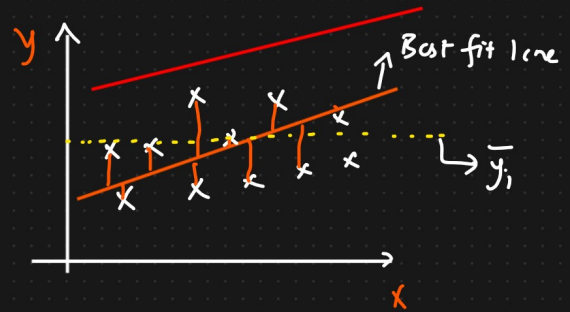


R squared And Adjusted R squared - Linear Regression

$$\textcircled{1} \text{ R squared} = 1 - \frac{SS_{Res}}{SS_{Total}}$$



$$= 1 - \frac{\sum_{i=1}^n (y_i - \hat{y}_i)^2}{\sum_{i=1}^n (y_i - \bar{y})^2}$$

} \Rightarrow small
} \Rightarrow Big

100% {overfitting}

$$= 1 - \frac{0.25 \text{ Small number}}{\text{Big number}} \Rightarrow \text{Small number}$$

$= 0.75 = 75\%$

≈ 1

$$\left\{ \begin{array}{l} 0.70 = 70\% \\ 0.85 = 85\% \end{array} \right\}$$

Adjusted R squared

<u>Dataset</u>			
Gender ↓ ↓ ↓ ↳	Size of house	No. of bedrooms	Price of house ↑ location

$$R^2 = 76\%$$

$$R^2 = 80\% \uparrow \uparrow$$

$$R^2 = 81\% \uparrow \uparrow$$

$$\text{Adjusted R squared} = 1 - \frac{(1 - R^2)(N - 1)}{N - P - 1}$$

$$p=2 \quad R^2 = 76\%$$

$$p=3 \quad R^2 = 78\%$$

$$\text{Adj } R^2 = 72\%$$

$$\text{Adj } R^2 = 70\%$$

$$\text{Adj } R^2 = 74\%$$

N = No. of datapoints

P = No. of independent features

