

Recap: * Multiple Linear Regression

* Maths and Theory of Logistic Regression

Agenda:

- Implementation of log. Regression
- Correlation
- Standard Scaler

Linear Regression

→ Output Column Continuous

Logistic Regression

⇒ Classification ⇒ output Column Categorical value

feature scaling

* we use this technique to scale our data in same range.

Shift A (easy)

Max-Marks = 300

Max-Marks Achieved = 260

Min-Marks Achieved = 80

Your Marks (Victoria) = 180

effective =

$$X_a = \frac{X - X_{\min}}{X_{\max} - X_{\min}}$$

$$\begin{aligned} \text{Marks Victoria} &= \frac{180 - 80}{260 - 80} \\ &= \frac{100}{260} = 0.38 \end{aligned}$$

Shift B

Max-Marks = 300 (difficult)

Max-Marks Achieved = 250

Min-Marks = 50

Sibi (your marks) = 150

effective =

$$\begin{aligned} \text{Marks Sibi} &= \frac{150 - 50}{250 - 50} \\ &= \frac{100}{200} = 0.5 \end{aligned}$$

⇒ Marks Sibi > Marks Victoria (0.38)

(0.5)

⇒

$$\begin{aligned} \text{Actual Marks of} &= 0.35 \times 300 \\ \text{Wichor} &= 105 \end{aligned}$$

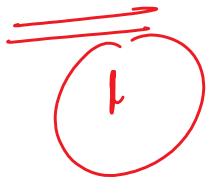
$$\begin{aligned} \text{Actual Marks} &= 0.5 \times 300 \\ \text{Sibi} &= 150 \end{aligned}$$

feature Scaling

→ (Standard Scaler)

⇒ normalise
your data
in same
Range

Correlation:



Speed



Dataset.corr()



Time



-ve Correlation

range = $[-1, 0]$

ex - 0.85 \Rightarrow highly -vely correlated

② True Correlation:

Distance



Time



range $[0 - 1]$

ex 0.85 \Rightarrow highly truly correlated

③ 0 Correlation (No Correlation)



quantity ↑

quantity ↓

Range $[-1, +1]$

Case:1 $[-1, 0] \rightarrow$ -ve correlation

Case:2 $[0, +1] \rightarrow$ +ve correlation

Case:3 $\Rightarrow 0 \Rightarrow$ No correlation

steps :- (i) load the Standard Scaler

(ii) Create model of StandardScaler

(iii) apply fit() on X_train
↳ learning the pattern

(iv) transform () → X_train & X_test
 ↓ ↓
 X_train-sc X_test-sc

<https://www.javatpoint.com/standardscaler-in-sklearn>