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Threaded Programming Coursework Part 2

Exam number B136013

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1 Introduction

What is the project? implement an alternative loop scheduling algo- rithm in OpenMP. Affinity scheduling

2 Project Specification

2.1 Description

Description of scheduling

2.2 Terminology

chunk: a contiguous, non-empty subset of the iterations of a loop chunksize: local set: most loaded:

3 Analysis

3.1 Tools

Programming language: C compile the code with the -O3 option Build tools

3.2 Design

data structures: (without reference to the source code)

3.3 Syncronization

syncronization handling no race conditions

4 Evaluation

1, 2, 4, 6, 8, 12 and 16 threads compare results speedup

4.1 Loop 1

4.2 Loop 2

5 Conclusion

In conclusion the decision about scheduling selection and number of threads that need to be deployed is not an obvious choice. It always depends on the problem and how the work load is distributed between iterations. Analysis and measurements using different configuration options will guide the developer on what is the best approach of solving a problem effiently.