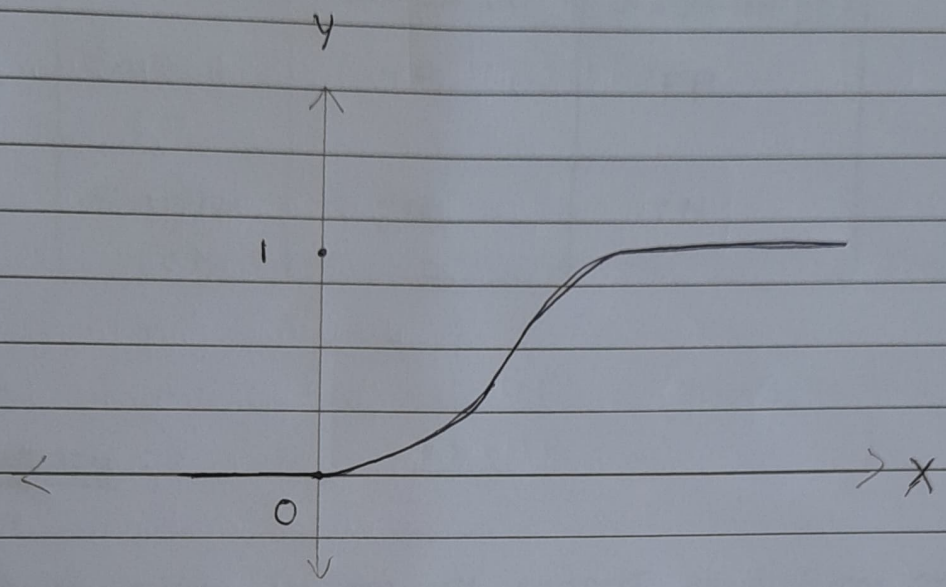
Logistic Regression

Logistic Regression is a supervised ML algorithm used for classification problems. It uses the sigmoid function to map give probabilistic values of the target within the range 0 and 1.



Mathematically, logistic regression is represented as -

$$\hat{y} = \sigma(\theta^T \cdot X) = \frac{1}{1 + e^{-\theta^T \cdot X}}$$

where, $\theta^T = [\theta_0, \theta_1, \theta_2, \ldots \theta_n]$

$X = [X_1, X_2, \ldots X_n]$

Types of Logistic Regression :-

1. Binomial - There are 2 possible values for target
2. Multinomial - " " 3 or more possible unordered values for target.
3. Ordinal - There are 3 or more possible ordered values for target.

Assumptions for Logistic Regression :-

1. The target should be categorical.
2. The features should not have multi-collinearity.