

Project No. 3

This special project should be done using MATLAB or Octave.

You are to generate N random numbers in the interval $[0, 1]$ and use the transformation technique to obtain various random variables distributions with mean m and standard deviation σ , if applicable. For details please refer to Lecture 9 Annex (Lecture9_ECE528_Annex file sent earlier).

Plot the probability density function of the random variables and determine the mean and variance. The pdfs should be as follows:

- Exponential
- Bernoulli
- Binomial
- Geometric
- Normal
- Rayleigh
- Lognormal

For the Rayleigh, please see the section 5.10 of the textbook (generating independent Gaussian random variables).

Please provide your work as a report starting a new section (on a new page) for each distribution and include the results and the code.