

Multiple Linear Regression (MLR) fits a linear model to a single response variable Y as a function of a predictor X in the data.

SLR has the form

$Y = \beta_0 + \beta_1 X_1 + \dots + \beta_P X_P + e$, where e is random error assumed to be normally distributed with 0 mean and a common variance σ^2 : $e \sim N(0, \text{var}=\sigma^2)$

One should always verify that the errors (residuals) are normally distributed; one common statistical test for normality is the Shapiro Test; a graphical verification of normality is the Q-Q plot.

- A. Fit an MLR model to Volume of a tree as a function of the predictors Girth and Height using the datafile **Trees.csv**.
- B. Fit an MLR model to SalePrice as a function of the potential predictors in the datafile **ames.csv**.