Table 1 N = 10,000

|  |  |  |
| --- | --- | --- |
| Threads | Time taken | Speedup |
| 1 | 0.398998 | NA |
| 2 | 0.243815 | 1.636 |
| 5 | 0.088112 | 4.527 |
| 10 | 0.056717 | 7.033 |
| 20 | 0.046980 | 8.491 |
| 100 | 0.027932 | 14.28 |

Table 2 N = 100,000

|  |  |  |
| --- | --- | --- |
| Threads | Time taken | Speedup |
| 1 | 41.790624 | NA |
| 2 | 22.138633 | 1.888 |
| 5 | 8.573802 | 4.874 |
| 10 | 4.655213 | 8.977 |
| 20 | 2.443587 | 17.102 |
| 100 | 0.933565 | 44.765 |

#pragma omp critical

result[j] = -1;

This section stalled the threads running in parallel for synchronization purposes. However, it was a necessary block because all the threads depend on each other for any value alterings in this shared resource (the array called ‘result’).