CS 581: High Performance Computing
Emory University
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Prof. Tianshi Xu

Homework # 1

Mitchell Scott
(mtscot4)

1 Environment

1. **List the environment you used to run the code (Operating System, CPU, RAM, etc.)** .

   Solution. The local environment where I was running the code was on a 2022 MacBook Pro with Apple M2 chip, 8 GB of RAM running macOS Ventura 13.3.

2 Sequential Code

1. The performance accuracy for all code variants was **98.14%**.
2. Below, you can see the table for my sequential code:

Trial	Time (ms)
1	3247
2	3268
3	3288 (**high**)
4	3238 (**low**)
5	3273
Avg	3262.7

Table 1

3 OpenMP

1.
2.

4 Pthreads

1. item

Trial	1 thread (ms)	2 thread (ms)	4 thread (ms)	8 thread (ms)
1	3399	1768	1015	710
2	3555 (**high**)	1837 (**high**)	924	708
3	3397	1770	917 (**low**)	708
4	3407	1765 (**low**)	1035 (**high**)	702 (**low**)
5	3391 (**low**)	1797	918	745 (**high**)
Avg	3401	1778.3	952.3	708.7

Table 2

Trial	1 thread (ms)	2 thread (ms)	4 thread (ms)	8 thread (ms)
1				
2				
3				
4				
5				
Avg				

Table 3

5 Implimentation

1.

Acknowledgements

I would like to acknowledge that I worked with fellow CS 524 students