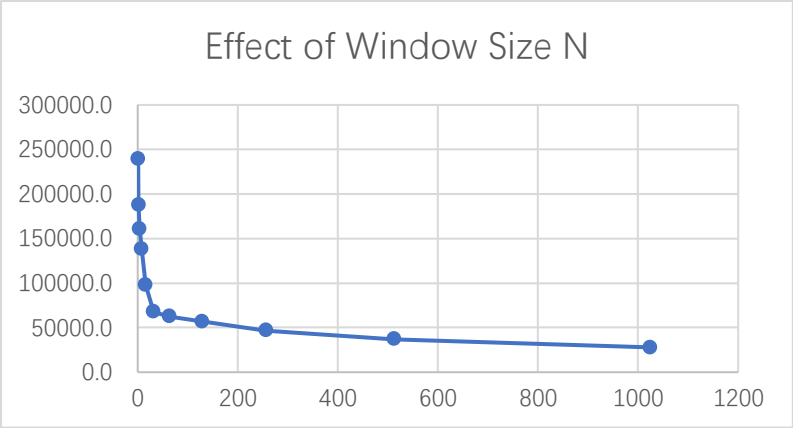
Report for CSC573 Project2

Set retransmission timeout = 800ms

Task 1: Effect of Window Size N

p=0.05, MSS=500						
N	**T1**	**T2**	**T3**	**T4**	**T5**	**Average**
1	241900	237317	239214	239243	240560	239646.9
2	195804	180945	190237	193524	178368	187775.7
4	155355	162725	161702	159708	164529	160803.9
8	133843	140175	139035	139864	138503	138283.9
16	99788	96956	92512	101701	98032	97797.7
32	66354	68229	62714	69680	72074	67810.2
64	61614	60635	61647	64312	65157	62673.2
128	56932	57970	57819	54887	56588	56839.2
256	47187	44598	44377	49487	47326	46595.1
512	38448	36511	36165	36288	38734	37229.3
1024	28887	26877	29123	28546	25898	27866.2

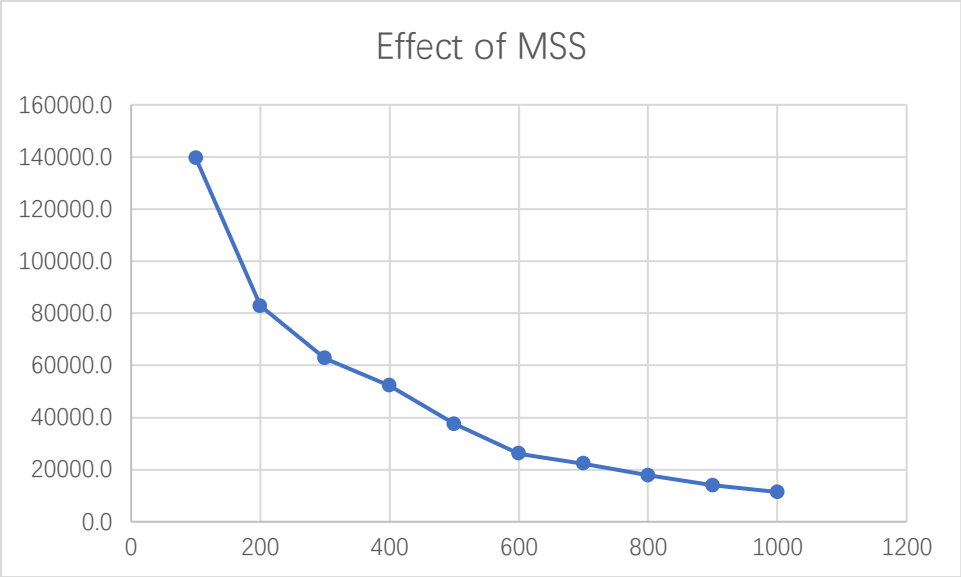


- Explain how the value of N affects the delay and the shape of the curve.

As N increased, the average transmission delay time decreased. This is because when the window size N increases, the client spend less time waiting for ACK. Therefore the transmission delay time will decrease.

Task 2: Effect of MSS

N = 64, p = 0.05						
MSS	**T1**	**T2**	**T3**	**T4**	**T5**	**Average**
100	135802	140740	142280	142010	137501	139666.3
200	85936	80819	81387	84911	81349	82880.6
300	62640	61735	65927	62713	60634	62729.9
400	47460	53667	53119	53351	53679	52255.1
500	38608	37379	35360	37974	38500	37564.1
600	25301	24215	28207	27633	25263	26123.9
700	21863	24140	23101	20837	21267	22241.6
800	18417	17879	16484	20020	16507	17861.4
900	14034	14297	12150	15425	13697	13920.5
1000	10497	12135	12608	10121	11718	11416.0

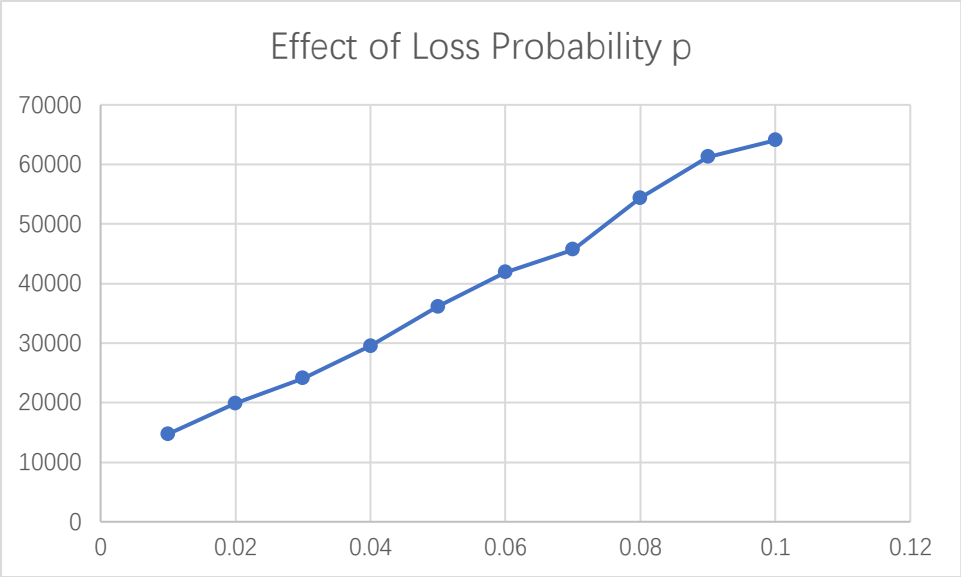


- Discuss the shape of the curve; are the results expected?

As MSS increased, the average transmission delay time decreased as expected. Because the maximum segment size (MSS) increase, the information each segment could carry will also increase. The number of packets need to transmit, which lead to the transmission time decrease.

Task 3: Effect of Loss Probability p

MSS = 500, N = 64						
p	**T1**	**T2**	**T3**	**T4**	**T5**	**Average**
0.01	14987	13034	15984	16093	13543	14728.2
0.02	21022	19674	17894	19232	21564	19877.2
0.03	23043	23889	24758	25877	22988	24111
0.04	29456	27456	31356	29669	29753	29538
0.05	36936	33998	38745	35012	35945	36127.2
0.06	41045	41356	40354	43048	43655	41891.6
0.07	45456	47234	44823	45923	45006	45688.4
0.08	53093	56049	53910	54857	53958	54373.4
0.09	59035	61048	63958	61839	60347	61245.4
0.1	64028	64999	65839	62405	62989	64052



- Discuss and explain the results and shape of the curve.

As the loss probability p increases, the information loss during the transmission increased. Therefore the amount to retransmission increases and lead to the whole transmission time increases. Which means that when the loss probability p increase, the average transmission delay time will increase as it is shown in the figure above.