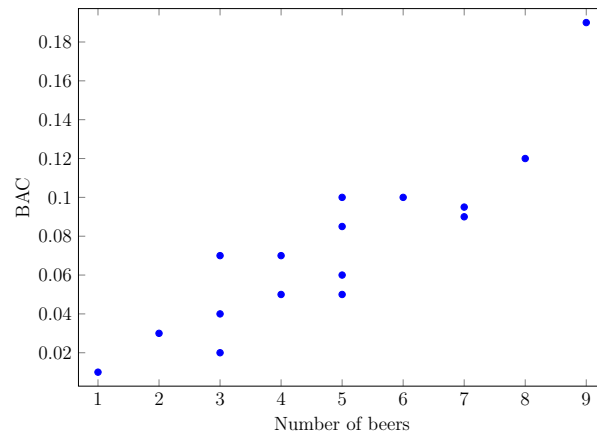


In one example from the Electronic Encyclopedia of Statistical Examples and Exercises (EESSEE), 16 student volunteers at Ohio State University drank a randomly assigned number of beer cans. 30 minutes later, a police officer measured their blood alcohol content (BAC) in grams of alcohol per deciliter of blood. Here are the results, shown in a scatterplot.



In this example, the coefficient of determination is $R^2 = 0.800$ and the formula for the least squares regression line is $y = 0.0180x - 0.0127$.

1. What is the correlation coefficient R ?
2. What is the slope of the regression line and what are its units?
3. The slope above is a statistic based on one sample. To estimate what the true slope would be for the whole population, we can make a confidence interval using the formula

$$m \pm t^* \frac{m\sqrt{1-R^2}}{R\sqrt{n-2}}$$

where the critical t^* value has $n - 2$ degrees of freedom.

Use this to make a 90% confidence interval for the slope of the regression line for the population of all college students.