AOS Project 2 Experimental Evaluation

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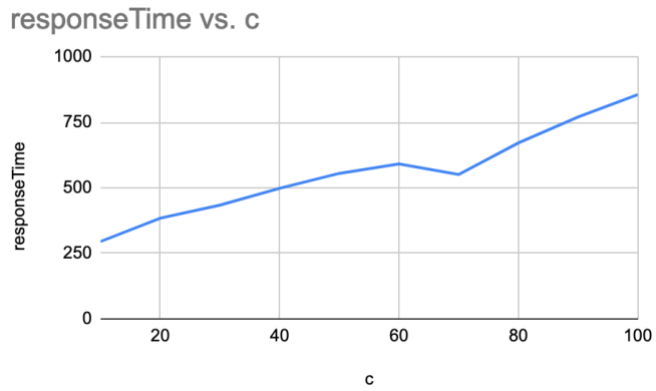
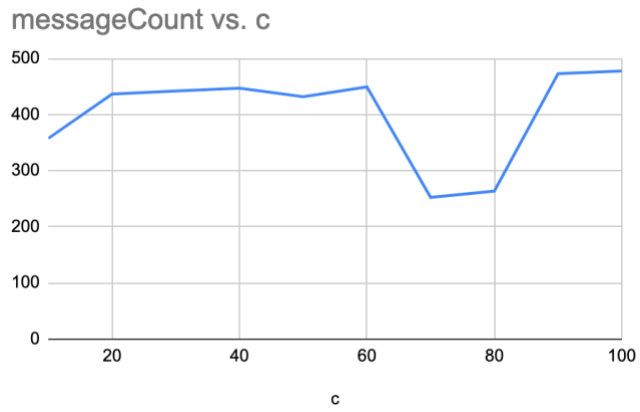
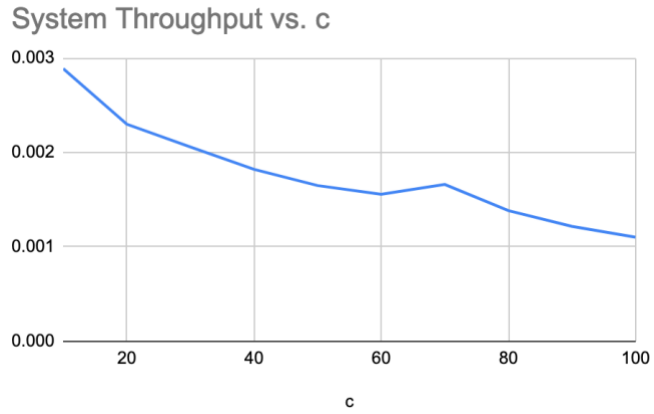
Parameters :

1) n : number of nodes
2) d : mean inter request delay
3) c : mean critical section execution time

Keeping n,d as constant and varying c :

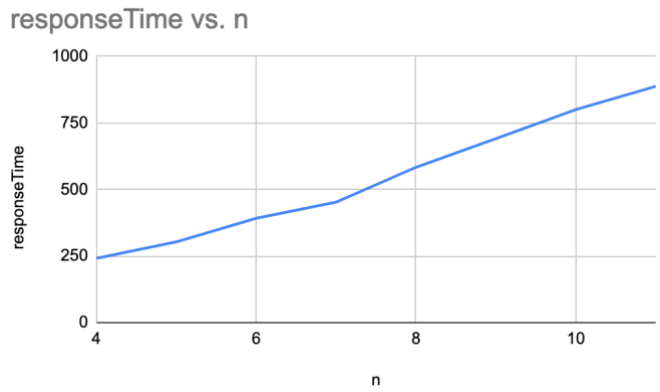


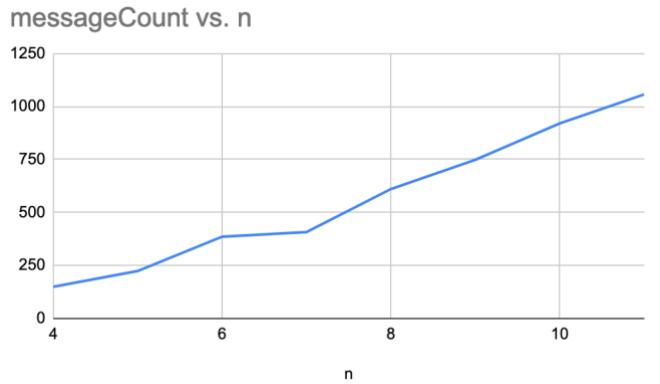


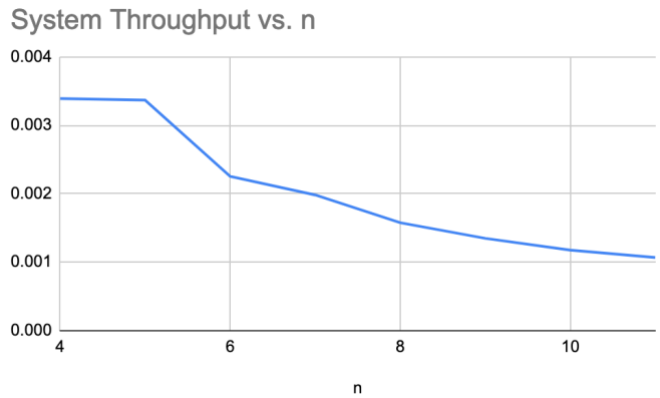


We can clearly notice that with increase in mean critical section execution time, response time increases, system throughput decreases. Message count remains the same with increase in execution time.

Keeping c,d as constant and varying n

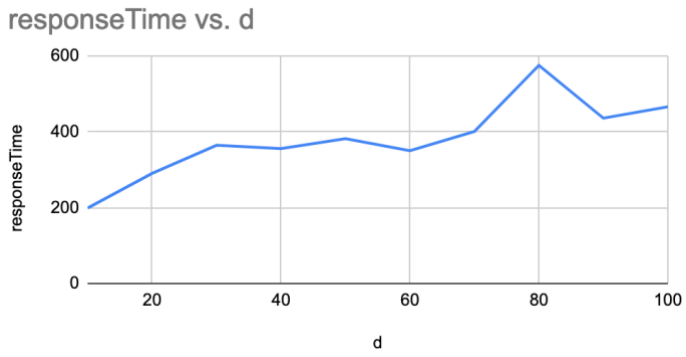


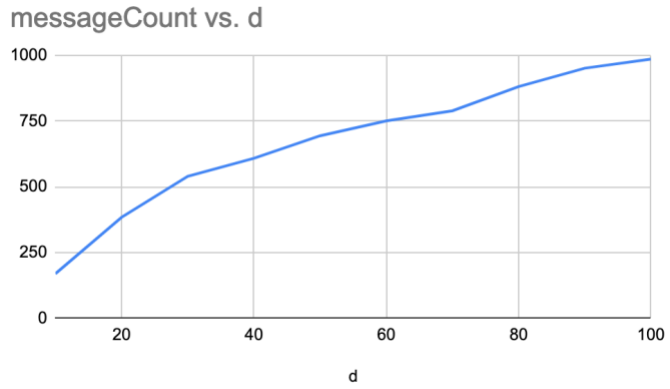


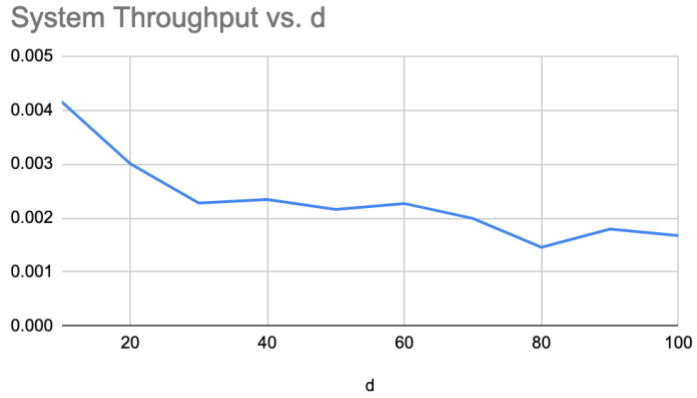


With increase in number of nodes, both message count and response time increases, and system throughput decreases.

Keeping n,c as constants and varying d







With increase in inter-request delay, both message count and response time increases, and system throughput decreases.

Below are values of different parameters against with above graphs are plotted.

n = 6	c=10	requests = 100	
d	responseTime	messageCount	System Throughput
10	199	169.5	0.004154664303
20	290.33	383.83	0.00300658442
30	364.5	539.83	0.002278016759
40	355.84	608.17	0.002343511987
50	382.17	693.84	0.00215866163
60	350.17	750.17	0.00226883416
70	401	788.67	0.001992600809
80	575.34	880.84	0.001457329395
90	436	950.67	0.001795310649
100	466.17	985.34	0.001675275722

c=10	d = 20	requests = 100	
n	responseTime	messageCount	System Throughput
4	241.5	148.25	0.003388222538
5	303.2	222.8	0.003367967263
6	391.67	384.84	0.002251491613
7	452.28	406.86	0.001980679883
8	583.25	609.88	0.001573734373
9	690.89	747.67	0.001345546912
10	799.9	920.1	0.001173478907
11	887	1056.45	0.001064702967

n = 6	d = 20	requests = 100	
c	responseTime	messageCount	System Throughput
10	294.5	357.5	0.002888031037
20	383.5	436.34	0.002298656818
30	433.67	441.84	0.002057077031
40	497.67	446.83	0.001820725316
50	554.84	431.5	0.001649253301
60	591	449.17	0.001556496948
70	550.5	252.34	0.001660665207
80	671.17	263.5	0.001383677677
90	770.5	472.67	0.001216298399
100	855.67	477.5	0.001102072079