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SIE431/531 Simulation Modeling and Analysis
Homework 4
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Question 1

Modify book example 4-5 to implement the Monte Carlo Simulation shown in example 2 of the handout. Run your simulation to:

a) create 10000 random points. Estimate the value of pi.

After modifying the book example 4-5 to create 10000 random points by updating the create module to simulate 10000 max arrivals, the estimated value of pi was 3.0891.

b) create 100 million random points. Estimate the value of pi.

After modifying the book example 4-5 to create 10 million random points by updating the create module to simulate 10 million max arrival times, the estimated value of pi was 3.1389.

Question 2

Use the process analyzer to create at least 10 scenarios for Question 1 by altering the number of random points. Generate a plot with one of your favorite software (e.g., Excel, MATLAB, etc.) to show the convergence of the pi value with the increase of random points. Set the x-axis for the number of random points generated and y-axis the estimated pi value.