Peter Chong
CS 361
Professor Boady

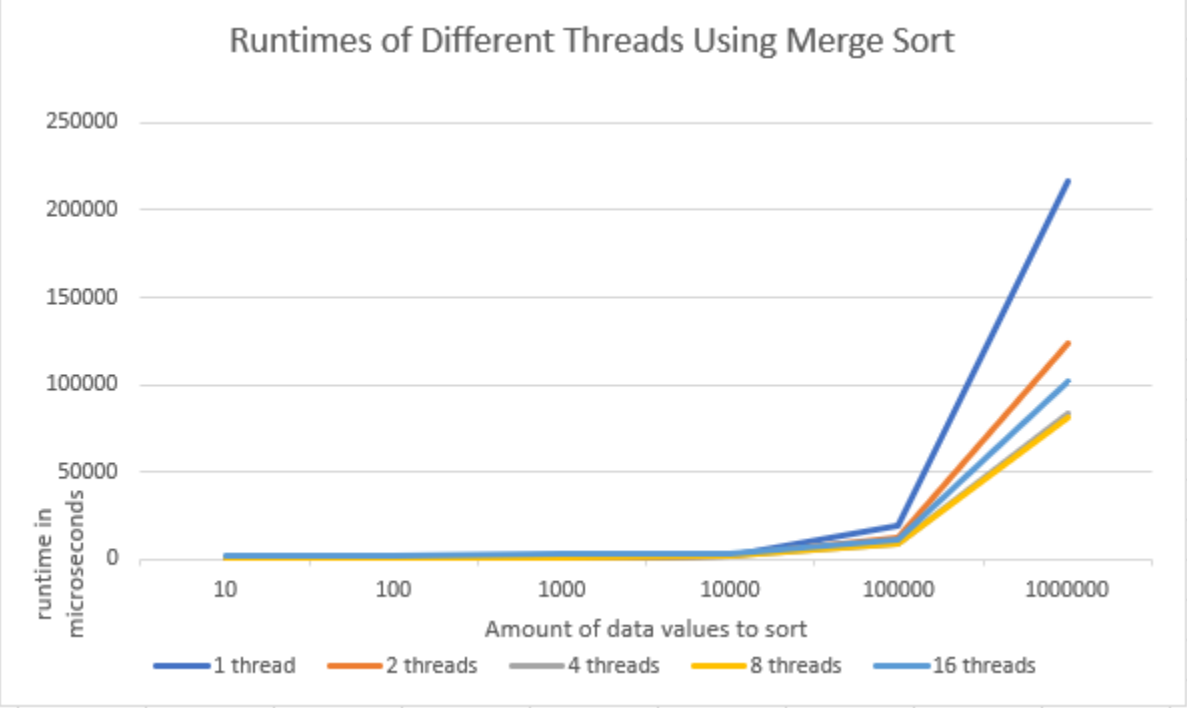
1 Thread	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Average
10	2	2	2	2	2	2	2
100	13	10	11	11	11	13	11.5
1000	132	232	158	118	116	156	152
10000	1592	1686	1618	1747	1797	1788	1704.667
100000	18072	18860	17981	21169	21069	18627	19296.33
1000000	216731	212412	219791	216410	216312	220617	217045.5

2 Threads	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Average
10	520	384	425	363	429	444	427.5
100	308	319	331	302	290	273	303.8333
1000	418	508	372	362	599	403	443.6667
10000	1694	1625	1491	1237	1386	1548	1496.833
100000	10807	13239	12010	11353	13077	11036	11920.33
1000000	125851	126354	120725	122211	121411	124373	123487.5

4 Threads	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Average
10	674	552	495	594	473	403	531.8333
100	544	613	678	613	576	613	606.1667
1000	671	681	690	617	538	538	622.5
10000	1300	1008	1205	2099	1138	1275	1337.5
100000	8712	9085	8411	9559	9169	9198	9022.333
1000000	85212	82256	84196	83983	82365	84394	83734.33

8 Threads	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Average
10	1120	1383	1295	957	938	1337	1171.667
100	1197	1273	981	1370	1078	1293	1198.667
1000	1472	1133	986	1321	1414	1299	1270.833
10000	1860	1489	1702	1872	1855	1755	1755.5
100000	9398	8037	10113	10660	8801	8583	9265.333
1000000	83777	73521	72805	83177	82042	90220	80923.67

16 Thread	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Average
10	1505	1609	1670	1881	1599	1983	1707.833
100	2484	2613	2707	1914	2028	2738	2414
1000	2549	2463	1990	2367	2451	3200	2503.333
10000	2990	3042	3090	3339	2658	3179	3049.667
100000	10690	11811	12138	11914	11926	10778	11542.83
1000000	138511	92819	89413	102544	92634	91843	101294



1. Threading did indeed improve the speed of sorting at around or after 10000 elements to merge sort. Around 10000 elements, some threads break even or are slightly faster. At 10000 elements, 4 threads seems to be the fastest. Overall, if we were to take into account the lowest and highest elements, 8 threads would be the way to go. However, if we were to keep adding more elements, 8 threads would be the best.

2. The most difficult part of coding the assignment was learning all the new C++ syntax and learning threading.

3. The easiest part was probably just following the logic of merge sort and just coming up with the logic behind them. It was just a matter of putting them into implementation.