Computational Science on Many-Core Architectures Exercise 2

Example 1 Basic Cuda

a)

Seven different array length from $N = 10, 100, 1000, ...10^7$ and its time for Malloc and Free.

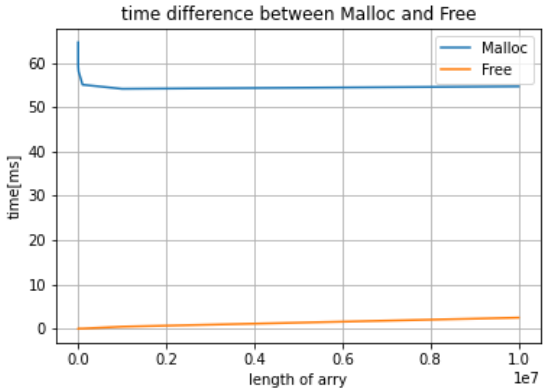

Figure 1: 5 turn

I run the code seven times and document the time results.

Listing 1: code for a)

```
timer.reset();
// Allocate device memory and copy host data over
cudaMalloc(&d_x, N*sizeof(double));
cudaMalloc(&d_y, N*sizeof(double));
printf("a) cudaMalloc_initTime: %g[ms] N = %d\n", 1000*timer.get(),N);
cudaDeviceSynchronize();
timer.reset();
cudaFree(d_x);
cudaFree(d_y);
printf("a) cudaFree_initTime: %g[ms] N = %d\n", 1000*timer.get(),N);
```