In [ ]:

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# practical no. : 1

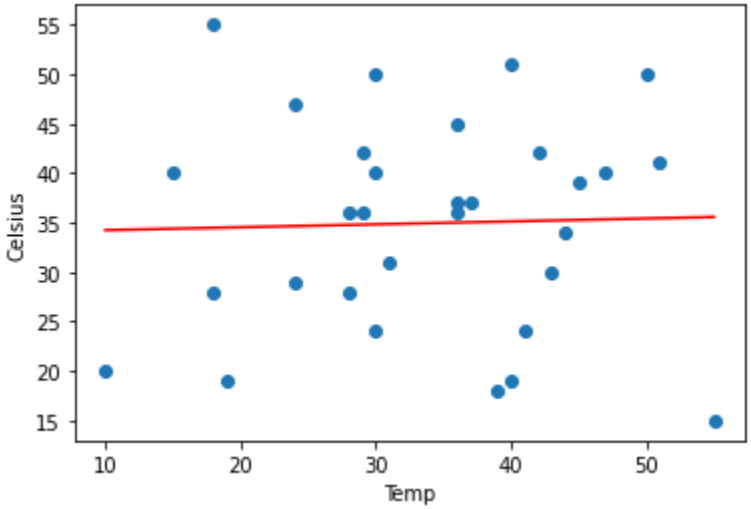
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt


# collect data
data = {'Temp': [10,30,44,28,36,19,50,37,42,31,43,18,30,55,24,15,29,40,36,51,45,41,39,24
        'Celsius': [20,40,34,28,36,19,50,37,42,31,30,55,24,15,29,40,36,51,45,41,39,24,18
}

# form dataframe
dataframe = pd.DataFrame(data, columns=['Temp', 'Celsius'])
print("Dataframe is : ")
print(dataframe)
plt.scatter(dataframe['Temp'], dataframe['Celsius'])
plt.plot(np.unique(dataframe['Temp']), np.poly1d(np.polyfit(dataframe['Temp'], dataframe
plt.xlabel('Temp')
plt.ylabel('Celsius')
plt.show()

# form correlation matrix
matrix = dataframe.corr()
print("Correlation matrix is : ")
print(matrix)
```

```
Dataframe is :
    Temp  Celsius
0     10       20
1     30       40
2     44       34
3     28       28
4     36       36
5     19       19
6     50       50
7     37       37
8     42       42
9     31       31
10    43       30
11    18       55
12    30       24
13    55       15
14    24       29
15    15       40
16    29       36
17    40       51
18    36       45
19    51       41
20    45       39
21    41       24
22    39       18
23    24       47
24    18       28
25    47       40
26    28       36
27    40       19
28    30       50
29    36       37
      ..       42
```




```
Correlation matrix is :
             Temp   Celsius
Temp     1.000000  0.030836
Celsius  0.030836  1.000000
```