

# Scaling

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Scaling is always applied on continuous numerical columns.

## Scaling

400 → 4000 Area  
0.4 → 0.8  
4000  
4000  
6000  
1000 } Scaling

### Normalization

#### → Min max Scaler

It transforms all the values into a scale of 0 to 1 range

$$\text{Min max} = \frac{X - X_{\min}}{X_{\max} - X_{\min}}$$

### Standardization

#### Standard Scaler → standardization

$$Z = \frac{X - \mu}{\sigma}$$

$\mu$  → mean

$\sigma$  → standard deviation

It transforms all the value into a scale of Z value.

### Imp

- \* Scaling is important to transform continuous data into certain scale.
- \* Scaling is important in distance based algorithms.