Project 1

Kaiyue Wu

1. Random Number Generators

* 1. Empirical mean: 0.5011609332500776

Empirical standard deviation: 0.29044406111428883

* 1. For the built-in function, I employ ‘‘np.random.uniform’’

Mean: 0.49980737708803497

Stand deviation: 0.2871430218806191

* 1. Both mean and standard deviation from the two methods are very close, means are around 0.5 and standard deviations are around 0.29.

1. The plot is:

Chart, bar chart

Description automatically generated

Empirical mean: 0.2038

Empirical standard deviation: 1.0303715640486202

Chart, histogram

Description automatically generated

The computed probability of x <= 40 is 0.0.

While the probability of x <= 40 get from online calculator is 0.00005

Chart, histogram

Description automatically generated