Simple Linear Regression: Inference

Data on 463 courses at UT Austin were obtained to answer the question: "What factors explain differences in instructor teaching evaluation scores?"
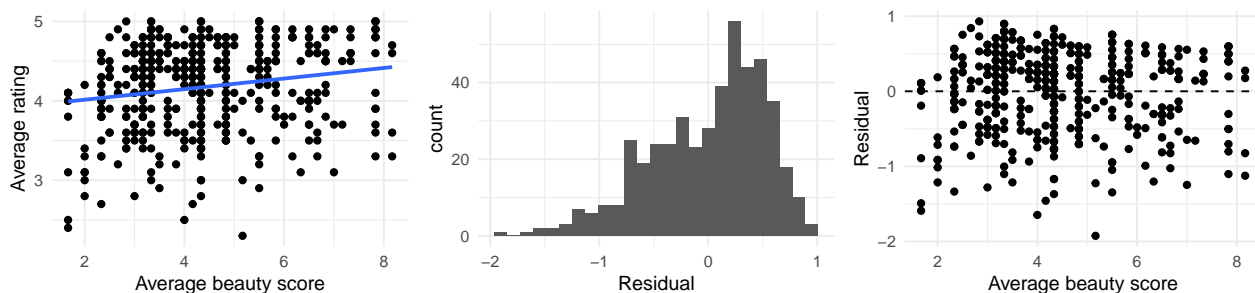
We will look at the variables:

- `score`: course instructor's average teaching score, where average is calculated from all students in that course. Scores ranged from 1-5, with 1 being lowest.

- `bty_avg`: course instructor's average "beauty" score, where average is calculated from six student evaluations of "beauty". Scores ranged from 1-10, with 1 being lowest.

Linear regression model:

Hypothesis test

Hypotheses:

Are conditions for SLR met?

Assuming conditions met...

term	estimate	std.error	statistic	p.value
(Intercept)	3.880	0.076	50.961	0.00000
bty_avg	0.067	0.016	4.090	0.00005

- Fitted model:

- Interpretation of intercept and slope:

Calculate the test-statistic and p-value for the hypotheses:

If instead $H_A : \beta_1 > 0$, what code would you use for p-value?   **If instead $H_A : \beta_1 < 0$, what code would you use for p-value?**

Confidence Interval

Let's obtain a 95% CI for β_1. Assuming conditions for SLR met...

Critical value code:

Construct your interval: