CUDA Assignments

Marks: 60

Last date of submission: 13th November, 2020 up to 5:00 PM.

1. Parallel implementation of Matrix multiplication using shared memory concept in CUDA.
    a. Plot the graphs of serial and parallel implementation for Matrix multiplication with different size i.e. 1024x1024, 2048x2048, 4096x4096, etc. (Take 10 readings)
    b. Plot the graph of speedup for the above experimentation
2. Implementation of any irregular graph algorithm using CUDA.
    a. Plot the graphs of serial and parallel implementation for 10 graphs with different node size i.e. 5000, 10000, 15000, 20000, 25000, etc. (Take 10 readings)
    b. Plot the graph of speedup for the above experimentation.
3. Big Integer implementation using CUDA for the operations of two big integer's multiplication. Note: Use FFT for the computation of Big integer multiplication.
    a. Plot the graphs of serial and parallel implementation of addition, subtraction, multiplication and division for different bits or digits size i.e. 256-bit, 512-bits, 1024-bits, 2048-bits, etc. (Take 10 readings)
    b. Plot the graph of speedup for the above experimentation