Sequential test cases take longer to complete than parallel test cases, with parallel test cases completing in about 1/4th of the time. However, individual threads for sequential test cases complete their computations faster than threads for parallel test cases. Synchronous programming will produce superior results for an implementation that prioritizes runtime for the complete operation, whereas asynchronous programming will produce superior results for an implementation that prioritizes runtime for each thread.

The results are listed below, with iterations varying between 1-5 and matrix sizes 100, 200, and 300.

Sequential Test, iterations: 1, mSize: 100, Result: 226 ms
Thread 0: 42 ms
Thread 1: 18 ms
Thread 2: 18 ms
Thread 3: 18 ms
Thread 4: 14 ms
Thread 5: 14 ms
Thread 6: 18 ms
Thread 7: 13 ms
Parallel Test, iterations: 1, mSize: 100, Result: 34 ms
Thread 0: 21 ms
Thread 1: 25 ms
Thread 2: 25 ms
Thread 3: 30 ms
Thread 4: 32 ms
Thread 5: 32 ms
Thread 6: 32 ms
Thread 7: 32 ms
Sequential Test, iterations: 2, mSize: 100, Result: 188 ms
Thread 0: 21 ms
Thread 1: 24 ms
Thread 2: 27 ms
Thread 3: 24 ms
Thread 4: 21 ms
Thread 5: 22 ms
Thread 6: 22 ms
Thread 7: 21 ms
Parallel Test, iterations: 2, mSize: 100, Result: 54 ms
Thread 0: 45 ms
Thread 1: 48 ms
Thread 2: 49 ms
Thread 3: 50 ms
Thread 4: 51 ms
Thread 5: 50 ms

Thread 6: 51 ms
Thread 7: 43 ms
Sequential Test, iterations: 3, mSize: 100, Result: 322 ms
Thread 0: 32 ms
Thread 1: 32 ms
Thread 2: 35 ms
Thread 3: 38 ms
Thread 4: 53 ms
Thread 5: 49 ms
Thread 6: 47 ms
Thread 7: 31 ms
Parallel Test, iterations: 3, mSize: 100, Result: 77 ms
Thread 0: 65 ms
Thread 1: 67 ms
Thread 2: 68 ms
Thread 3: 69 ms
Thread 4: 70 ms
Thread 5: 63 ms
Thread 6: 72 ms
Thread 7: 77 ms
Sequential Test, iterations: 4, mSize: 100, Result: 347 ms
Thread 0: 44 ms
Thread 1: 42 ms
Thread 2: 42 ms
Thread 3: 43 ms
Thread 4: 43 ms
Thread 5: 44 ms
Thread 6: 43 ms
Thread 7: 43 ms
Parallel Test, iterations: 4, mSize: 100, Result: 81 ms
Thread 0: 75 ms
Thread 1: 75 ms
Thread 2: 76 ms
Thread 3: 76 ms
Thread 4: 78 ms
Thread 5: 78 ms
Thread 6: 78 ms
Thread 7: 80 ms
Sequential Test, iterations: 5, mSize: 100, Result: 423 ms
Thread 0: 52 ms
Thread 1: 52 ms
Thread 2: 51 ms
Thread 3: 51 ms
Thread 4: 53 ms

Thread 5: 51 ms
Thread 6: 52 ms
Thread 7: 56 ms
Parallel Test, iterations: 5, mSize: 100, Result: 104 ms
Thread 0: 96 ms
Thread 1: 96 ms
Thread 2: 96 ms
Thread 3: 96 ms
Thread 4: 97 ms
Thread 5: 98 ms
Thread 6: 99 ms
Thread 7: 103 ms
Sequential Test, iterations: 1, mSize: 200, Result: 702 ms
Thread 0: 85 ms
Thread 1: 90 ms
Thread 2: 85 ms
Thread 3: 84 ms
Thread 4: 88 ms
Thread 5: 80 ms
Thread 6: 90 ms
Thread 7: 89 ms
Parallel Test, iterations: 1, mSize: 200, Result: 170 ms
Thread 0: 160 ms
Thread 1: 162 ms
Thread 2: 162 ms
Thread 3: 166 ms
Thread 4: 166 ms
Thread 5: 166 ms
Thread 6: 167 ms
Thread 7: 169 ms
Sequential Test, iterations: 2, mSize: 200, Result: 1415 ms
Thread 0: 176 ms
Thread 1: 177 ms
Thread 2: 167 ms
Thread 3: 164 ms
Thread 4: 188 ms
Thread 5: 171 ms
Thread 6: 189 ms
Thread 7: 172 ms
Parallel Test, iterations: 2, mSize: 200, Result: 350 ms
Thread 0: 335 ms
Thread 1: 338 ms
Thread 2: 340 ms
Thread 3: 341 ms

Thread 4: 341 ms
Thread 5: 344 ms
Thread 6: 346 ms
Thread 7: 349 ms
Sequential Test, iterations: 3, mSize: 200, Result: 2048 ms
Thread 0: 272 ms
Thread 1: 251 ms
Thread 2: 251 ms
Thread 3: 255 ms
Thread 4: 252 ms
Thread 5: 255 ms
Thread 6: 257 ms
Thread 7: 247 ms
Parallel Test, iterations: 3, mSize: 200, Result: 531 ms
Thread 0: 520 ms
Thread 1: 522 ms
Thread 2: 522 ms
Thread 3: 524 ms
Thread 4: 525 ms
Thread 5: 527 ms
Thread 6: 529 ms
Thread 7: 530 ms
Sequential Test, iterations: 4, mSize: 200, Result: 2824 ms
Thread 0: 336 ms
Thread 1: 332 ms
Thread 2: 318 ms
Thread 3: 341 ms
Thread 4: 360 ms
Thread 5: 418 ms
Thread 6: 370 ms
Thread 7: 339 ms
Parallel Test, iterations: 4, mSize: 200, Result: 706 ms
Thread 0: 681 ms
Thread 1: 686 ms
Thread 2: 691 ms
Thread 3: 693 ms
Thread 4: 693 ms
Thread 5: 699 ms
Thread 6: 701 ms
Thread 7: 705 ms
Sequential Test, iterations: 5, mSize: 200, Result: 3467 ms
Thread 0: 440 ms
Thread 1: 447 ms
Thread 2: 440 ms

Thread 3: 444 ms
Thread 4: 421 ms
Thread 5: 422 ms
Thread 6: 414 ms
Thread 7: 431 ms
Parallel Test, iterations: 5, mSize: 200, Result: 950 ms
Thread 0: 921 ms
Thread 1: 927 ms
Thread 2: 931 ms
Thread 3: 931 ms
Thread 4: 936 ms
Thread 5: 938 ms
Thread 6: 942 ms
Thread 7: 949 ms
Sequential Test, iterations: 1, mSize: 300, Result: 2460 ms
Thread 0: 320 ms
Thread 1: 292 ms
Thread 2: 299 ms
Thread 3: 297 ms
Thread 4: 314 ms
Thread 5: 306 ms
Thread 6: 334 ms
Thread 7: 284 ms
Parallel Test, iterations: 1, mSize: 300, Result: 708 ms
Thread 0: 667 ms
Thread 1: 673 ms
Thread 2: 679 ms
Thread 3: 679 ms
Thread 4: 683 ms
Thread 5: 689 ms
Thread 6: 694 ms
Thread 7: 705 ms
Sequential Test, iterations: 2, mSize: 300, Result: 4914 ms
Thread 0: 615 ms
Thread 1: 647 ms
Thread 2: 608 ms
Thread 3: 584 ms
Thread 4: 617 ms
Thread 5: 618 ms
Thread 6: 587 ms
Thread 7: 625 ms
Parallel Test, iterations: 2, mSize: 300, Result: 1419 ms
Thread 0: 1334 ms
Thread 1: 1358 ms

Thread 2: 1371 ms
Thread 3: 1391 ms
Thread 4: 1392 ms
Thread 5: 1412 ms
Thread 6: 1415 ms
Thread 7: 1416 ms
Sequential Test, iterations: 3, mSize: 300, Result: 7270 ms
Thread 0: 901 ms
Thread 1: 921 ms
Thread 2: 919 ms
Thread 3: 883 ms
Thread 4: 893 ms
Thread 5: 894 ms
Thread 6: 951 ms
Thread 7: 896 ms
Parallel Test, iterations: 3, mSize: 300, Result: 2195 ms
Thread 0: 2093 ms
Thread 1: 2135 ms
Thread 2: 2168 ms
Thread 3: 2177 ms
Thread 4: 2182 ms
Thread 5: 2187 ms
Thread 6: 2187 ms
Thread 7: 2192 ms
Sequential Test, iterations: 4, mSize: 300, Result: 10343 ms
Thread 0: 1273 ms
Thread 1: 1303 ms
Thread 2: 1224 ms
Thread 3: 1299 ms
Thread 4: 1348 ms
Thread 5: 1326 ms
Thread 6: 1228 ms
Thread 7: 1330 ms
Parallel Test, iterations: 4, mSize: 300, Result: 2923 ms
Thread 0: 2848 ms
Thread 1: 2858 ms
Thread 2: 2864 ms
Thread 3: 2881 ms
Thread 4: 2882 ms
Thread 5: 2907 ms
Thread 6: 2910 ms
Thread 7: 2919 ms
Sequential Test, iterations: 5, mSize: 300, Result: 12532 ms
Thread 0: 1552 ms

Thread 1: 1496 ms
Thread 2: 1553 ms
Thread 3: 1553 ms
Thread 4: 1525 ms
Thread 5: 1661 ms
Thread 6: 1617 ms
Thread 7: 1562 ms
Parallel Test, iterations: 5, mSize: 300, Result: 3525 ms
Thread 0: 3406 ms
Thread 1: 3474 ms
Thread 2: 3493 ms
Thread 3: 3505 ms
Thread 4: 3513 ms
Thread 5: 3516 ms
Thread 6: 3517 ms
Thread 7: 3523 ms