Linear Regression

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Actual = 560
Prediction = 558
In regression problems we can not expect the predicted values to be exactly equal to actual values.
Thus, we can not use accuracy to measure the performance of regression model.(accuracy is not a suitable metric to assess performance of regression model because accuracy is measure of exactness).

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

y_i: Actual, $\hat{y}_i$: Predicted

y = Actual
$\hat{y}$ = predicted
$\bar{y}$ = mean of y

① Predict price of house
$y \rightarrow$ \$100k to \$900k
$E =$ \$2000 →

② Predict price of a pen
$y \rightarrow$ \$2 to \$500
$E =$ \$200 →

R^2 score

$$R^2 = 1 - \frac{MSE}{VAR}$$

$$R^2 = 1 - \frac{\frac{1}{n}\sum(y-\hat{y})^2}{\frac{1}{n}\sum(y-\bar{y})^2}$$