Assigment 3
CUDA

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Outline

- Implement RoadMap and RaceTrap in CUDA

Hardware

- ifilab110-ifilab123 in the student lab
  - Ssh -X lgserv3.stud.cs.uit.no
  - Labstat
  - Ssh -X ifilabXYZ (in the 110-123 range, running linux)
- Nvidia Quadro 600

Assignment

- Implement RoadMap and RaceTrap on CUDA
- Use existing pre-code/your own code
- Modify to use the GPU

Specifics - RoadMap

- Simple to parallelize in CUDA
- Make sure you test for correctness
- Increase zoom levels and resolution

Specifics - RaceTrap

- Less simple to parallelize
  - Recursion
  - Number of execution stages not known at compile time
- Ideas
  - Get rid of (some of) the recursion
  - Partial breadth-first → depth-first

Compiling

- Use nvcc
- -arch sm_20
- Nvidia visual profiler

Notes

- Start with RoadMap! Less complicated to port
- Read the documentation (developer.nvidia.com)
- Compile with -arch sm_20 if you want to use recursion in __device__ functions

Deadlines

- Same procedure as the previous assignments
- Presentations November 14th and 15th
- Final report due November 15th
- Finish on time!

Good luck!