Lab Submission System

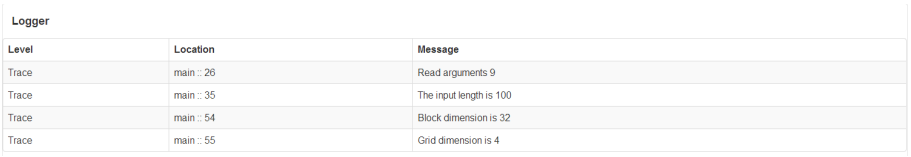
We will be using a web based lab development and submission system through this course. The purpose of this web system is two fold: 1) it allows you to develop CUDA applications without the need to buy and/or setup a CUDA system, and 2) it allows us to grade your more efficiently, uniformly, and promptly. This document describes the online system, walking through the pages that you will see, and describing a sample submission.

Web System

System Flow

Insertion Points

Logging and Debugging



Logger

Level	Location	Message
Trace	main :: 26	Read arguments 9
Trace	main :: 35	The input length is 100
Trace	main :: 54	Block dimension is 32
Trace	main :: 55	Grid dimension is 4

Figure 1: Logging View

Timer

↕ Kind	↕ Elapsed Time (in seconds)	↕ Line	↕ Message
Generic	0.000634308	29	Importing data and creating memory on host
GPU	0.099005559	37	Allocating GPU memory.
GPU	0.00002367	44	Copying input memory to the GPU.
Compute	0.000033975	57	Performing CUDA computation
Copy	0.000016072	63	Copying output memory to the CPU
GPU	0.000076214	68	Freeing GPU Memory

Figure 2: Timing View

Timing Code

Previous Attempts

Walk Through

Behaviors

While developing the labs, you may encounter one or more of the following behaviors.

No Error

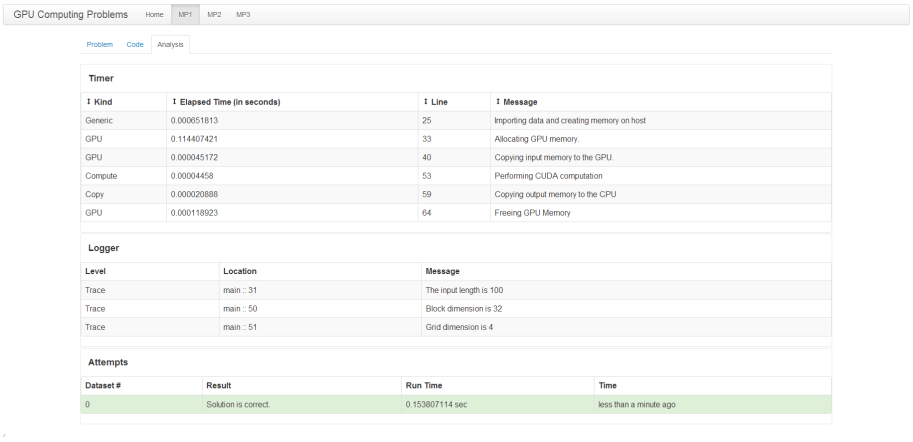


Figure 3: Solution is Correct

This means that no errors were found while running the program. Your program has been checked against the expected solution of the dataset you selected. Note that it might be the case that the program may run correctly on one dataset and not the other.

Solution is Incorrect

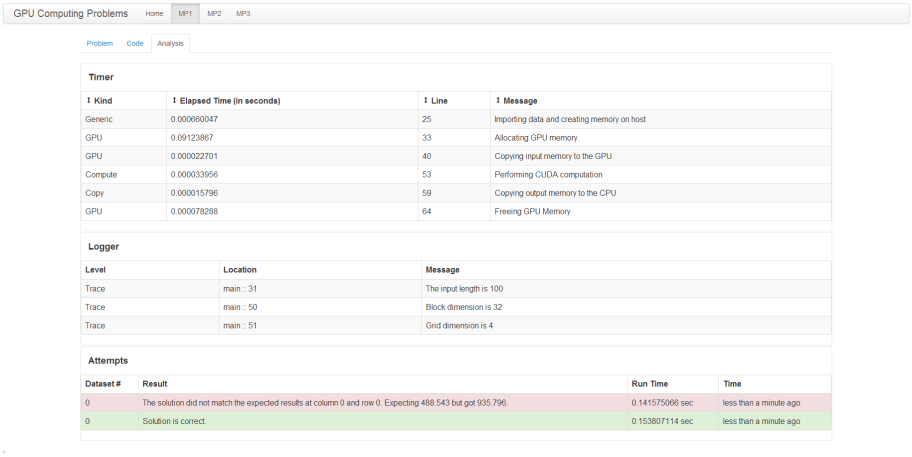


Figure 4: Solution is Incorrect

Compilation Failed

The error message

Program Terminated due to Timeout

The most likely cause of this error is that you have inadvertently placed an infinite loop either in your CPU or GPU code. Part of the reason for this behavior is that the system ensures fairness (i.e. you should not hog down the machine). To ensure fairness, the system is configured to terminate long running processes. When you see this error, you have hit that timeout limit.

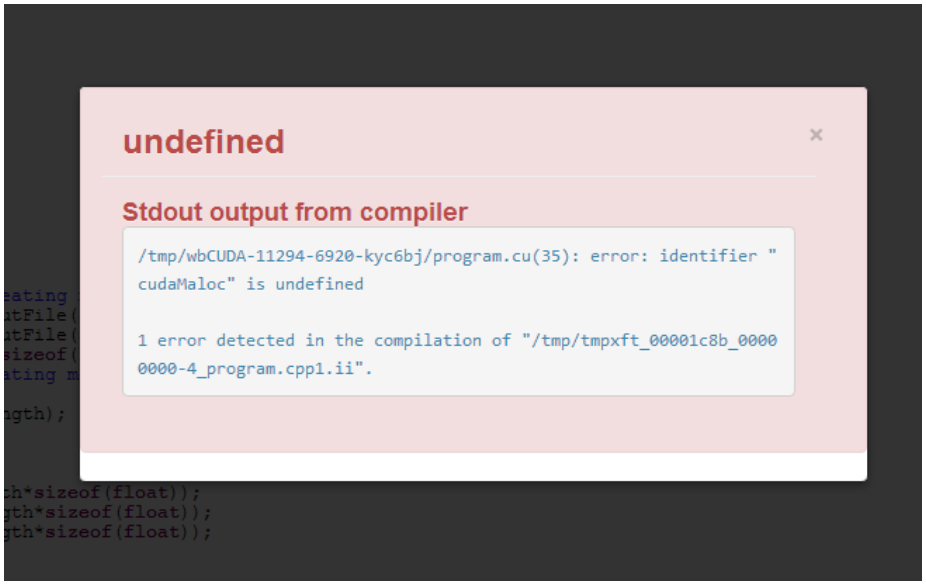


Figure 5: Compilation Failed

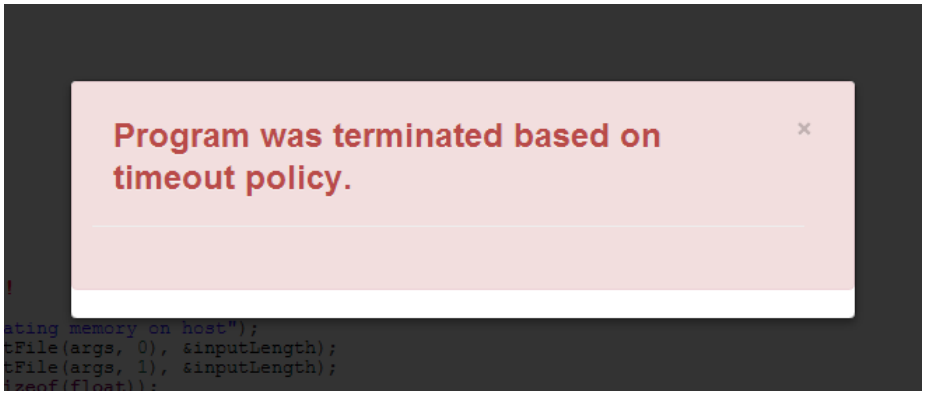


Figure 6: Program Terminated

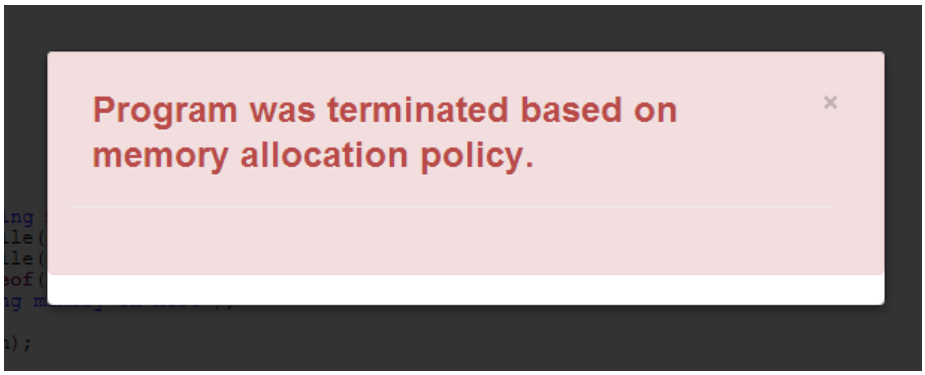


Figure 7: Memory Allocation

Memory Allocation Error

Sandboxing Error

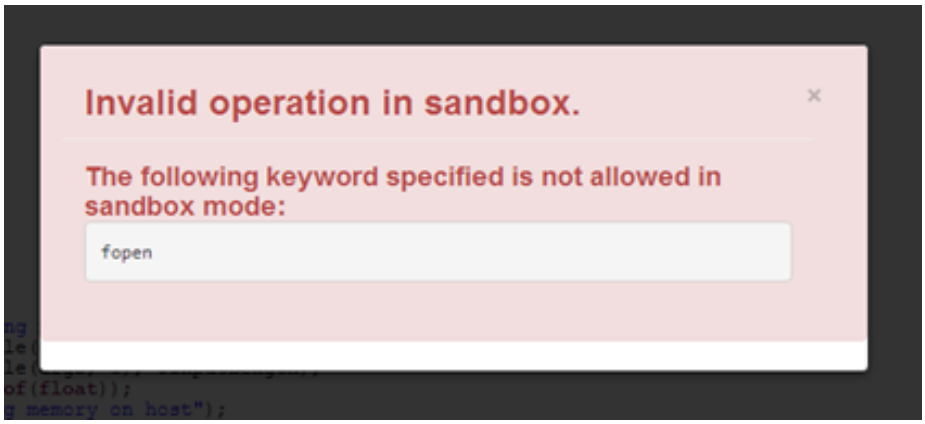


Figure 8: Sandbox Error

Suggestions

Grading

Grading is performed based on criteria that are specific for each lab. Aside from the program submitted compiling and running, we also look at how fast the program is in relation to the other submissions.

System Requirements

A recent web browser is the only requirement for using and submitting labs in this course.