EXPERIMENT 4(B)

IMPLEMENTATION OF MULTIVARIATE LINEAR REGRESSION

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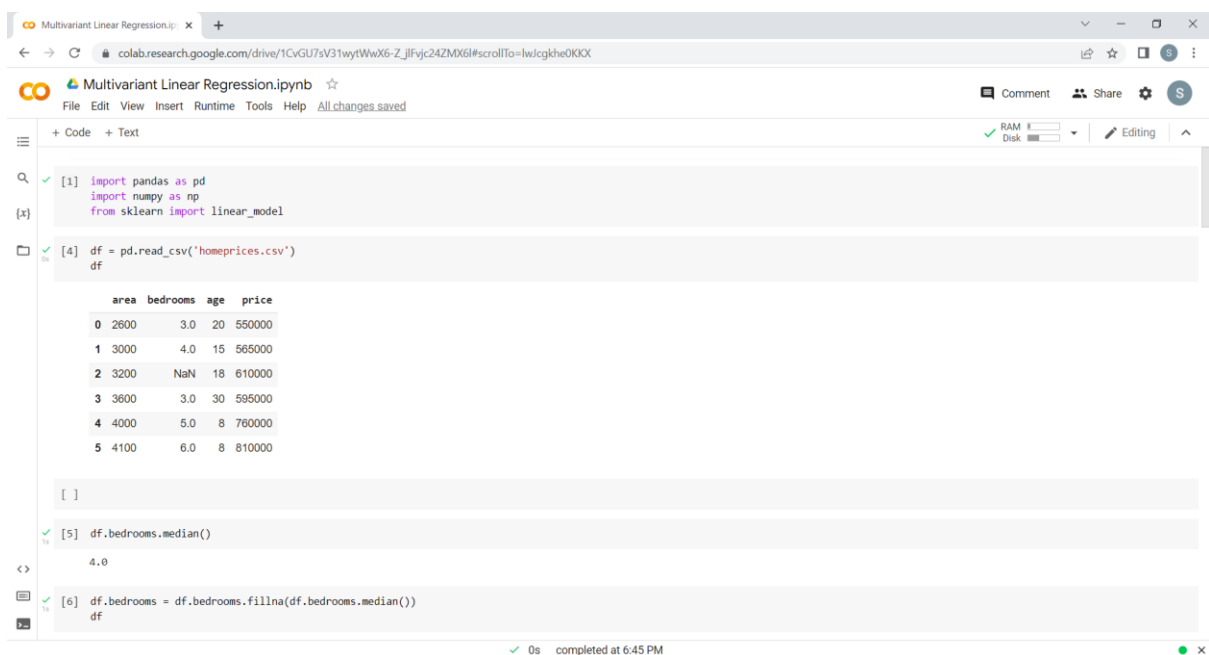
REGISTRATION NUMBER : 19BCE7230

SLOT NO : L-23+24

CODE –

```python
import pandas as pd
import numpy as np
from sklearn import linear_model
df = pd.read_csv('homeprices.csv')
df
df.bedrooms.median()
df.bedrooms = df.bedrooms.fillna(df.bedrooms.median())
df
reg = linear_model.LinearRegression()
reg.fit(df.drop('price',axis='columns'),df.price)
reg.coef_
reg.intercept_
reg.predict([[3000, 3, 40]])
112.06244194*3000 + 23388.88007794*3 + -
3231.71790863*40 + 221323.00186540384
reg.predict([[2500, 4, 5]])
```

OUTPUT –

EXERCISE - HIRING DATASET –

CODE –

```
df = pd.read_csv('hiring.csv')
df
df.experience.median()
df.experience = df.experience.fillna(df.experience.median())
df
df.test.median()
df.test = df.test.fillna(df.test.median())
df
reg = linear_model.LinearRegression()
reg.fit(df.drop('salary',axis='columns'),df.salary)
reg.coef_
reg.intercept_
```

```
reg.predict([[2,9,6]])
2813.00813008*2 + 1333.33333333*9 + 2926.82926829*6 + 11869.91869918695
reg.predict([[12,10,10]])
2813.00813008*12 + 1333.33333333*10 + 2926.82926829*10 + 11869.91869918
695
```

OUTPUT –

+ Code + Text

```
[21] df.test = df.test.fillna(df.test.median())
     df
```

	experience	test	interview	salary
0	6.0	8.0	9	50000
1	6.0	8.0	6	45000
2	5.0	6.0	7	60000
3	2.0	10.0	10	65000
4	7.0	9.0	6	70000
5	3.0	7.0	10	62000
6	10.0	8.0	7	72000
7	11.0	7.0	8	80000

```
[22] reg = linear_model.LinearRegression()
     reg.fit(df.drop('salary',axis='columns'),df.salary)

     LinearRegression()
```

```
[23] reg.coef_

     array([2813.00813008, 1333.33333333, 2926.82926829])
```

```
[24] reg.intercept_
```

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+ Code + Text

```
[24] reg.intercept_

     11869.91869918695
```

```
[25] reg.predict([[2,9,6]])

     /usr/local/lib/python3.7/dist-packages/sklearn/base.py:451: UserWarning: X does not have valid feature names, but LinearRegression was fitted with feature names
       "X does not have valid feature names, but"
     array([47056.91056911])
```

```
[27] 2813.00813008*2 + 1333.33333333*9 + 2926.82926829*6 + 11869.91869918695

     47056.910569056956
```

```
[28] reg.predict([[12,10,10]])

     /usr/local/lib/python3.7/dist-packages/sklearn/base.py:451: UserWarning: X does not have valid feature names, but LinearRegression was fitted with feature names
       "X does not have valid feature names, but"
     array([88227.64227642])
```

```
2813.00813008*12 + 1333.33333333*10 + 2926.82926829*10 + 11869.91869918695

88227.64227634695
```

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