

Problem set 7

TDT4200, Fall 2016

Deadline: 23.11.2016 at 20.00 Contact course staff if you cannot meet the deadline.

Evaluation: This assignment is optional.

Delivery: Use It's Learning. Deliver exactly two files:

- *yourusername_ps7.pdf*, with answers to the theory questions
- *yourusername_ps7.{zip | tar.gz | tar}* containing your solution to the programming tasks.

General notes: All problem sets are to be done **INDIVIDUALLY**. Code must compile and run on course servers. Do not add third party code or libraries.

Part 1, Theory

Problem 1

- Mention some key differences between CUDA and OpenCL (beyond naming differences).
- What is the equivalent OpenCL terms for the following CUDA terms:
 - *thread block*
 - *thread*
 - *shared memory*
 - *local memory*
- Explain why there is no equivalent OpenCL term for the CUDA/Nvidia term *warp*

Part 2, Code

Problem 1

Complete the code in *mandel.c* and *mandel.cl* to implement a GPU parallelized version of the Mandelbrot computation using OpenCL.

Further details can be found in the recitation slides for this problem set.