Project No. 1

ECE 642
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Part I

For preparation, read "Getting started with MATLAB" available at cnl.gmu.edu.

A. Use MATLAB functions to generate 1000 samples of a uniform random number between 0 and 5 and obtain the mean and standard deviation. Also plot the histogram.

B. Do above for 10,000 samples.

C. Now do part A for 10 different seeds and average the means and standard deviations.

Part II

This project is a preamble for the next one dealing with queues. You are to generate 1000 random numbers in $[0, 1]$ and obtain an exponential random variable with mean 5, representing the inter-arrival times of packets to a buffer. Then plot the probability density function of this random variable and determine the mean and variance. Subsequently obtain a Poisson random variable for the number of packet arrivals and plot the probability mass function. Similarly determine the mean and variance.