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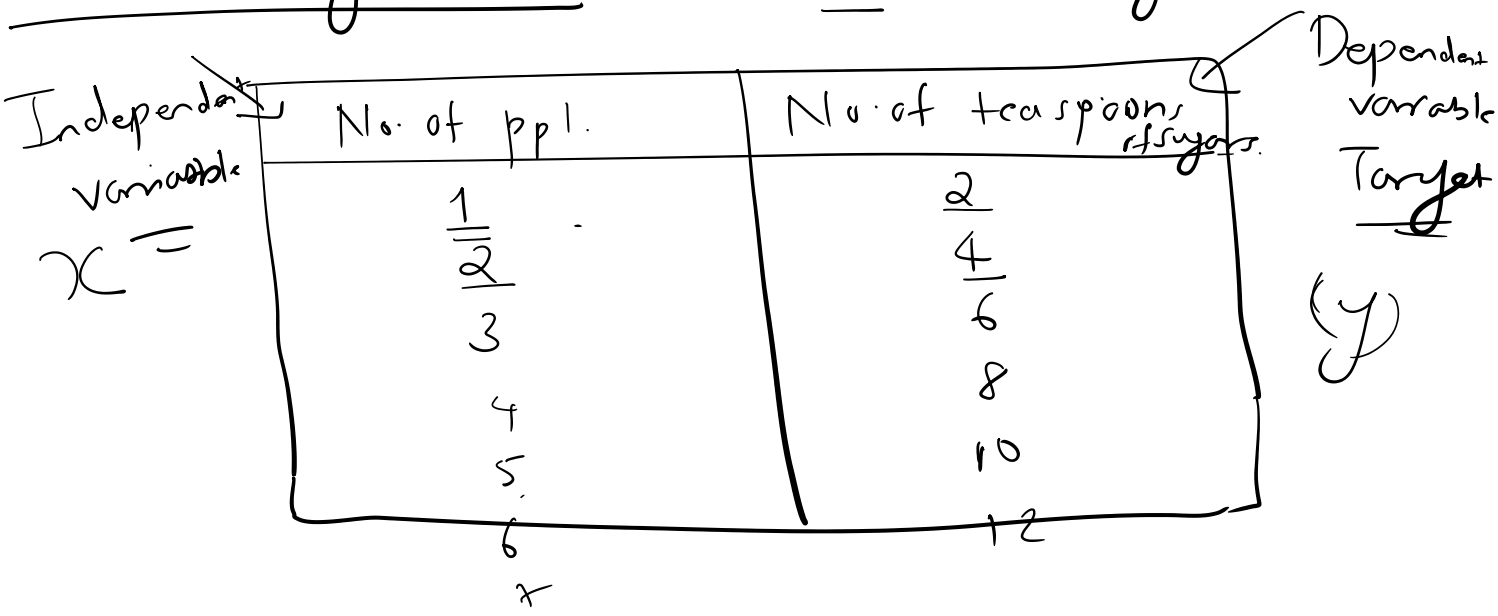
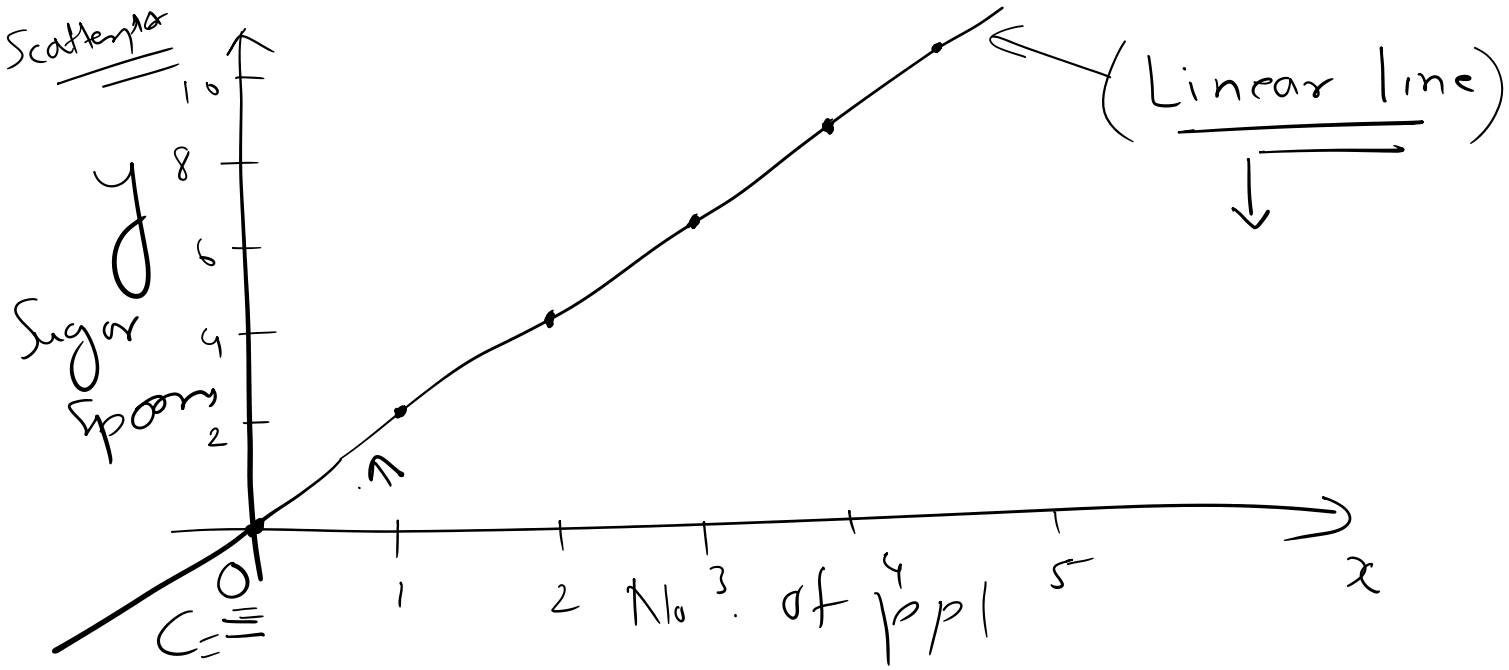
Linear Regression :-

Tea for the guests.




Scatter plot
y
Sugar spoons
10
8
6
4
2
0
1
2
3
4
5
x
No. of ppl
Linear line

Any General Linear line eqn:-

$$y = mx + c$$

For our guest example, $c = 0$,

$$y = mx + 0$$

$$y = mx$$

No. of sug spoons = m × No. of ppl.

y = No. of sugar spoons

x = No. of ppl.

m = slope of the line.

c = meeting point of the line with y-axis.

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No. of SS = m * No. of ppl.

m = 2

Linear Regression equation

So

No. of SS = 2 * No. of ppl.

No. of SS = 2 * 12

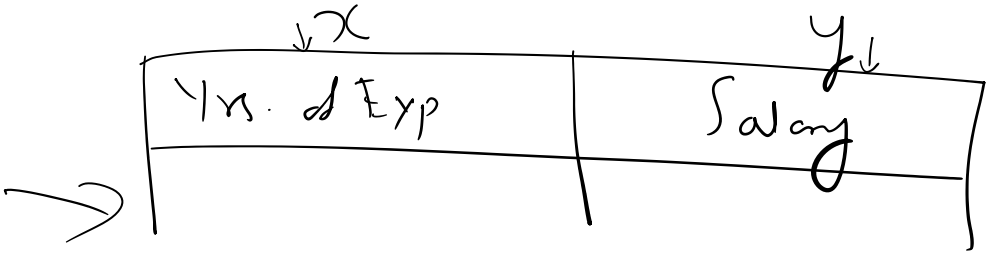
= 24

No. of SS = 2 * 50

= 100

We established the reln betn Indep & dep
by find the values of m & c

$$y = 2x$$ ←



$y = mx + c \Rightarrow$ Salary $= m \times$ Yrs. of Exp $+ c$

x_3	x_1	x_2	y
No. of proper hour.	Edu. Qualification	Yr. of Exp	Salary

$$y = m_1 x_1 + m_2 x_2 + m_3 x_3 + c$$

General linear Reg Eqn :-

$$y = m_1 x_1 + m_2 x_2 + m_3 x_3 + \ldots\ldots + c_1 + c_2 + c_3 \ldots\ldots$$

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots\ldots$$

* Simple Linear Regression :- $y = \beta_0 + \beta x$

only 1 indep variable

* Multiple Linear Regression :- $y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots$