

Feature Scaling

PNT2022TMID26965

```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from numpy import asarray
from sklearn.preprocessing import StandardScaler
ds=pd.read_csv(r"/content/Crude-Oil-Prices-Daily.csv")
ds.head()
```

	Date	Closing Value
0	1/2/1986	25.56
1	1/3/1986	26.00
2	1/6/1986	26.53
3	1/7/1986	25.85
4	1/8/1986	25.87

```
ds.describe()
```

	Closing Value
count	8216.000000
mean	43.492139
std	29.616804
min	10.250000
25%	19.577500
50%	29.610000
75%	63.402500
max	145.310000

#Scaling

```
x = ds.iloc[:, 1:3].values
print ("\nOriginal data values : \n", x)
```

Original data values :

```
[[25.56]
 [26.   ]
 [26.53]
```

...

```
[73.05]
 [73.78]
 [73.93]]
```

```
from sklearn import preprocessing
```

```
min_max_scaler = preprocessing.MinMaxScaler(feature_range =(0, 1))
x_after_min_max_scaler = min_max_scaler.fit_transform(x)
print (x_after_min_max_scaler)
```

```
[[0.11335703]
 [0.11661484]
 [0.12053902]
 ...
 [0.46497853]
 [0.47038353]
 [0.47149415]]
```

```
Standardisation = preprocessing.StandardScaler()
x_after_Standardisation = Standardisation.fit_transform(x)
print (x_after_Standardisation)
```

```
[[-0.60550861]
 [-0.59065128]
 [-0.57275494]
 ...
 [ 0.99807057]
 [ 1.02272024]
 [ 1.02778524]]
```