University of Nevada, Reno

CS 791v: Topics: Parallel Computing
Spring 2015

Programming Assignment 3
Mandelbrot Set

Assigned Date
2/5/2015

Due Date
2/12/2013

Overview

- You will write a program to calculate and output Mandelbrot Sets.
- There is a great tutorial and intro (with most of the sequential code) at the following website: http://warp.povusers.org/Mandelbrot/
- To write the image you may use whatever tool you like. Some example library such as png++ would be good, or you may write out a simple ppm file. A description of the text required for a ppm file and sample ppm files can be found here: http://netpbm.sourceforge.net/doc/ppm.html

Project Requirements

- 2 versions of the code:
  - A compiled and running sequential C program
  - A compiled and running CUDA program
- Multiple timings of runs.
- Appropriate graphs
- Larger Images and a larger MaxIterations will make the run time increase.
  - Use 2,000 x 2,000 pixels for your image with 1024 iterations for your graphs.

Deliverables

- Bring output to class for discussion on the due date.

- Best verifiable performance in class gets bonus points.
  - Optimize, and find best block size, thread count, and strides…

- Have a pdf of your writeup and a zip of your source code emailed to Fred Harris and Lee Barford (DO NOT send binaries).
  - Firstname dot Lastname at … (Fred is cse, Lee is gmail)