Spring 2019: CSE 5301
Homework 4

Directions

- The assignment has to be submitted on blackboard (http://elearn.uta.edu)
- The programing part has to be in C, C++, Java, Python 2 or Python 3 and executable from command line with no additional libraries or packages.
    - Recommend that you make program executable on omega (omega.uta.edu)
    - For instructions on connecting to omega: https://omega.uta.edu/~gopikrishnav/classes/2019/spring/5301/win_omega_x.pdf
    - Languages supported by omega C, Java, Python 2.
- Zip all the files for your assignment together into a single archive
    - Include a readme file that shows how to compile/run your program
        - Provide your name and id number in this file
        - Mention what language you used.
        - Give any special order required for compiling the files
        - Include information about where the entry point of the program is
    - Only .zip archives accepted
    - Name the file <net-id>_hw5.zip
    - Contact the instructor or TA if you have any issues creating archives
- **ALL WORK HAS TO BE INDIVIDUAL WORK.**

Written Part: 10.31, 10.36, 10.37

Programming Part: Your program has to generate simulated samples from a giving distribution by using samples generated from a Standard Uniform Distribution (Random Number Generator).

The type of distribution and the parameters are given as command line arguments.

Command line format is

simulateDist <number-of-samples> <distribution> <parameters>

An example of a call would be

simulateDist 5 bernoulli 0.3

Here we want to generate 5 separate samples of bernoulli trials where each trial has a probability of 0.3 of succeeding

The possible arguments (not including number of samples) are

- bernoulli <p>
- binomial <n> <p>
- geometric <p>
- neg-binomial <k> <p>
- poisson <λ>
- arb-discrete $<p_0>$ $<p_1>$ $<p_2>$ … $<p_n>$
- uniform <a> <b>
- exponential <λ>
- gamma <α> <λ>
- normal <μ> <σ>

Note: You will need to seed the random number generator before you start generating numbers. Please clearly comment the line where you do so. If the TA wants to run your program with a different seed he/she should easily be able to do so.