Wireless Network (CSE/ECE 538)
Assignment 2

Maximum Marks: 20

Submission Instructions

- Prepare a report with all the assumptions, topology, plots, and chosen attributes, etc.
- Submit all the source codes along with the captured pcap traces and the report pdf in a zip file.
- Naming convention should strictly be A2_FirstName_RollNo.zip

Questions

1. Simulate a network having two routers, R1 and R2, connected directly through a P2P link. Here,
   (a) Router R1 is acting as an AP serving four WiFi (any standard is fine) devices W1 to W4. [2]
   (b) A computer C1 is also connected to R1 but using a wired connection. [2]
   (c) Router R2 has two computers, C2 and C3, connected to it via an Ethernet network. [2]

   Assume the link attributes and report in the submitted PDF file along with the right topology. [2]
2. For the case when all the devices are running, consider C1 as a server and C3 and W4 as clients. Send a total of 100 packets of size 2048 bytes from the server to each of the clients. Now run the following applications.
   (a) UDPEcho Application: Capture the packet traces on the server and both the clients[2]. Parse the file using a script to get network latency from the server to both the clients and log their mean in the report file[2]. Besides this, generate a plot showing latency for all the received packets (you can ignore the lost ones)[2].
   (b) TCP Application: Utilize the tcpexample.cc file provided with the assignment to run TCP application on the nodes[2]. Log the mean throughput in the report for both clients with corresponding plots[2+2]. You are not allowed to use Wireshark's feature to get the plot. Write a script file to parse the pcap traces to calculate the throughput.