

CSCI 3010U Lab 5 Report

Number of Samples	Value of pi (Run 1)	Value of pi (Run 1)	Value of pi (Average)
100	3.44	3.04	3.24
1000	3.104	3.072	3.088
10000	3.1576	3.14	3.1488
100000	3.14548	3.135	3.14024
1000000	3.143312	3.140936	3.142124
10000000	3.1416912	3.1415432	3.1416172
100000000	3.14163468	3.14181228	3.14172348

To make sure we are getting the right value for pi, we can run the simulation many times and then calculate the standard deviation. If the standard deviation is low, we know that we are getting the right answer. Just from the observations, a higher number of samples would give us more correct values and a lower standard deviation.

I can modify the program to run many times and then calculate standard deviation, and the mean and using the z^* value for the confidence level we want, we can make the program calculate the confidence intervals.