COMP 429/529: Project 1

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1 Part I: Image Blurring

To determine the atomic weight of magnesium via its reaction with oxygen and to study the stoichiometry of the reaction (as defined in **??**):

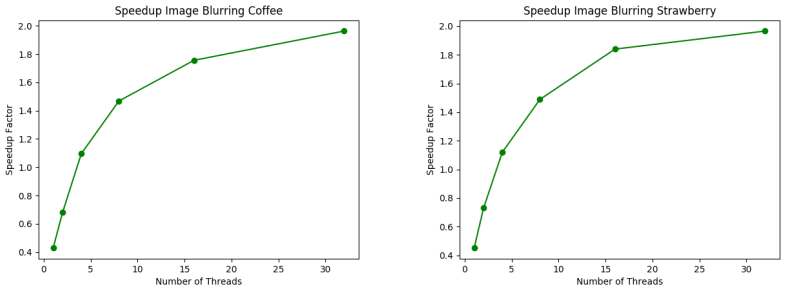
1.1 Stability Test

Serial version execution time:

Paralel version with single thread execution time: The

Which thread number gives best performance? 32 thread count gives best performance for both blurring applications.

Results



(a) Results for the blurring on coffee image.

(b) Results for the blurring on strawberry image.

Figure 1: Speedup figures for image blurring application

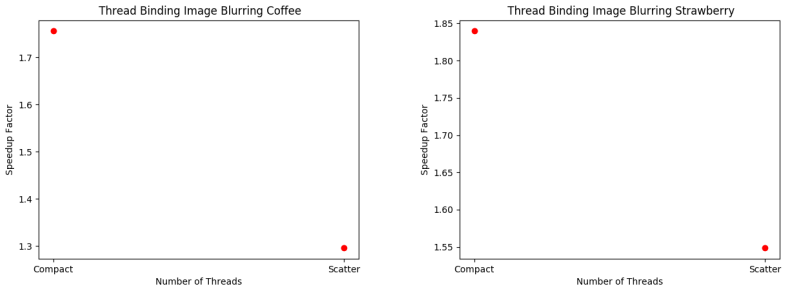
EXPLAIN SPEEDUP CURVE
asfsadfasdf sadf fasdfasdfa

1.2 Thread Binding Test

a

Different mapping strategies; Compact and Scatter

Results



(a) Results for the blurring on coffee image.

(b) Results for the blurring on strawberry image.

Figure 2: Speedup figures for image blurring application

WHICH MAPPING GIVES BETTER PERFORMANCE, WHY ?

2 PART II: Parallel Sudoku Solver

Mass of empty crucible

2.1 Scalability Test

2.1.1 Part A

Serial version execution time:

Paralel version with single thread execution time:

Which thread number gives best performance? The

Results

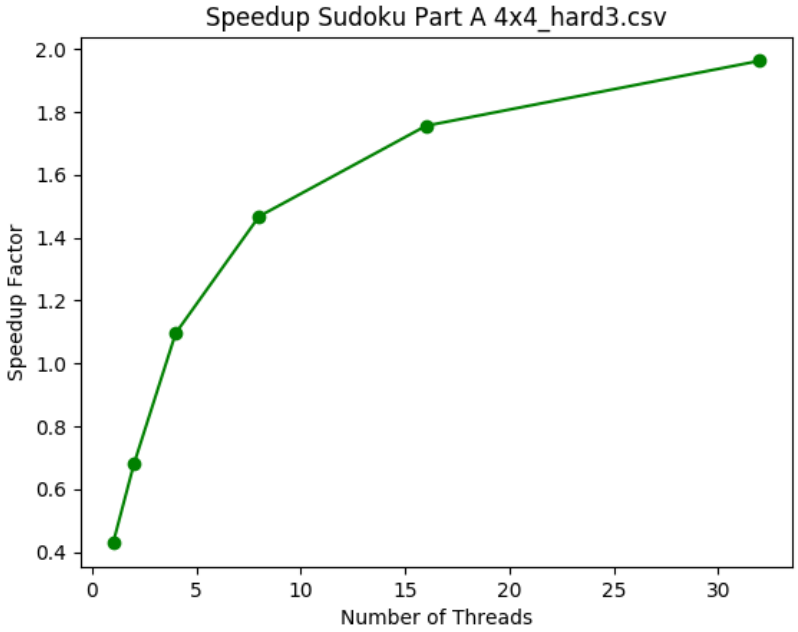


Figure 3: Results for the Sudoku 4x4hard3 using algorithm in.

2.1.2 Part B

Serial version execution time:

Paralel version with single thread execution time:

Which thread number gives best performance? The

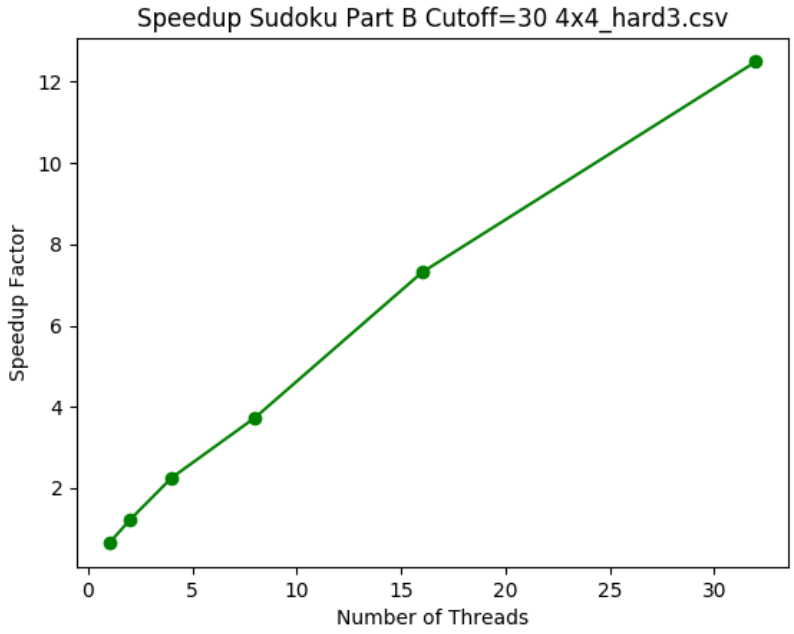


Figure 4: Results for the blurring on strawberry image.

2.1.3 Part C

Serial version execution time:

Paralel version with single thread execution time:

Which thread number gives best performance? The

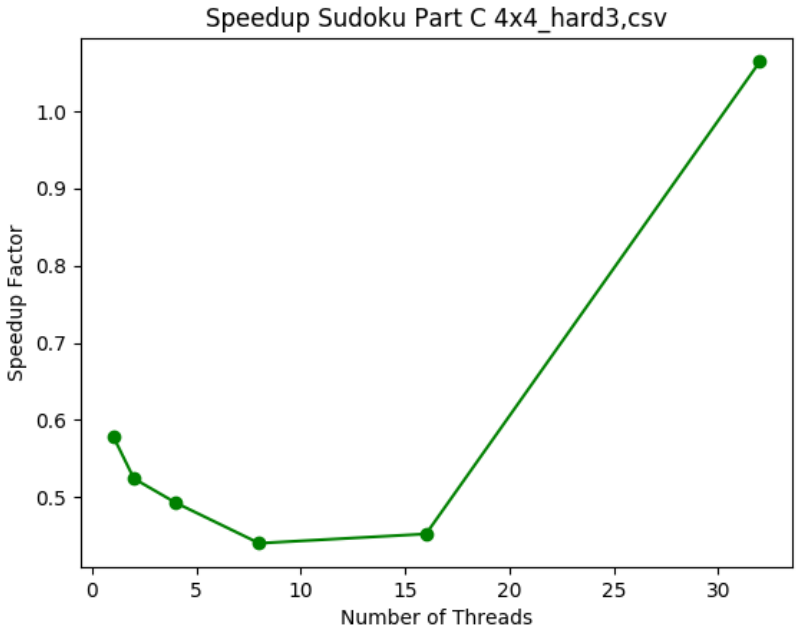


Figure 5: Results for the blurring on strawberry image.

2.2 Thread Binding Test

2.2.1 Part A

Different mapping strategies; Compact and Scatter

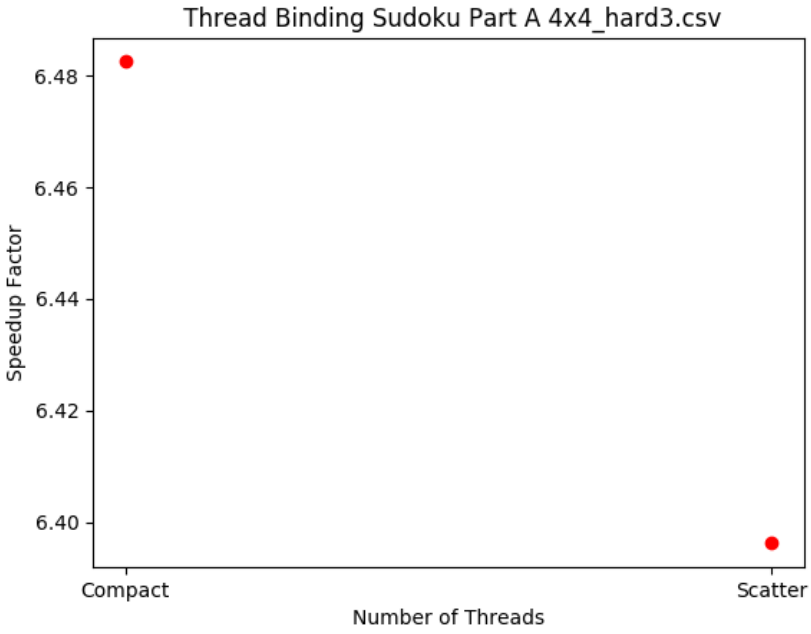


Figure 6: Results for the blurring on strawberry image.

2.2.2 Part B

Different mapping strategies; Compact and Scatter

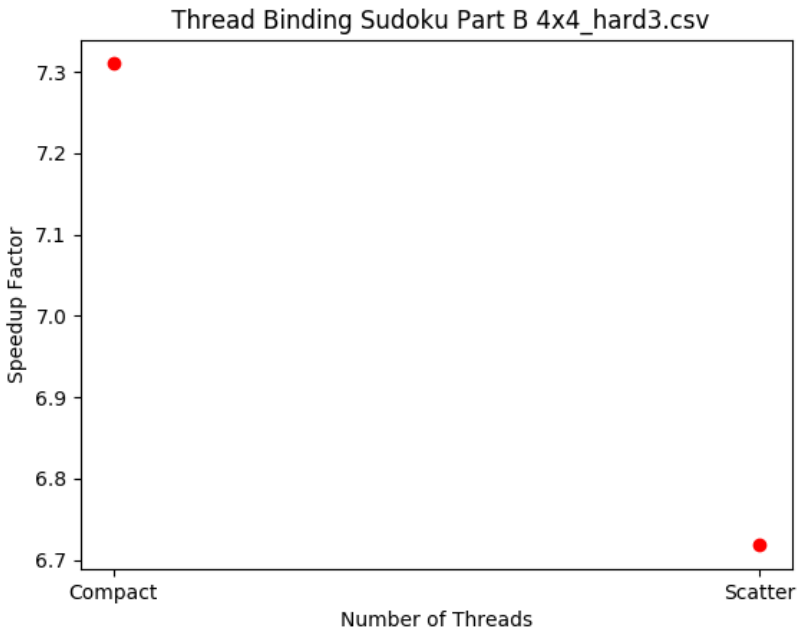


Figure 7: Results for the blurring on strawberry image.

2.2.3 Part C

Different mapping strategies; Compact and Scatter

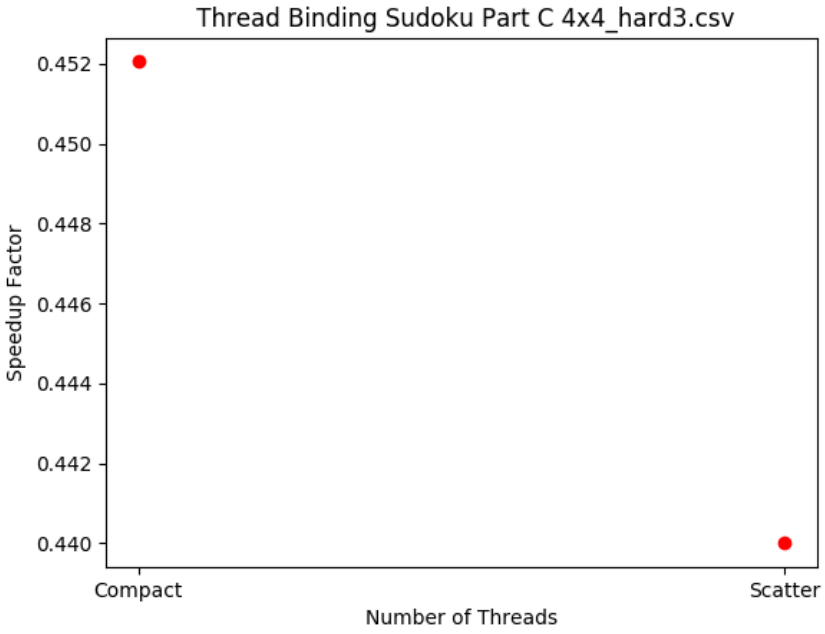


Figure 8: Results for the blurring on strawberry image.

2.3 Tests on Sudoku Problems of Different Grids

Part-B

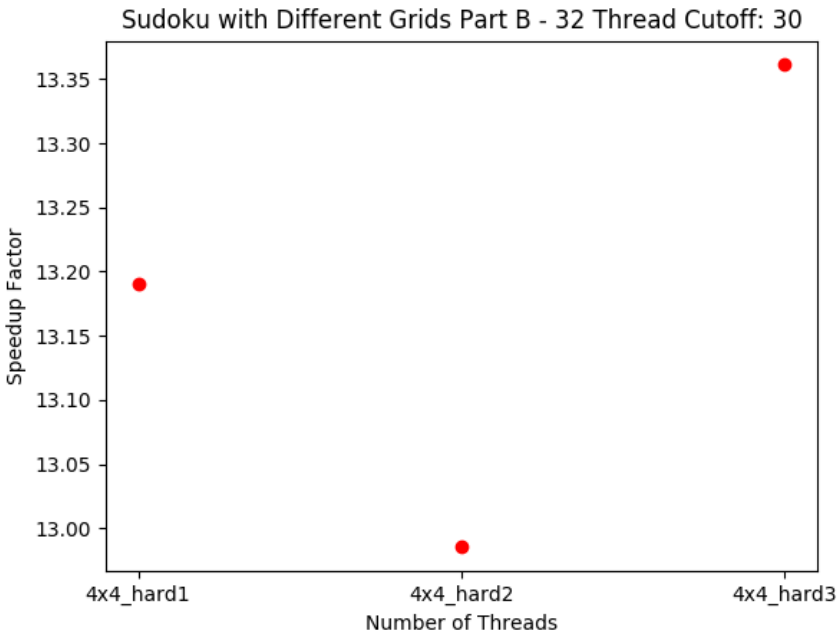


Figure 9: Results for the 32 Thread Parallel Sudoku solver in Part with different sizes and difficulties.

3 Formulas Used

a. *Speedup*

$$\frac{\mathrm{T1}}{\mathrm{Tp}}$$