does not have valid feature names, but LinearRegression was fitted with feature names
  warnings.warn(
```

Out[9]:
```
590114.6401982214
```