CONFIDENCE INTERVALS

95% level of confidence means that if we conducted the same experiment 100 times, 95 of those 100 confidence intervals will contain the true parameter value (for example the true value of β_1)

Estimated value of parameter

$$\hat{\beta}_1 \pm 2 \times SE(\hat{\beta}_1)$$

the spread of $\hat{\beta}_1$

2 approximates a 95% confidence interval

$$SE(\hat{\beta}_1) = \frac{Var(e)}{\sum_{i=1}^{n} (X_i - \bar{X})^2}$$

Variance of error

X_i: value

$\bar{X}$: mean

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