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Comp 150: Visualization

Assignment 5: Part A & B

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Hypotheses

1. Displaying a larger bar chart will increase accuracy of two elements being compared, compared to a smaller bar chart.
2. Displaying a larger pie chart will increase accuracy of two elements being compared, compared to a smaller pie chart.

Confidence Interval Calculation Method

The code begins with the initialization of variables representing the population mean value, standard deviation, sample size, z value for (**z <- qnorm(.975)** ), the number of times the population mean is captured (**hits <- 0**), the array of sample upper confidence levels (**ucl**), the array of sample lower confidence levels (**lcl**), and the array of sample means (**x**). The code then enters a loop which populates the lower confidence level array by calculating where is the sample mean, is the aforementioned **z**, is the standard deviation, and is the sample size (**lcl[i] <-(x[i]) - z\*sig/sqrt(n)**).This loop populates the upper confidence level in a similar manner (using + instead of -), and increments the **hits** counter by one if the population mean value (**mu**) is within the confidence interval for a given sample (**hits <- hits + (mu <= ucl[i] & lcl[i] <= mu)**). The following section of the code plots, on the output graph, horizontal lines which represent the confidence interval of a particular sample (**lines(c(lcl[i],ucl[i]),c(i,i))**), points on each of those which represent the mean of a particular sample (**points(x[i],i,pch=16,cex=.5,)),** and a vertical line which represents the population mean (**abline(v=mu,lty=2)).**

Error Analysis

Examples of Conditions









