

Problem set 5

TDT4200, Fall 2016

Deadline: 2.11.2016 at 20.00 Contact course staff if you cannot meet the deadline.

Evaluation: Pass/Fail

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

- *yourusername_ps5.pdf*, with answers to the theory questions
- *yourusername_ps5.{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

- Briefly explain the difference between the architecture of CPUs and GPUs.
- Explain the difference between a thread-block and a warp.
- What is thread divergence?

Problem 2

Mention and briefly explain each of the logical CUDA memory spaces.

Part 2, Code

Problem 1

Complete the code in *mandel_cuda.cu* to implement a GPU parallelized version of the Mandelbrot computation using CUDA.

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