Note: Make sure that CUDA is installed and working. For more information check: Lesson 7.10 Installing and running CUDA

•Exercise 1: Run the given program for atomic addition and analyze the output of with and without atomic function

The program source code is given in atomic_addition.cu

•Exercise 2:

This program is very similar to given example, students just need to use atomicMax method.

The syntax is atomicMax(max,a[thread_id]);

Where max is the global variable to store the max element by all the threads and a is the global array containing the data.

The solution for the program is given in atomic_max.cu

•Write a CUDA program to find the max value in a list using atomicMax

•Create a list of size 900,000 and set the values from 1 to 900,000

•Write a CUDA kernel to find max from the list using simple comparison

- •Eg. Let max = 0, if val> max, max = val

•Write a CUDA kernel to find max from the list using atomicMax

- •Eg. Let max = 0, atomicMax(max,val)

•Check your output to ensure that atomicMax finds the correct max, that is 900,000

Common Pitfalls for Students and Instructors

- Mistakes in proper allocation of memory in CPU and GPU
- Mistakes in writing kernel and using atomic functions
- Students might be confused with using proper number of threads and blocks
- Students might make mistake in copying data from CPU to GPU or vice versa