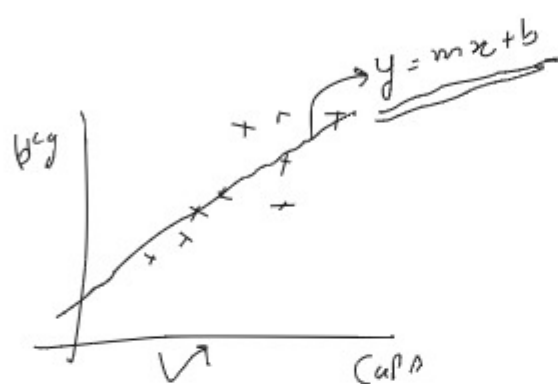


SL
↓
Regression

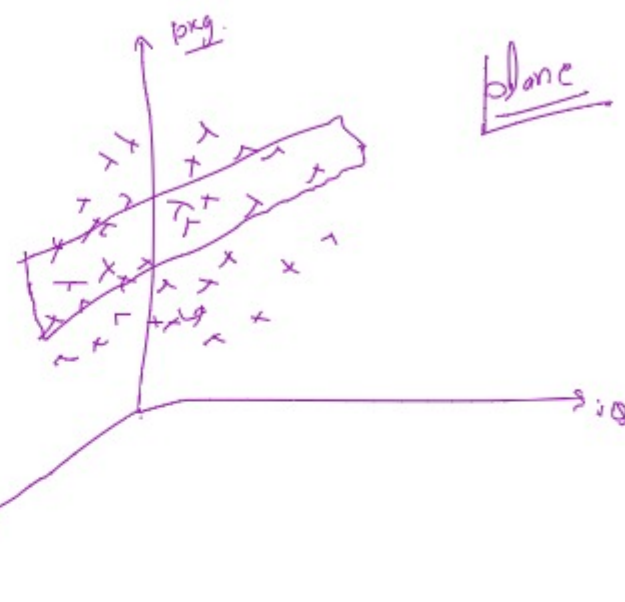
Simple Linear Regression
Multiple Linear Regression

input → 1 output

CGPA	pkg
3.8	7
4	8
2.9	4
⋮	⋮



x_1 CGPA	x_2 10	y pkg
3.5	70	7
3.7	74	8
⋮	⋮	⋮



3D

4D

5D

nD

hyperplane

2D → $y = mx + b$
 ⇒ $y = mx_1 + mx_2 + b$
 ⇒ $y = \beta_0 + \beta_1 x_1 + \beta_2 x_2$

$\beta_0 \Rightarrow b$
 $\beta_1, \beta_2, \dots, \beta_n \Rightarrow \text{slope}$

4D → $y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3$

nD → $y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n$

⇒ $y = \beta_0 + \sum_{i=1}^n \beta_i x_i$

Linear Regression
 in →
 $m = \text{obj. coeff}$
 $b = \text{obj. inter}$

3D
 $x = \begin{matrix} x_1 \\ x_2 \\ x_3 \end{matrix}$ $y = \text{output}$

fitting

$m = \text{array} [2.12 \ 9.]$
 $b = \text{array} [2.73, 3.96] \dots$