ASSIGNMENT-4 REPORT

Observations:-

1. Packet Generation rate is an important factor for the round trip time (RTT). As the Packet Generation rate increases the RTT_{avg} decreases significantly.
2. Retransmission ratio depends on the random drop probability. As the random drop probability increases retransmission ratio increases as the there would be many unacknowledged packets which were transmitted. This also can lead to resending of the whole window(may be same window also) a lot of times which drastically decreases the utilization in case the window size is large enough.
3. RTT_{avg} is very less , i.e. in the order of microseconds. This is purely due to running the sender and receiver on the same machine and there would be literally microseconds delay in the UDP communication on the same.
4. Packet length also increase RTT_{avg} . As packet length increases, the RTT_{avg} also increases.

Results:-

1. Random drop probability = 10^{-4}

128 bytes			**1024 bytes**		
r=10 w=10	n=500 f=100	RR = 1.0 RTT_{avg} = 0:99	r=10 w=10	n=500 f=100	RR = 1.0 RTT_{avg} = 0:89
r=100 w=10	n=500 f=100	RR = 1.0 RTT_{avg} = 0:80	r=100 w=10	n=500 f=100	RR = 1.0 RTT_{avg} = 0:76
r=25 w=10	n=5000 f=100	RR = 1.0001 RTT_{avg} = 0:53	r=25 w=10	n=5000 f=100	RR = 1.0018 RTT_{avg} = 0:57
r=100 w=50	n=1000 f=100	RR = 1.001 RTT_{avg} = 0:51	r=100 w=50	n=1000 f=100	RR = 1.0 RTT_{avg} = 0:56
r=50 w=50	n=500 f=200	RR = 1.0 RTT_{avg} = 0:73	r=50 w=50	n=500 f=200	RR = 1.0 RTT_{avg} = 0:73

2. Random drop probability = 10^{-8}

128 bytes			**1024 bytes**		
r=10	n=500	RR = 1.0	r=10	n=500	RR = 1.0
w=10	f=100	RTT_{avg} = 0:82	w=10	f=100	RTT_{avg} = 0:95
r=100	n=500	RR = 1.0	r=100	n=500	RR = 1.0
w=10	f=100	RTT_{avg} = 0:59	w=10	f=100	RTT_{avg} = 0:56
r=25	n=5000	RR = 1.0	r=25	n=5000	RR = 1.0
w=10	f=100	RTT_{avg} = 0:55	w=10	f=100	RTT_{avg} = 0:56
r=100	n=1000	RR = 1.0	r=100	n=1000	RR = 1.0
w=50	f=100	RTT_{avg} = 0:63	w=50	f=100	RTT_{avg} = 0:64
r=50	n=500	RR = 1.0	r=50	n=500	RR = 1.0
w=50	f=200	RTT_{avg} = 0:69	w=50	f=200	RTT_{avg} = 0:72