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CST407 – Threads

Lab 01

# Intel Compiler Settings

The purpose of this lab is to build a raytracing program using the intel compiler. The program has been provided by Jim Long. In order for optimizations to take effect, the program must be built by the intel compiler in release mode.

# Data

|  |  |
| --- | --- |
| **Optimization Used** | **Time to Render (seconds)** |
| No Optimization (/Od) | 6.954 |
| Loop Centric (/O3) | 5.1 |
| Inter-Procedural Optimization(/Qipo) | 3.89 |
| Vectorization (/QxP) | 5.032 |
| Options Disabled (/O3 /QxP /Qipo) | 4.187 |

# Conclusion

The builds revealed varying strengths and weaknesses in the different optimizations. Using no optimization as the control unit for comparison, the best build was the result of Inter-Procedural Optimization. From what I understand about the optimization, since this build used multiple files and libraries, the optimization was allowed to show off its power as it is meant for speeding up programs split up into libraries and/or files. The others showed improvement to the control unit but the details that explain the improvement more than likely need to be pointed out in the code. An example of this would be looking at what loops exist in the code that the Loop Centric optimization would pick up and optimize, resulting in the explanation for improvement.