**The following is my proposition to the solution for Assignment #2:**

I’ll use the body of the 10\_time\_measurement kernel file. We need to do the following:

1. **Sum three arrays (add one array to all previous functions). Size is 2^22 this time.**
2. **Use error handling mechanisms (I’ll use it from 9\_error\_checking kernel)**
3. **Use timing measuring mechanisms (I’ll use it from 10\_time\_measurement kernel)**
4. **Measure the execution time of the GPU Implementation (same previous file)**
5. **Extra: Create a table of block sizes and see which one gives the best results (Test at least 5 times)**

Graphical user interface, text, application

Description automatically generatedGraphical user interface, text, application

Description automatically generated I. The addition of the arrays is pretty much straight forward. Add another pointer argument in the kernel and in the CPU function, initialize a new array for both host and device, and add necessary arguments to the kernel initialization:

Text

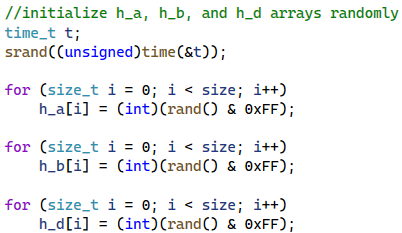
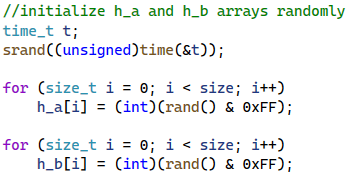
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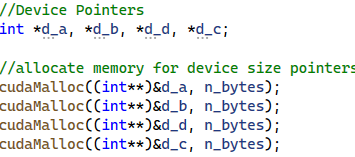
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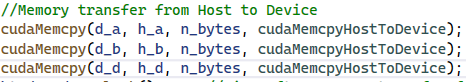




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Description automatically generatedA screenshot of a computer

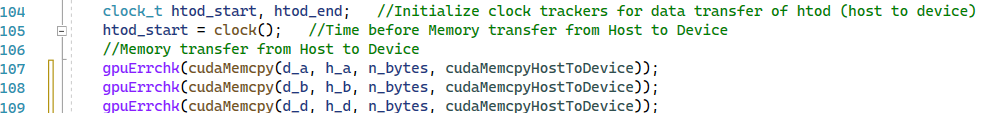
Description automatically generated with medium confidenceII. **The error handling will follow the same method of the error lesson. We will use macro to handle errors.**

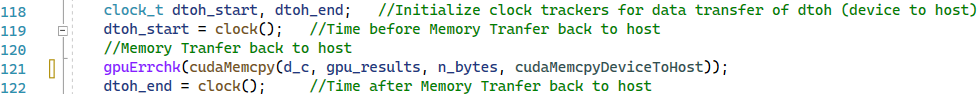
*Note: In my testing, the code bellow always give the following error 🡪*

***Here’s how we solve it: (PD: This was solved too with the 10\_time\_measurement)***

**III. The timing measurements will be implemented from the 10\_time\_measurement**

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Description automatically generated with medium confidencekernel. It will contain the same commands in the same locations as the original one.

**IV. The execution time will be implemented as in the 10\_time\_measurement kernel.**

Here are the results for values 64, 128, 256 and 512:



***V. Because of the previous, the best Block Size for this kernel will be 128.***