CMPS 297S/396AA: GPU COMPUTING
ASSIGNMENT 1

In this assignment, you will write a CUDA program that computes the elementwise maximum of two vectors of double precision values. That is, you will compute a vector `c` from two vectors `a` and `b` such that `c[i]` is the maximum of `a[i]` and `b[i]` for all `i`.

Instructions

1. Place the files provided with this assignment in a single directory. The files are:
    - `main.cu`: contains setup and sequential code
    - `kernel.cu`: where you will implement your code (you should only modify this file)
    - `common.h`: for shared declarations across `main.cu` and `kernel.cu`
    - `timer.h`: to assist with timing
    - `Makefile`: used for compilation

2. Edit `kernel.cu` where TODO is indicated to implement the following:
    - Allocate device memory
    - Copy data from the host to the device
    - Configure and invoke the CUDA kernel
    - Copy the results from the device to the host
    - Free device memory
    - Perform the computation in the kernel

3. Compile your code by running: `make`

4. Test your code by running: `./vecmax`
    - If you are using the university cluster, do not forget to use the submission system. Do not run on the head node!
    - For testing on different input sizes, you can provide your own value for the number of vector elements: `./vecmax <M>` (example: `./vecmax 1000000`)

Submission

Submit your modified `kernel.cu` file via Moodle by the due date. Do not submit any other files or compressed folders.