Measure for In-Sample Evaluation

how good the model fit the data

Mean Square Error

R squared R^2

$$R^2 = \left(1 - \frac{\text{MSE of regression line}}{\text{MSE of Data}}\right)$$

lm.score(X, Y) => R^2 in linear regression model

$0 < R^2 < 1$

Prediction and decision making

use good model

lm.fit() -> predict(X)

lm.coef -> check if reasonable

out of range -> the value is unrealistic

Predict the value that make sense

numpy . np

np . arrange (-, -, -) . reshape (-1, 1)

Examing the residual plot to check

MSE the smaller the better ?

R^2 the closer to "1" the better ?

not necessary