# UNIT-3

9] Write hypothesis fun$^n$ for logistic regression?

→ hypothesis fun$^n$. for logistic regression can be written as:

$$\hat{Y} = h(x) = g(f(x))$$

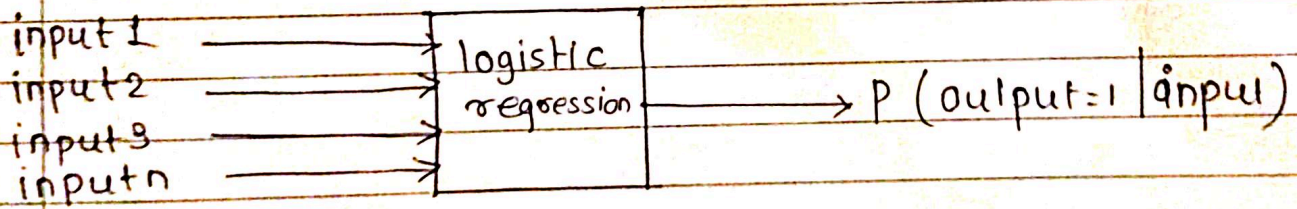
where

$$g(z) = \frac{1}{1+e^{-z}}$$

g(z) is called as logistic fun$^n$ or sigmoidal fun$^n$.

$$\hat{y} = h(x) = g(f(x)) = \frac{1}{1+e^{-f(x)}}$$

$$= \frac{1}{1+e^{-(w_0+w_1x_1+w_2x_2+w_3x_3+\cdots+w_nx_n)}}$$




So output of logistic regression is the probability of output to 1 for given input.

logistic regression & example classification

of many classes.

ex. student can be brilliant/average/poor.
Bowler can be fast/medium/slow.

- Classification :-

① Classification is a process of putting an object into a specific category based on its properties.

② Classification is a process of labelling an input or putting the input into specific class/category based on its certain properties.

③ A process/Function/Algorithm that does the job of classification is called as classifier or discriminator.

④ Mathematically classifier is a function f

$f : x \rightarrow c$

where x is the input / input attributes.
c is set of classes $c = \{c_1, c_2, c_3, c_4, --(n)$