Class – Sim Task 2

Topic Notes link:

https://courses.ncsu.edu/csc591/lec/004/wrap/IntroToProbabilty.pdf

Topics to be covered:

* Pseudo-Random Number Generation
* Basic Probability Theory

First step is to generate pseudo random numbers

any other random number ~ f(x) => random variate

* Exponential
* Theoretical
* Empirical Dist.

xi = a.xi-1 + ß.(mod m)

repeatable period

x0, x1, x2, x3, …

If you control the c you will have control over the random seed. If you cannot control c then the random generation wouldn’t help.

(a.xi-1 + ß)/m = quotient (res)

m = 232

xi = a.xi-1(mod m)

xi = xi-1 + ß(mod m)

x0 = 0, a = 7, ß = 7 and m = 10

x1 = 7(mod 10)

x2 = 7.7 + 7(mod 10) = 56

x3 = 7.6 + 7(mod 10) =

1. Generate pseudo random number, r ≈ (0, 1)
2. Use, r => random variate

**Probability Theory:**

Experiment on Head and Tails

Discrete:

Binomial

Geometric

Bernoulli n trials

* 0 Success, Tails
* 1 Failure, Heads