Susan Liu

933237062

CS 475

Professor Bailey

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Assignment 4

1. What machine you ran this on

I ran this on Rabbit

1. Show the table of performances for each array size and the corresponding speedups

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1000 | 10000 | 100000 | 500000 | 1000000 | 2000000 | 4000000 | 8000000 |
| Reduction: | 7.11326 | 9.11448 | 8.69251 | 8.85869 | 8.76899 | 8.61364 | 7.65526 | 7.59855 |
| SIMD | 0.29643 | 0.71184 | 0.77154 | 0.97315 | 1.42988 | 1.85435 | 2.00207 | 2.05486 |

1. Show the graph of SIMD/non-SIMD speedup versus array size (one curve only)
2. What patterns are you seeing in the speedups?

As the array size increases the speedup increases for SIMD, but for reduction it increased before slightly decreasing and leveling out.

1. Are they consistent across a variety of array sizes? Why or why not, do you think?

For SIMD the speedup was pretty constant while for Reduction there was a slight spike in speed up which I found this quite strange. However, when I looked at the uptime I noticed that one user had joined which could have caused the slight spike in the reduction speed up. The reason I think that the speedup for SIMD increased as the array size increased is because it took up more memory when the array size increased which caused the speed up to increase.