Feature Scaling Technique - StandardScaler

In [10]:

```
# Loding the library
import pandas as pd
```

In [12]:

```
# Loading the dataset
heart_df = pd.read_csv("heart.csv")
```

In [14]:

```
# Printing the first 5 records in dataset
heart_df.head()
```

Out[14]:

	age	sex	cp	trestbps	chol	fbs	restecg	thalach	exang	oldpeak	slope	ca	thal	target
0	63	1	3	145	233	1	0	150	0	2.3	0	0	1	1
1	37	1	2	130	250	0	1	187	0	3.5	0	0	2	1
2	41	0	1	130	204	0	0	172	0	1.4	2	0	2	1
3	56	1	1	120	236	0	1	178	0	0.8	2	0	2	1
4	57	0	0	120	354	0	1	163	1	0.6	2	0	2	1

In [16]:

```
# checking the dtype
heart_df.dtypes
```

Out[16]:

```
age           int64
sex           int64
cp            int64
trestbps      int64
chol          int64
fbs           int64
restecg       int64
thalach       int64
exang         int64
oldpeak     float64
slope         int64
ca            int64
thal          int64
target        int64
dtype: object
```

In [18]:

```
# Taking all the input column in a separate dataframe
```

In [20]:

```
X = heart_df.drop(columns = ['target'])
```

In [22]:

```
X
```

Out[22]:

	age	sex	cp	trestbps	chol	fbs	restecg	thalach	exang	oldpeak	slope	ca	thal
0	63	1	3	145	233	1	0	150	0	2.3	0	0	1
1	37	1	2	130	250	0	1	187	0	3.5	0	0	2
2	41	0	1	130	204	0	0	172	0	1.4	2	0	2
3	56	1	1	120	236	0	1	178	0	0.8	2	0	2
4	57	0	0	120	354	0	1	163	1	0.6	2	0	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...

298	57	0	0	140	241	0	1	123	1	0.2	1	0	3
299	45	1	3	110	264	0	1	132	0	1.2	1	0	3
300	68	1	0	144	193	1	1	141	0	3.4	1	2	3
301	57	1	0	130	131	0	1	115	1	1.2	1	1	3
302	57	0	1	130	236	0	0	174	0	0.0	1	1	2

303 rows × 13 columns

In [24]:
```python
# loading the StandardScaler Class
from sklearn.preprocessing import StandardScaler
```

In [26]:
```python
# creating the object of StandardScaler
sc = StandardScaler()
```

In [28]:
```python
# applying the fit() function
sc.fit(X)
```

Out[28]:
```
▼ StandardScaler
StandardScaler()
```

In [30]:
```python
# applying the transform function
X_new = sc.transform(X)
```

In [32]:
```python
# printing the transformed dataset
pd.DataFrame(X_new)
```

Out[32]:

	0	1	2	3	4	5	6	7	8
0	0.952197	0.681005	1.973123	0.763956	-0.256334	2.394438	-1.005832	0.015443	-0.696631
1	-1.915313	0.681005	1.002577	-0.092738	0.072199	-0.417635	0.898962	1.633471	-0.696631
2	-1.474158	-1.468418	0.032031	-0.092738	-0.816773	-0.417635	-1.005832	0.977514	-0.696631
3	0.180175	0.681005	0.032031	-0.663867	-0.198357	-0.417635	0.898962	1.239897	-0.696631
4	0.290464	-1.468418	-0.938515	-0.663867	2.082050	-0.417635	0.898962	0.583939	1.435481
...	...	...	...	...	...	...	...	...	...
298	0.290464	-1.468418	-0.938515	0.478391	-0.101730	-0.417635	0.898962	-1.165281	1.435481
299	-1.033002	0.681005	1.973123	-1.234996	0.342756	-0.417635	0.898962	-0.771706	-0.696631
300	1.503641	0.681005	-0.938515	0.706843	-1.029353	2.394438	0.898962	-0.378132	-0.696631
301	0.290464	0.681005	-0.938515	-0.092738	-2.227533	-0.417635	0.898962	-1.515125	1.435481
302	0.290464	-1.468418	0.032031	-0.092738	-0.198357	-0.417635	-1.005832	1.064975	-0.696631

303 rows × 13 columns

In [ ]: