Cmps 270 – report done by Rahaf Rammal

Lenovo ideapad 3 Intel(R) Core(TM) i7-10510U CPU @ 1.80GHz 2.30 GHz 64-bit operating system, x64-based processor Windows 10 Pro

//table for the race condition

|  |  |  |  |
| --- | --- | --- | --- |
| Threads | Time | Array-Size | How many ones are found |
| 1 | 0.000127 | 100 | 1 |
| 1 | 0.000107 | 100 | 1 |
| 2 | 0.000164 | 100 | 1 |
| 2 | 0.000221 | 100 | 1 |
| 4 | 0.000485 | 100 | 2 |
| 4 | 0.000224 | 100 | 2 |
| 4 | 0.000274 | 100 | 1 |
| 4 | 0.000223 | 1000 | 1 |
| 4 | 0.000315 | 1000 | 1 |
| 4 | 0.000226 | 1000 | 1 |
| 4 | 0.000278 | 1000 | 1 |
| 4 | 0.000395 | 10000 | 1 |
| 4 | 0.000245 | 10000 | 1 |
| 4 | 0.000374 | 10000 | 1 |
| 4 | 0.000215 | 10000 | 1 |
| 4 | 0.000235 | 10000 | 1 |
| 6 | 0.000264 | 100000 | 1 |
| 6 | 0.000246 | 100000 | 2 |
| 6 | 0.000375 | 100000 | 3 |
| 6 | 0.000284 | 100000 | 1 |
| 6 | 0.000419 | 100000 | 1 |
| 6 | 0.000311 | 100000 | 1 |
| 6 | 0.000342 | 100 | 1 |
| 6 | 0.000310 | 100 | 2 |
| 6 | 0.003311 | 100 | 1 |
| 8 | error | 1000000000000 |  |
| 8 | error | 1000000000000 |  |
| 8 | error | 1000000000000 |  |

Threads and time

//table for count\_private :

|  |  |  |  |
| --- | --- | --- | --- |
| THREADS | Time | Array size | Nbr of ones |
| 1 | 0.000211 | 100 | 1 |
| 1 | 0.000177 | 100 | 1 |
| 2 | 0.000155 | 100 | 2 |
| 2 | 0.000145 | 1000 | 2 |
| 2 | 0.000212 | 1000 | 2 |
| 2 | 0.000152 | 1000 | 2 |
| 4 | 0.000154 | 10000 | 2 |
| 4 | 0.000250 | 100 | 4 |
| 4 | 0.000152 | 100 | 4 |
| 4 | 0.000241 | 100000 | 4 |
| 6 | 0.000415 | 10000 | 6 |
| 6 | 0.000356 | 100 | 6 |
| 6 | 0.000235 | 100000 | 6 |
| 6 | 0.000485 | 10000000 | 6 |
| 2 | Error | 1000000000 |  |
| 4 | Error | 10000000000 |  |

Time vs threads

//table for the mutex

|  |  |  |  |
| --- | --- | --- | --- |
| threads | time | Array size | Nbr of ones |
| 1 | 0.000136 | 100 | 1 |
| 1 | 0.000154 | 100 | 1 |
| 2 | 0.000215 | 1000 | 1 |
| 2 | 0.000269 | 1000 | 1 |
| 2 | 0.000164 | 10000 | 1 |
| 4 | 0.000297 | 10000 | 1 |
| 4 | 0.000266 | 1000000 | 1 |
| 4 | 0.000273 | 1000000 | 1 |
| 4 | 0.000311 | 1000000 | 1 |
| 6 | 0.000345 | 100 | 1 |
| 6 | Error | 1000000000 |  |
| 6 | Error | 10000000000000 |  |
| 6 | 0.000377 | 1000 | 2 |

Time vs threads