Computational Science on Many-Core Architectures Exercise 2

Example 1 Basic Cuda

a)

Seven different array length from $N = 10, 100, 1000, ...10^8$ and its time for Malloc and Free.

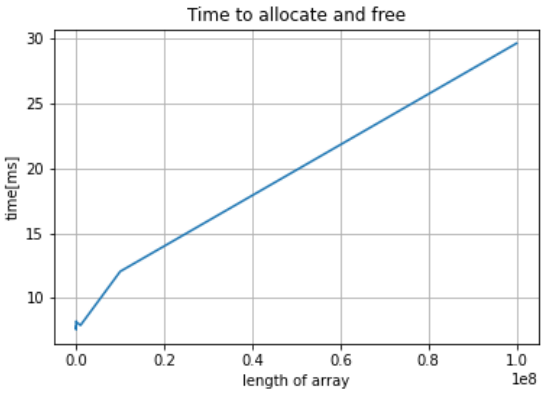

Figure 1: 5 turn

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

Listing 1: code for a)

```
#include <stdio.h>
#include "timer.hpp"


int main(void)
{
//N = [10,100,1000,10000,100000,1000000,10000000]
int N = 10;

double *d_x;
Timer timer;


timer.reset();
for (int i = 0;i < 100; i++)
{
cudaMalloc(&d_x, N*sizeof(double));
cudaFree(d_x);
}
printf("Malloc_Free_Time: %g[ms] N = %d\n", (1000*timer.get())/100,N);

return EXIT_SUCCESS;
}
```