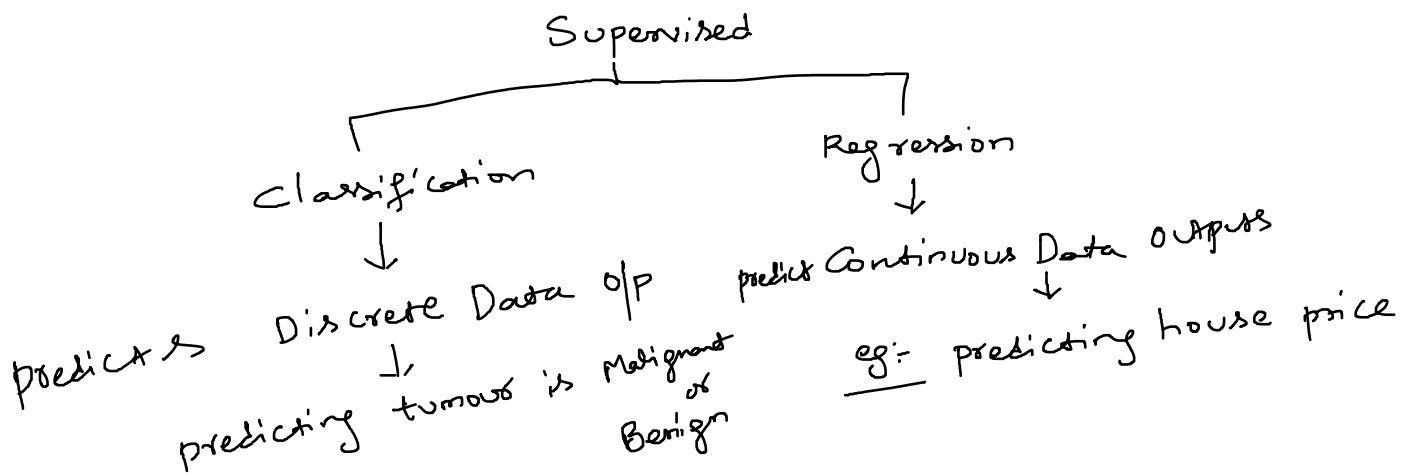




# Linear Regression using python

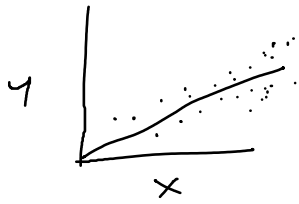


## Linear Regression

Linearity refers to the relationship b/w two variables in a two dimensional space



x ← independent variables  
y ← dependent



$Y \leftarrow$  dependent

Linear regression gives a straight line that best fits  $X$  &  $Y$  datapoints

The equation of the above line  $y = mx + b$   
 $x, y \rightarrow$  data features (cannot be changed)  
 $m \rightarrow$  slope  
 $b \rightarrow$  intercept

Linear Regression can give us multiple <sup>straight</sup> lines with difference in slope & intercepts, the main aim of LR is to fit the optimal line with optimal slope & intercept.

The line that results in the least error is the best fit line

For two variables  $y = mx + b$

for 3 or more variables  $y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \dots$