

PRACTICAL NO 6

Aim: To implement Linear Regression.

Software: Jupyter

Datasets: data.csv

Step 1: Import libraries and dataset.

Import the important libraries and the dataset we are using to perform Polynomial Regression.

Step 2: Dividing the dataset into 2 components.

Divide dataset into two components that is X and y. X will contain the Column between 1 and 2. y will contain the 2 column.

Step 3: Fitting Linear Regression to the dataset

Fitting the linear Regression model On two components.

Step 4: Fitting Polynomial Regression to the dataset

Fitting the Polynomial Regression model on two components X and y.

Step 5: In this step we are Visualising the Linear Regression results using scatter plot.

	A	B	C
1	sno	Temperat	Pressure
2	1	0	0.0002
3	2	20	0.0012
4	3	40	0.006
5	4	60	0.03
6	5	80	0.09
7	6	100	0.27

Code:

```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd

# Step 1 :Import libraries and dataset

datas = pd.read_csv('data.csv')
```

```
print(datas)
```

```
In [1]: import numpy as np
import matplotlib.pyplot as plt
import pandas as pd

In [5]: datas = pd.read_csv('data.csv')
print(datas)
```

	srno	Temperature	Pressure
0	1	0	0.0002
1	2	20	0.0012
2	3	40	0.0060
3	4	60	0.0300
4	5	80	0.0900
5	6	100	0.2700

Step 2: Dividing the dataset into 2 components

```
X = datas.iloc[:, 1:2].values
y = datas.iloc[:, 2].values
```

Step 3: Fitting Linear Regression to the dataset

```
from sklearn.linear_model import LinearRegression
lin = LinearRegression()
lin.fit(X, y)
```

```
In [6]: X = datas.iloc[:, 1:2].values
y = datas.iloc[:, 2].values

In [7]: from sklearn.linear_model import LinearRegression
lin = LinearRegression()
lin.fit(X, y)

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

Step 4: Visualising the Linear Regression results

```
plt.scatter(X, y, color = 'blue')
plt.plot(X, lin.predict(X), color = 'red')
plt.title('Linear Regression')
plt.xlabel('Temperature')
plt.ylabel('Pressure')
plt.show()
```

```
In [9]: plt.scatter(X, y, color = 'green')  
plt.plot(X, lin.predict(X), color = 'blue')  
plt.title('Linear Regression')  
plt.xlabel('Temperature')  
plt.ylabel('Pressure')  
plt.show()
```

