

Instruction:

Open cmd, and go to the directory of the program, type "python analysis_pcap_tcp.py", followed by a space and the pcap file name you are trying to analyze. Example is shown below.

```
python analysis_pcap_tcp.py assignment2.pcap
```

If you want to change the src ip address or the destination ip address, you need to change the value in the analysis_pcap_tcp.py file, you can change the value of sender_ip and the value of receiver_ip at the top of the file.

Once you finish entering your command, press "Enter", and the result will be printed out in the cmd, sample result is shown below.

TCP Flow # 1

Source IP: 130.245.145.12 Source port: 43498

Destination IP: 128.208.2.198 Destination port: 80

Transaction #1

Sender -> Receiver Sequence number: 705669103 ACK number: 1921750144 Window size: 3

Receiver -> Sender Sequence number: 1921750144 ACK number: 705669127 Window size: 3

Transaction #2

Sender -> Receiver Sequence number: 705669127 ACK number: 1921750144 Window size: 3

Receiver -> Sender Sequence number: 1921750144 ACK number: 705670575 Window size: 3

Total throughput: 5020164.61 bytes/sec

Congestion window sizes: 10, 22, 46

Triple duplicate acks retransmissions: 2

Time outs retransmissions: 1

Other retransmissions: 1

Total retransmissions: 4

TCP Flow # 2

Source IP: 130.245.145.12 Source port: 43500
Destination IP: 128.208.2.198 Destination port: 80

Transaction #1

Sender -> Receiver Sequence number: 3636173852 ACK number: 2335809728 Window size: 3

Receiver -> Sender Sequence number: 2335809728 ACK number: 3636173876 Window size: 3

Transaction #2

Sender -> Receiver Sequence number: 3636173876 ACK number: 2335809728 Window size: 3

Receiver -> Sender Sequence number: 2335809728 ACK number: 3636175324 Window size: 3

Total throughput: 1212992.22 bytes/sec

Congestion window sizes: 10, 22, 44

Triple duplicate acks retransmissions: 4

Time outs retransmissions: 90

Other retransmissions: 1

Total retransmissions: 95

TCP Flow # 3

Source IP: 130.245.145.12 Source port: 43502
Destination IP: 128.208.2.198 Destination port: 80

Transaction #1

Sender -> Receiver Sequence number: 2558634630 ACK number: 3429921723 Window size: 3

Receiver -> Sender Sequence number: 3429921723 ACK number: 2558634654 Window size: 3

Transaction #2

Sender -> Receiver Sequence number: 2558634654 ACK number: 3429921723 Window size: 3

Receiver -> Sender Sequence number: 3429921723 ACK number: 2558636102 Window size: 3

Total throughput: 1416468.38 bytes/sec

Congestion window sizes: 10, 22, 44

Triple duplicate acks retransmissions: 0

Time outs retransmissions: 0

Other retransmissions: 1

Total retransmissions: 1

Total TCP flow count: 3