ME759
High Performance Computing for Engineering Applications

Date Assigned: October 14, 2013
Date Due: October 21, 2013
Cutoff Time: 11:59 PM

In this problem, you will have to produce a version V5 and a version V6 of the 1D Stencil code that we used in class. To this end, start with the **`testV4.cu`** version provided in HW directory.

`testV5.cu`: Use shared memory to speed up your execution.
`testV6.cu`: Builds on top of V5 and reduces the run time by considering pinned host memory transactions.

What you will have to deliver:

a) Run a scaling analysis using N=10^3, 10^4, 10^5, …10^8 elements and generate a **`png`** plot that shows GPU-V5 performance against CPU performance. Upload this plot onto the Forum.
b) The same as above, but shows GPU-V6 performance against CPU performance
c) Generate a png plot that shows the GPU-V5 performance against GPU-V6 performance.
d) What change has had more impact? Why is that the case?

Grading.
Your submission will be graded as follows:
i) Functionality: 40%

- Program runs on Euler, producing correct results.

ii) Report: 60%

- You provide correct results for a) through d) above.