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EC527 Lab 9

Hpcl-10 (2.53 GHz)

**Assignment 9**

**Part I: MMM using global memory only**

Timing:

1K elements:

GPU outer loop time: 71.321854 (msec)  
GPU inner loop time: 66.807617 (msec)  
CPU time: 9097.080078(msec)

2K elements:

GPU outer loop time: 490.746613 (msec)  
GPU inner loop time: 476.247742 (msec)  
CPU time: 77356.093750(msec)

Differences between CPU and GPU:

Max difference = 422212465065984.000000  
Min difference = 0.000000  
Average difference = 32833141735424.000000  
Average = 1159456227666161565696.000000

2K elements:

Max difference = 844424930131968.000000  
Min difference = 0.000000  
Average difference = 65723879653376.000000  
Average = 2353149382649547063296.000000

Tolerance as percentage:

1K elements:

Max Tolerance = 0.000036%  
Min Tolerance = 0.000000%  
Average Tolerance = 0.000003%

2K elements:

Max Tolerance = 0.000036%  
Min Tolerance = 0.000000%  
Average Tolerance = 0.000003%

Array Creation code:



**Part II: MMM using shared memory**

**Part III: MMM using shared memory and loop unrolling**