

# CIS 4973/5973 - Parallel Programming

## Assignment 3

Due - 2012.02.15

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Goal: To write a program that will read in an  $n \times n$  matrix from a binary file, and display the matrix to the screen, in some matrix looking form.

Details: Locate the `matrix_generator_BINARY.c` file in the `/Students/_community` directory, and copy it to your own working directory. This will be your starting point.

As of right now, your Supreme Overlords have compiled the `matrix_generator_BINARY.c` C file into the executable `MatGenBIN`. `MatGenBIN` generates a random integer entry matrix, and then saves it to a binary file. This program takes as input two arguments: a single character and a positive integer. For instance, `./MatGenBIN A 10` would create a  $10 \times 10$  matrix in `A10.bin`, with the file being in binary format. Note that since we are using 4-byte integers, `A10.bin` should be exactly 400 bytes. Other generated files will be sized appropriately so you can make sure everything in this area is working correctly by checking the file size.

Now, it is your turn to continue work on the program. Instead of writing a program to write a matrix to a binary file, you should write a program which reads in a matrix from a binary file and displays the contents to the screen. Clearly this is not practical for large matrices, but we will not test it on large matrices.

You are allowed to store the matrix to a 2D array in your program, a 1D array, or you can simply display the contents to the screen, in the correct fashion, without ever using an array variable to store the entire matrix in. You should be able to use the same arguments as the `MatGenBIN` executable for your read program (lets call it `MatReadBIN`), so that `./MatReadBIN B 3` would read in a  $3 \times 3$  matrix from `B3.bin`, and then display its contents.