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| Coursework Report |
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| This report sets out how a given C++ application was optimized using various optimization techniques and the GPU API CUDA. |
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# Quick Analysis

Double iteration

Sequential

Redundant row vector

# Benchmark

To better understand the scale of the challenge I benchmarked the given code with all optimizations on. The benchmarking was made possible with a small function I personal wrote that times a function call and outputs it to a CSV file for viewing. To ensure benchmarking was thorough I tested the program through several test sets.

* Extra Small– 256x256
* Small – – 512x512
* Medium – 1024x1024
* Large – 4096x4096

As we can see from the above tables this code does not scale well when it comes to big image sizes.

# Profiling

Hypot comes up in the profiler

Map colour

Iteration

# CUDA Port

Explain concept

# Initial Benchmarks

# Refinement

Block and thread size

# Conclusion