R-Square & Adjusted R-Squared

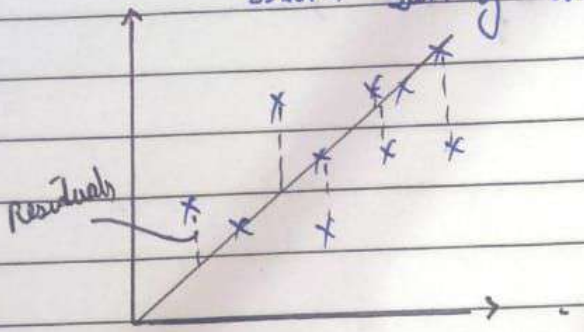
For Regression model, we check accuracy using R^2 & adj R^2 methods.

actual pt → predicted pt

$$R^2 = 1 - \frac{SS_{res}}{SS_{tot}} = 1 - \frac{\sum (y_i - \hat{y}_i)^2}{\sum (y_i - \bar{y})^2}$$

SS_{res} → Sum of Residual & error.

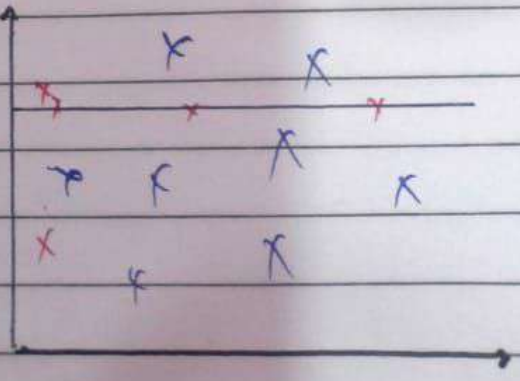
SS_{tot} → Sum of average total.



$0 <$ The value of $R^2 < 1$

Though, if the SS_{total} avg line is worse, it might give Residual value as (less than 0)

R^2 → Used to check goodness of Best fit line.



Increasing no. of features, increases value of R^2.

Adjusted $R^2 = 1 - \frac{(1-R^2)(N-1)}{N-p-1}$

R^2 = Sample R-Square
p = num. of predictors
N = Total Sample size.

∴ R^2 value is increased on increasing no. of indep. features

$\{ R^2_{adj} \leq R^2 \}$