



BILKENT UNIVERSITY

CS 342 – OPERATING SYSTEMS

PROJECT #1

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SECTION 01

OBTAINED RESULTS:

In the first two tables (Table 1, 2), the effect of the M value (number of characters) is observed by fixing N value to 1. In the following two tables (Table 3, 4) the effect of the N value (the number of bytes processed at a time) is observed. In Table 5, the execution times with respect to both M and N values in normal mode are observed. And in Table 6, the execution times with respect to both M and N values in tapped mode are observed.

N	M	Time (microseconds)
1	1	744
1	4	743
1	16	1140
1	64	1614
1	256	1390
1	1024	1592
1	4096	2072

Table 1: Elapsed Time vs M (Normal Mode)

N	M	Time (microseconds)
1	1	630
1	4	1140
1	16	1493
1	64	1755
1	256	2825
1	1024	1736
1	4096	1613

Table 2: Elapsed Time vs M (Tapped Mode)

N	M	Time (microseconds)
1	4096	1038
4	4096	676
16	4096	691
64	4096	1595
256	4096	656
1024	4096	857
4096	4096	824

Table 1: Elapsed Time vs N (Normal Mode)

N	M	Time (microseconds)
1	4096	1040
4	4096	988
16	4096	1193
64	4096	814
256	4096	621
1024	4096	754
4096	4096	844

Table 2: Elapsed Time vs N (Tapped Mode)

These are the obtained graphs according to the experiments.

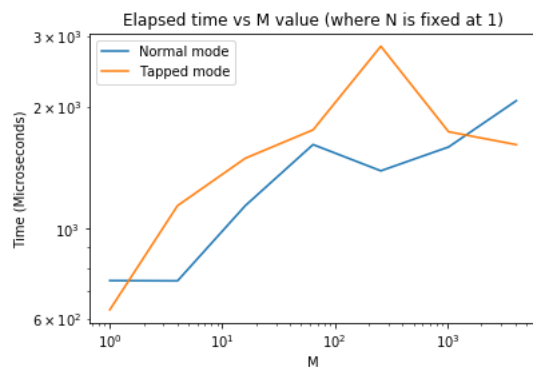


Figure 1: Elapsed Time vs M

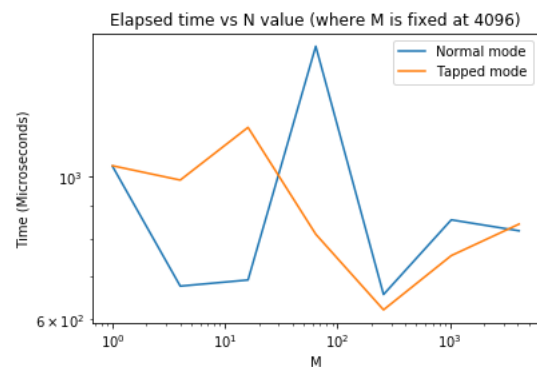


Figure 2: Elapsed time vs N

N/M	1	4	16	64	256	1024	4096
1	744	743	1140	1614	1390	1592	2072
4	853	1159	1553	1440	1120	1855	1387
16	491	1291	1869	1772	1510	1311	1244
64	459	1288	1499	1685	1197	1242	4650
256	658	1122	1156	1119	1275	1265	1267
1024	597	526	1304	1881	1419	1515	2002
4096	567	1341	1289	1304	1609	1284	1681

Table 5: Execution time (msec) with respect to N, M (normal mode)

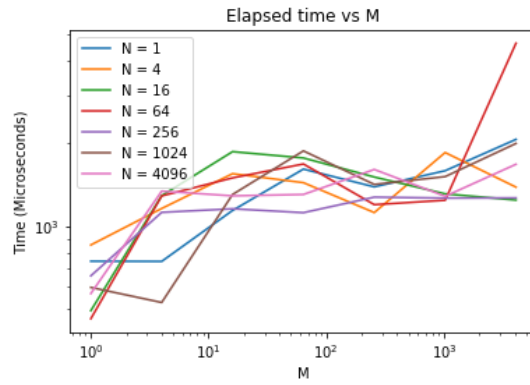


Figure 3: Execution time vs M, N (normal mode)

N/M	1	4	16	64	256	1024	4096
1	630	1140	1493	1755	2825	1736	1613
4	491	1338	1192	1179	1366	1243	1267
16	539	1287	1084	1613	1773	1490	1329
64	479	1159	1093	1173	1031	1168	1266
256	660	1371	1216	1142	1901	1134	1260
1024	632	569	2038	1573	1290	2473	1584
4096	597	1859	1378	1364	1394	1182	1287

Table 6: Execution time (msec) with respect to N, M (tapped mode)

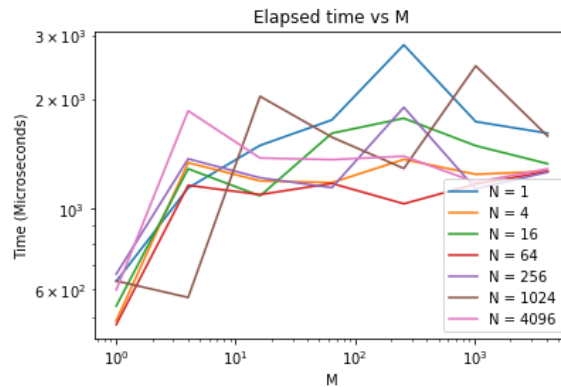


Figure 4: Execution time vs M, N (tapped mode)

INFERENCES & DISCUSSION:

As can be seen from Figure 1, the M value increase tends to increase the execution time as expected since M value increases the bytes processed. Therefore, the theoretical prediction matches with the experimental results. In Figure 2, despite some fluctuations, the elapsed time tends to drop while N value is increased because as N value increases, the number of bytes processed at a time increases, and the transfer of data quickens. Therefore, experimental data matches with the theoretical prediction. In figure 3, we can see that there are no major changes on the execution times as N changes. Because in normal mode, we transfer the data all at once, independent from the N value. However, in Figure 4, we can see that as N value increases, the execution times tend to drop, and as M value increases, the execution times tend to increase, as expected.