S.Sai Teja Reddy
CS14B051

Networks Lab-7 Report

19th March 2017

OVERVIEW

In this assignment we simulate a system similar to the Slotted Aloha discussed in class. In this simulation we observe how the values of collision window size,number of nodes and probability of packet generation affect utilization and packet delay time. The theoretical maximum achievable utilization is 0.36.

DATA AND PLOT

Using N=50 and varying p in {0.01, 0.02, 0.03, 0.05, 0.1} and W in {2,4} we obtain the following data:

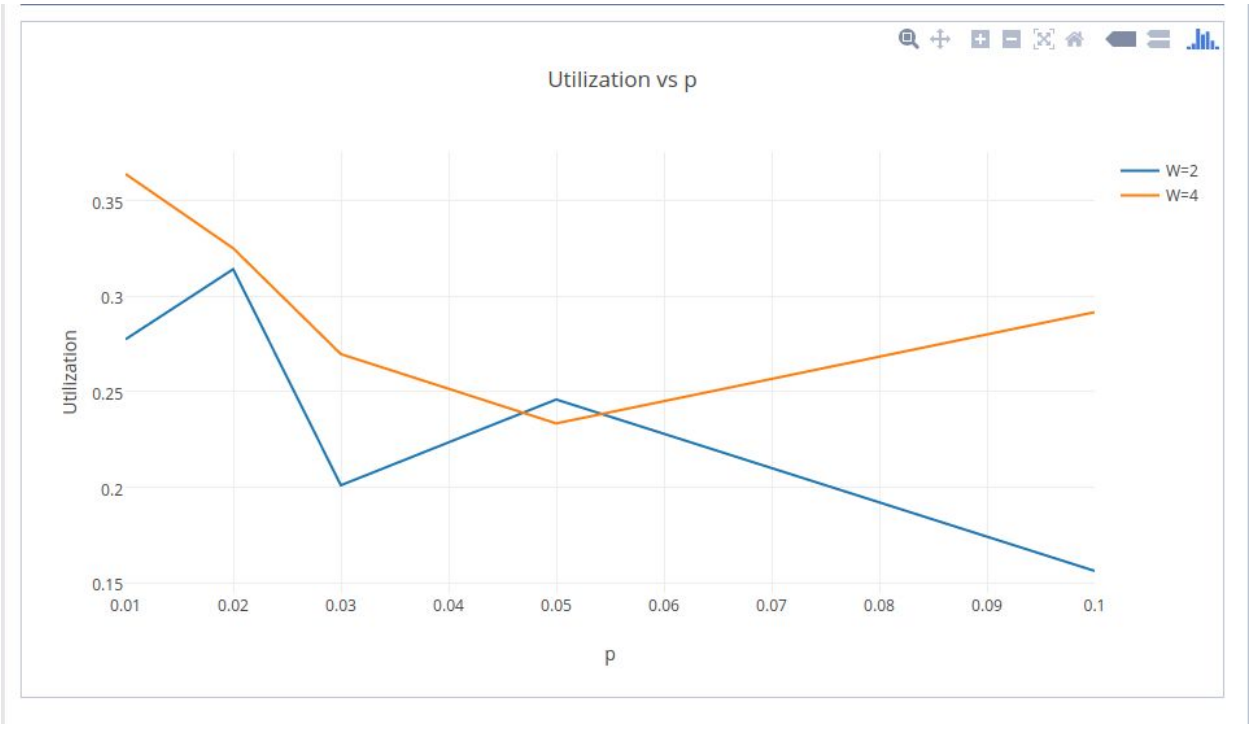
W=2 and N=50

Prob. of pkt generation	Utilization	Avg pkt delay (in slots)
0.01	0.27745664	33
0.02	0.32427623	30
0.03	0.20108695	45
0.05	0.24596775	37
0.10	0.15625000	43

W=4 and N=50

Prob. of pkt generation	Utilization	Avg pkt delay (in slots)
0.01	0.36402568	34
0.02	0.325112100	63
0.03	0.26973686	48
0.05	0.23346303	61
0.10	0.29166666	50

PLOT



OBSERVATIONS

We observe that as collision window size increases both Utilization and Avg pkt delay increase. Also we note that for low values of N we get very low values of Utilization and pkt delays.Another observation is that probability of pkt generation affects utilization and packet delay in the exact inverse ways.