Lab 1 - Report

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Device Query

First, we ask how many devices we have using the cudaGetDeviceCount. Then, we have a for loop which is done as many times as number of devices we have. Each iteration, we get the properties of the device with cudaGetDeviceProperties function and the driver and runtime version using cudaDriverGetVersion and cudaRuntimeGetVersion respectively. Then we print the global memory, the number of cores, clock rate which we get as attributes of a cudaDeviceProp object. Then we write clock rate, bus width and cache size using different functions depending of the version the device has. Then, we get the rest of the atributtes and print them.

Vector Add

We have tested the adding few times using different amounts of elements in the vector. The copy times increase faster than adding time, for example for 50,000 elements adding time took 17% of total test time and for 5,000,000 it took only 3% of total time. When changing the amount of threads, the best option was to use 128 threads per block, no matter the number of elements. The total time was almost the same for 64, 256 and 512 in our tests, no matter the size of the vectors used.