ST2005: Applied Probability II
Lab Assignment 3

The dataset “Power Plant” records variables which the company’s engineers believe are important factors in the operation of the plant. The company is interested in maximising net hourly electrical energy output (recorded as PE in the dataset). For each hour of energy output recorded, other variable “Temperature” (AT) in the range 1.81°C and 37.11°C is recorded.

Steps:

- Run a linear regression model for PE over AT. Record the value for the slope $\widehat{\beta_1}$ and take it as the actual population parameter β_1.

- For 1000 iterations:

    - Take 50 random samples from the dataset. Run the regression model and using the expression for CI for β_1, that we found in the lecture, find a 95% CI for β_1.

- Check what percentage of the CIs generated in the last step would contain the β_1 that you got in the first step.