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CSCE 313.503

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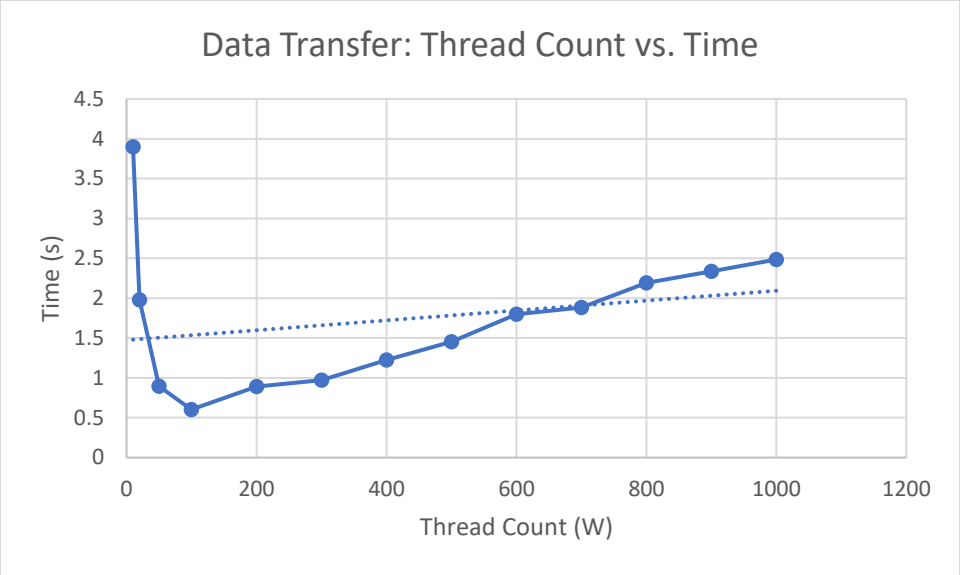
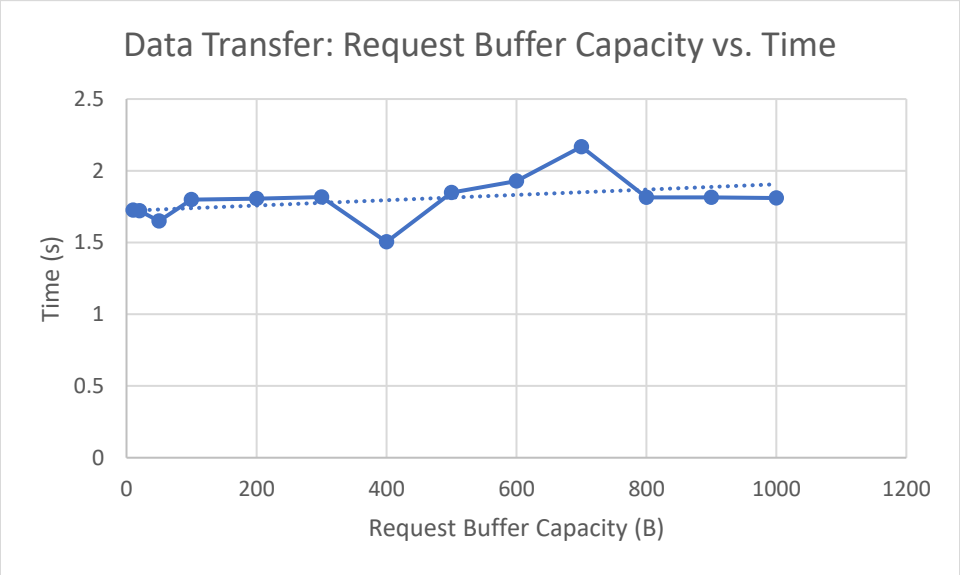
Programming Assignment Four Report

Graphs

Data Transfer (N=15000)

Request Buffer Capacity = 100 bytes		Thread Count = 500	
Thread Count	Time(s)	Request Buffer Capacity	Time(s)
10	3.896879	10	1.724562
20	1.979917	20	1.72166
50	0.897162	50	1.650181
100	0.602448	100	1.797868
200	0.891767	200	1.804924
300	0.970631	300	1.816331
400	1.225395	400	1.503926
500	1.452209	500	1.848412
600	1.800248	600	1.929059
700	1.882595	700	2.16764
800	2.190201	800	1.813705
900	2.337041	900	1.815305
1000	2.48695	1000	1.810382

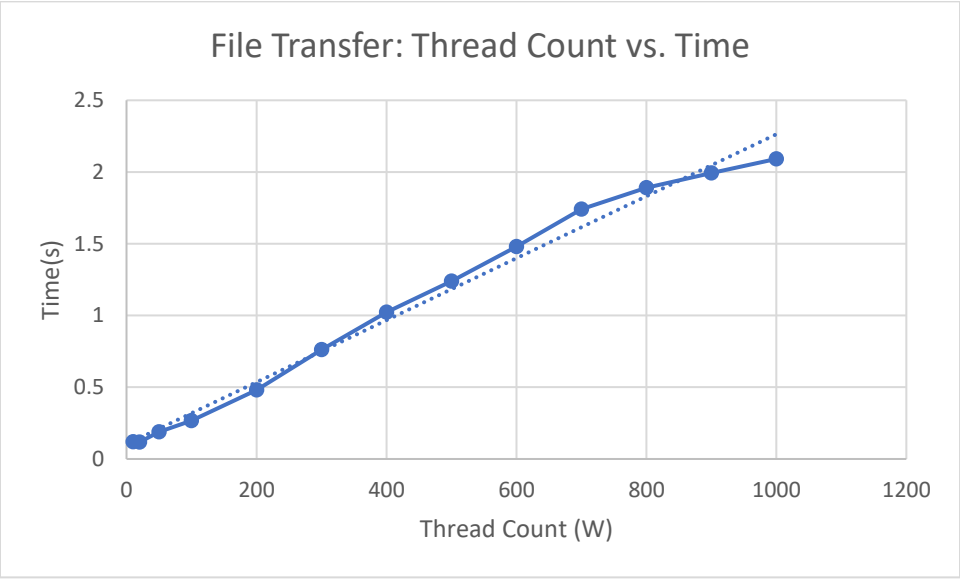


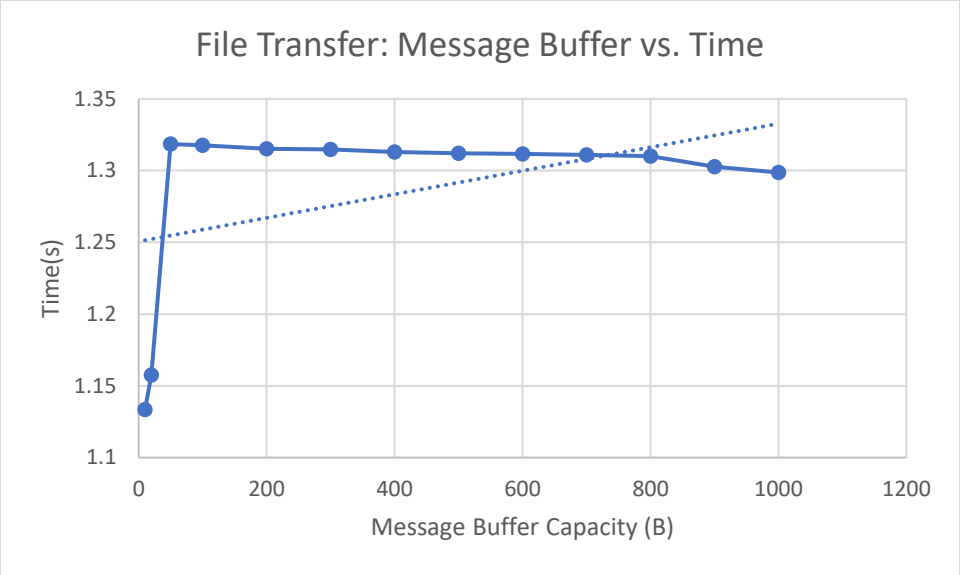


File Transfer (File = 10.csv, N = 15000)

Request Buffer Capacity = 256 bytes		Thread Count = 500	
Thread Count	Time(s)	Request Buffer Capacity	Time(s)
10	0.120422	10	1.133552

20	0.117299	20	1.157573
50	0.187515	50	1.318508
100	0.26606	100	1.317594
200	0.481558	200	1.315227
300	0.76108	300	1.314703
400	1.022285	400	1.313025
500	1.238381	500	1.312176
600	1.48098	600	1.311665
700	1.741916	700	1.310982
800	1.890763	800	1.310083
900	1.992895	900	1.30271
1000	2.091315	1000	1.29875





Data Requests Report

As thread count increases initially, time decreases. However, time starts to increase again between one hundred and two hundred thread count. This is most likely because having the memory to occupy and close a thread takes more time than actually speeding up the process. The scale for this relationship is inverse logarithmic. There is no correlation between request buffer capacity and time.

File Transfer Report

As thread count increases, time increases linearly. This is probably because having a file split up into multiple threads will speed up the process rather than slowing it down since the file is bigger than requesting simple data points. However, the relationship between message buffer capacity and time is complicated and represents more a logarithmic relationship.

Demo Video:

https://drive.google.com/file/d/1YxcJzW84QRlWgV0tj6HuYJ6gpn1Vukqb/view?usp=sharing