BILKENT UNIVERSITY

ENGINEERING FACULTY

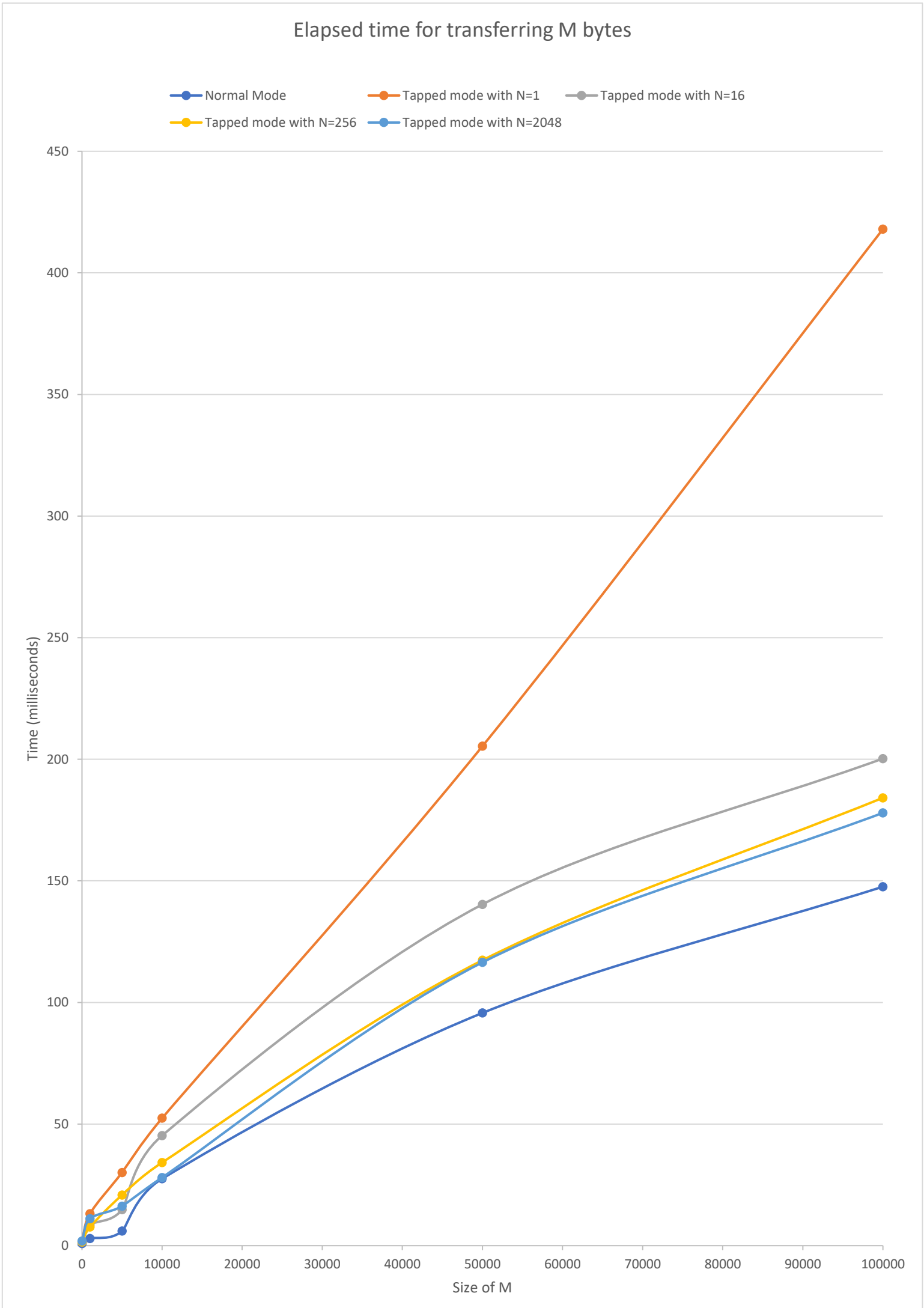
DEPARTMENT OF COMPUTER ENGINEERING

CS342
Project 1

Ahmet Feyzi Halaç

21703026

Section 3


Elapsed time for transferring M bytes
Normal Mode
Tapped mode with N=1
Tapped mode with N=16
Tapped mode with N=256
Tapped mode with N=2048
Time (milliseconds)
Size of M
0
50
100
150
200
250
300
350
400
450
0
10000
20000
30000
40000
50000
60000
70000
80000
90000
100000

Interpretations:

From the above figure, it can be seen that if size of the transferred bytes (M) increase, elapsed time also increases in all modes in a linear way. However, as it can be seen, mode of the transfer affects the elapsed time. It is faster than all other modes in normal mode, where pipe is responsible for transferring the bytes outputted by the first process to second process. Also, in tapped modes, elapsed time increases as N (buffer size) decreases.

Conclusion:

Reason for the increase by M is trivial, if number of transferred bytes increase, it is expected that elapsed time will also increase. For the decrease while increasing buffer size, it is also trivial because if buffer size increases, read and write counts for the total transfer decrease since in each read/write operation, larger number of bytes transferred in larger buffer sizes. So, normal mode is fastest since pipe system call's internal implementation has larger buffer size than tapped modes.