

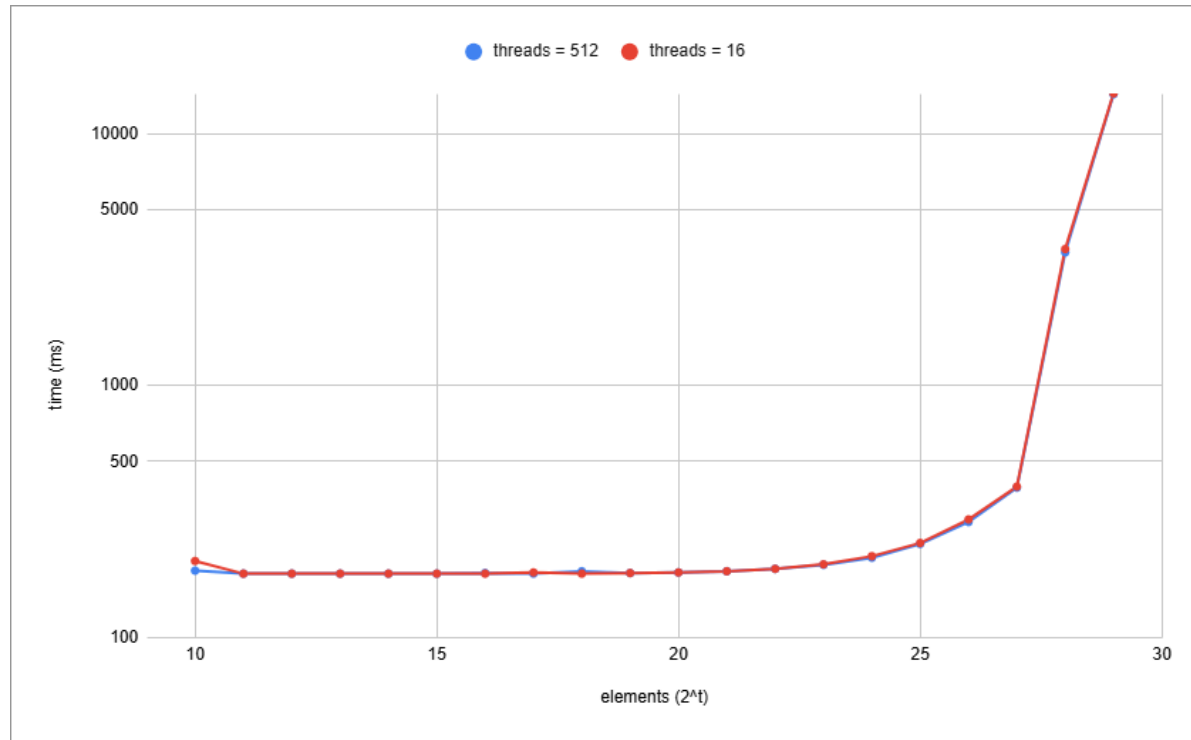
Leah Blasczyk

HW05

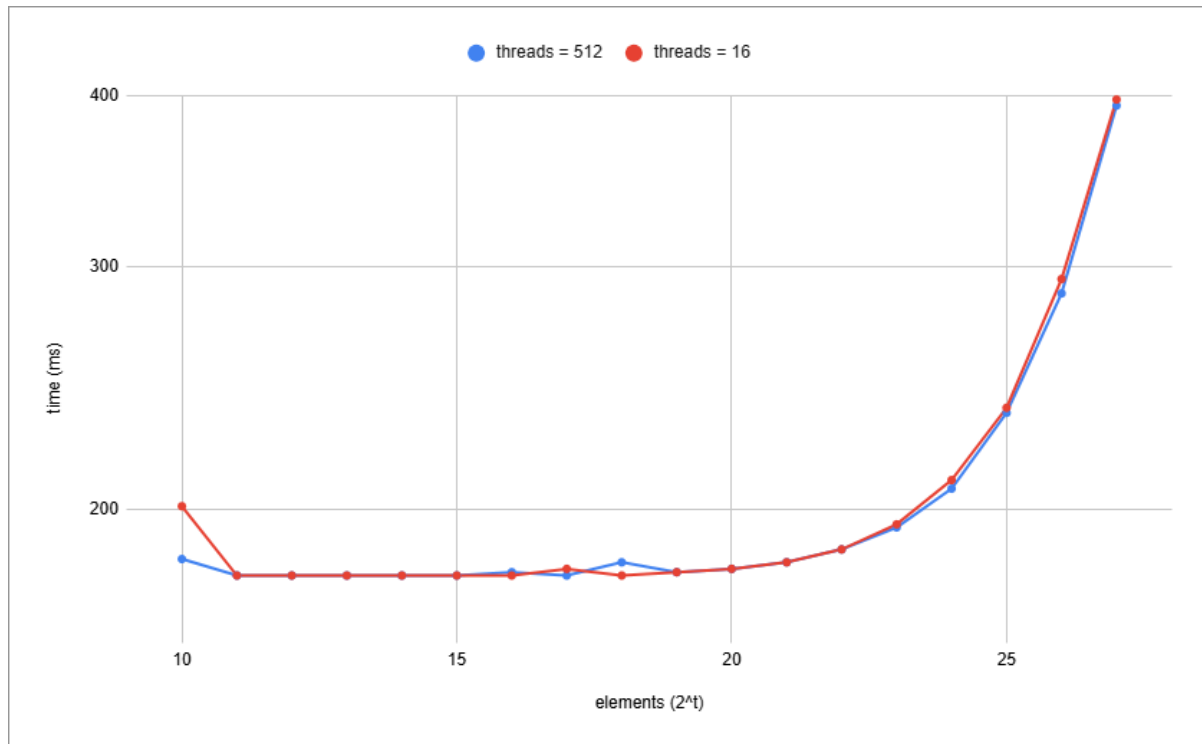
GitHub Username: **Leberra**

(Assignment 5 Path: <https://github.com/Leberra/repo759/tree/main/HW05>)

Here is my graph for task3:



Here is the same data excluding when elements = 2^{28} & 2^{29} (because it is hard to see on the other one)



The rest of this doc is a list of my outputs from task3 with 512 and 16 threads.

Threads = 512 output:

Tue Nov 5 06:43:30 PM CST 2024

Results:

element count: 1024
 blocks: 2
 time to process: 184 milliseconds
 first element: -2.41376
 last element: 4.19639

Results:

element count: 2048
 blocks: 4
 time to process: 179 milliseconds
 first element: -2.34986
 last element: 0.268241

Results:

element count: 4096

blocks: 8
time to process: 179 milliseconds
first element: 2.91522
last element: -0.0589217

Results:
element count: 8192
blocks: 16
time to process: 179 milliseconds
first element: 1.7072
last element: -0.257369

Results:
element count: 16384
blocks: 32
time to process: 179 milliseconds
first element: -3.07887
last element: 2.98331

Results:
element count: 32768
blocks: 64
time to process: 179 milliseconds
first element: -3.62585
last element: 2.17366

Results:
element count: 65536
blocks: 128
time to process: 180 milliseconds
first element: 1.3116
last element: 0.142704

Results:
element count: 131072
blocks: 256
time to process: 179 milliseconds

first element: 6.22726
last element: 1.48621

Results:

element count: 262144
blocks: 512
time to process: 183 milliseconds
first element: 4.86414
last element: 0.28359

Results:

element count: 524288
blocks: 1024
time to process: 180 milliseconds
first element: 3.87549
last element: -0.48622

Results:

element count: 1048576
blocks: 2048
time to process: 181 milliseconds
first element: 2.61785
last element: -1.23588

Results:

element count: 2097152
blocks: 4096
time to process: 183 milliseconds
first element: -1.94757
last element: 0.0388692

Results:

element count: 4194304
blocks: 8192
time to process: 187 milliseconds
first element: 0.205509
last element: -1.82149

Results:

element count: 8388608
blocks: 16384
time to process: 194 milliseconds
first element: 0.145162
last element: 4.06018

Results:

element count: 16777216
blocks: 32768
time to process: 207 milliseconds
first element: 7.339
last element: 3.91386

Results:

element count: 33554432
blocks: 65536
time to process: 235 milliseconds
first element: 0.713088
last element: -1.61407

Results:

element count: 67108864
blocks: 131072
time to process: 287 milliseconds
first element: -0.911076
last element: -1.81655

Results:

element count: 134217728
blocks: 262144
time to process: 393 milliseconds
first element: -6.0781
last element: -1.13949

Results:

element count: 268435456

blocks: 524288

time to process: 3385 milliseconds

first element: -0.482401

last element: 4.31271

Results:

element count: 536870912

blocks: 1048576

time to process: 14388 milliseconds

first element: 0.536282

last element: -1.35614

Threads = 16 output:

Tue Nov 5 06:45:22 PM CST 2024

Results:

element count: 1024
blocks: 64
time to process: 201 milliseconds
first element: -1.28364
last element: 6.60873

Results:

element count: 2048
blocks: 128
time to process: 179 milliseconds
first element: -2.00457
last element: 0.804192

Results:

element count: 4096
blocks: 256
time to process: 179 milliseconds
first element: -6.06362
last element: 0.0798444

Results:

element count: 8192
blocks: 512
time to process: 179 milliseconds
first element: -2.14526
last element: -1.37489

Results:

element count: 16384
blocks: 1024
time to process: 179 milliseconds
first element: 6.17486
last element: -5.14161

Results:

element count: 32768
blocks: 2048
time to process: 179 milliseconds
first element: 1.37459
last element: -1.52148

Results:

element count: 65536
blocks: 4096
time to process: 179 milliseconds
first element: 7.66931
last element: -2.20247

Results:

element count: 131072
blocks: 8192
time to process: 181 milliseconds
first element: -2.33478
last element: -5.62303

Results:

element count: 262144
blocks: 16384
time to process: 179 milliseconds
first element: 2.31932
last element: 7.21128

Results:

element count: 524288
blocks: 32768
time to process: 180 milliseconds
first element: -2.00302
last element: 1.24772

Results:

element count: 1048576
blocks: 65536
time to process: 181 milliseconds
first element: -4.83643
last element: 6.38076

Results:

element count: 2097152
blocks: 131072
time to process: 183 milliseconds
first element: -0.172307
last element: 4.71478

Results:

element count: 4194304
blocks: 262144
time to process: 187 milliseconds
first element: 7.2717
last element: -0.102498

Results:

element count: 8388608
blocks: 524288
time to process: 195 milliseconds
first element: -0.970164
last element: 1.042

Results:

element count: 16777216
blocks: 1048576
time to process: 210 milliseconds
first element: -2.90889
last element: 0.981038

Results:

element count: 33554432
blocks: 2097152

time to process: 237 milliseconds
first element: -2.27842
last element: 0.691281

Results:

element count: 67108864
blocks: 4194304
time to process: 294 milliseconds
first element: -7.59609
last element: -0.193342

Results:

element count: 134217728
blocks: 8388608
time to process: 397 milliseconds
first element: 1.76158
last element: 4.89709

Results:

element count: 268435456
blocks: 16777216
time to process: 3489 milliseconds
first element: -6.5958
last element: 2.42913

Results:

element count: 536870912
blocks: 33554432
time to process: 14490 milliseconds
first element: -1.85249
last element: 1.06491