OS Assignment 6

Execute the given  reduction, sieve, quicksort, matrix multiplication programs by varying the data size and number of threads.

Program Name : Matrix Multiplication

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Data size | No of Threads | Execution time 1(s) | Execution time 2(s) | Execution time 3(s) | Execution time 4(s) | Average Execution time(s) |
| 256 | 1 | 7 | 9 | 7 | 5 | 7 |
| 2 | 9 | 8 | 8 | 8 | 8.25 |
| 4 | 10 | 11 | 10 | 9 | 10 |
| 8 | 14 | 10 | 10 | 9 | 10.25 |
| 512 | 1 | 62 | 85 | 62 | 64 | 68.25 |
| 2 | 43 | 29 | 38 | 36 | 36.5 |
| 4 | 24 | 30 | 32 | 29 | 28.75 |
| 8 | 19 | 20 | 20 | 19 | 19.5 |
| 1024 | 1 | 486 | 515 | 463 | 529 | 498.25 |
| 2 | 333 | 341 | 310 | 304 | 322 |
| 4 | 211 | 230 | 211 | 234 | 221.5 |
| 8 | 169 | 175 | 176 | 176 | 174 |
| 2048 | 1 | 14247 | 13833 | 17213 | 13542 | 14708.75 |
| 2 | 8980 | 8938 | 8787 | 8653 | 8839.5 |
| 4 | 5529 | 5655 | 5836 | 5393 | 5603.25 |
| 8 | 4052 | 3965 | 3894 | 4297 | 4077 |

Program Name : Sieve Execution time - ms

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Data size | No of Threads | Execution time 1 | Execution time 2 | Execution time 3 | Execution time 4 | Average Execution time |
| 100 | 1 | 57 | 53 | 57 | 58 | 56.25 |
| 2 | 878 | 856 | 991 | 947 | 918 |
| 4 | 887 | 940 | 850 | 838 | 878.75 |
| 8 | 1049 | 1046 | 1038 | 1050 | 1045.75 |
| 1000 | 1 | 126 | 119 | 113 | 149 | 126.75 |
| 2 | 1353 | 1468 | 1491 | 1382 | 1423.5 |
| 4 | 1663 | 1512 | 1472 | 1433 | 1520 |
| 8 | 1801 | 1514 | 1969 | 1596 | 1720 |
| 500 | 1 | 175 | 166 | 199 | 190 | 182.5 |
| 2 | 1078 | 1006 | 971 | 1036 | 1022.75 |
| 4 | 1367 | 1372 | 1015 | 1306 | 1265 |
| 8 | 1421 | 1785 | 1496 | 1148 | 1462.5 |
| 10000 | 1 | 599 | 727 | 719 | 605 | 662.5 |
| 2 | 2553 | 2373 | 2067 | 1890 | 2220.75 |
| 4 | 2699 | 2674 | 1849 | 3123 | 2586.25 |
| 8 | 2079 | 2787 | 3464 | 3439 | 2942.25 |

Program Name : Reduction Execution time - ms

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Data size | No of Threads | Execution time 1 | Execution time 2 | Execution time 3 | Execution time 4 | Average Execution time |
| 100 | 1 | 56 | 54 | 49 | 53 | 53 |
| 2 | 443 | 468 | 492 | 468 | 467.75 |
| 4 | 551 | 538 | 275 | 424 | 447 |
| 8 | 712 | 674 | 674 | 657 | 679.25 |
| 500 | 1 | 67 | 65 | 55 | 62 | 62.25 |
| 2 | 448 | 496 | 465 | 426 | 458.75 |
| 4 | 446 | 591 | 662 | 449 | 537 |
| 8 | 557 | 645 | 924 | 570 | 674 |
| 1000 | 1 | 79 | 92 | 102 | 85 | 89.5 |
| 2 | 476 | 370 | 448 | 451 | 436.25 |
| 4 | 414 | 895 | 500 | 246 | 513.75 |
| 8 | 699 | 631 | 1238 | 1911 | 1119.75 |
| 5000 | 1 | 196 | 242 | 209 | 231 | 219.5 |
| 2 | 487 | 440 | 464 | 483 | 468.5 |
| 4 | 511 | 438 | 556 | 471 | 494 |
| 8 | 634 | 625 | 632 | 793 | 671 |

Program Name : QuickSort Execution time - ms

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Data size | No of Threads | Execution time 1 | Execution time 2 | Execution time 3 | Execution time 4 | Average Execution time |
| 100 | 1 | 162 | 164 | 167 | 171 | 166 |
| 2 | 578 | 556 | 587 | 633 | 588.5 |
| 4 | 731 | 754 | 761 | 729 | 743.75 |
| 8 | 907 | 1027 | 1534 | 1247 | 1178.75 |
| 500 | 1 | 211 | 359 | 209 | 209 | 247 |
| 2 | 854 | 911 | 796 | 628 | 797.25 |
| 4 | 741 | 701 | 1043 | 1235 | 930 |
| 8 | 883 | 1384 | 1083 | 1438 | 1197 |
| 1000 | 1 | 776 | 958 | 1020 | 787 | 885.25 |
| 2 | 1418 | 1206 | 1421 | 1157 | 1300.5 |
| 4 | 1523 | 1625 | 1700 | 1508 | 1589 |
| 8 | 1739 | 1596 | 1654 | 1831 | 1705 |
| 5000 | 1 | 282 | 333 | 321 | 328 | 316 |
| 2 | 828 | 590 | 665 | 901 | 671 |
| 4 | 1131 | 891 | 870 | 1186 | 1019.5 |
| 8 | 1032 | 1025 | 1100 | 1101 | 1064.5 |