Activity 3. Measuring execution times

In 292 471 154 years

It means that the the two calls are so close in time that is practically instantaneous

We get a reliable time from: SIZE=7000000 TIME=57 milliseconds SUM=47327

Activity 5. Taking small execution times (<50 ms)

Original version: SIZE=156250 TIME=11 milliseconds SUM=-2401 NTIMES=5

When the problem size is multiplied by 2, the size reaches around four times of the original size

SIZE=655360 TIME=27 milliseconds SUM=-20462 NTIMES=5

When the problem size is multiplied by 3, the size reaches more than 3 times of the original size

SIZE=590490 TIME=25 milliseconds SUM=-27459 NTIMES=5

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| N | Tsum | Tmaximum | Tmatches1 | Tmatches2 |
| 10000 | 171 | 207 | 1 813 | 304 |
| 20000 | 322 | 387 | 7 522 | 499 |
| 40000 | 559 | 744 | 28 707 | 1 153 |
| 80000 | 1 139 | 1 836 | 105 638 | 2 052 |
| 160000 | 2 441 | 3 606 | 459 024 | 5 807 |
| 320000 | 4 251 | 6 924 | 1 738 324 | 7 403 |
| 640000 | 7 811 | 13 624 | ----- | 17 514 |
| 1280000 | 20 244 | 24 460 | ----- | 29 084 |
| 2560000 | 38 066 | 47 436 | ----- | 50 850 |
| 5120000 | 66 928 | 96 512 | ----- | 99 989 |
| 10240000 | 147 025 | 220 078 | ----- | 198 045 |
| 20480000 | 272 595 | 382 837 | ----- | 435 686 |
| 40960000 | 610 278 | 765 900 | ----- | 909 066 |
| 81920000 | 1 202 113 | 1 550 373 | ----- | 1 901 996 |

Processor: 13th Gen Intel(R) Core(TM) i7-13700H 2.40 GHz

Installed RAM: 16 GB

The times obtained meet the expectations as is the matches1() we are executing an O(n2) algorithm while the rest are O(n), so the times for that one are significantly great