

Computer Networks: Home work assignment 2

Assigned: Tuesday, Apr 2

Due: Tuesday, Apr 15, 2:00 PM

(LATE SUBMISSIONS WILL NOT BE ACCEPTED)

(INDIVIDUAL EFFORT ONLY. ABSOLUTELY NO COLLABORATION)

1. Peterson and Davie: Exercises: Chapter 5, Question 14.
2. Peterson and Davie: Exercises: Chapter 5, Question 17.

3. **libpcap packet capture library**

Libpcap is a general purpose packet capture library. tcpdump is built using libpcap. You can learn more about libpcap using the manual pages 'man pcap'. There is also an online tutorial available at <http://reactor-core.org/libpcap-tutorial.html>. For this question, you will

- 1 Develop a tcp program which will, open a connection from host A to host B, write a 1 byte packet and close the connection.
- 2 Develop a program using libpcap to capture the packets transmitted for this tcp transaction. Specifically, measure the sequence numbers used by both sides of the transaction.

4. **tcp connection resetting**

We will develop a program that will intercept and disconnect a tcp connection. An description of this problem is available at <http://cs.baylor.edu/~donahoo/NIUNet/hijack.html>. We will use the libnet tool (available at <http://www.packetfactory.net/projects/libnet/> to develop this tool. For this question, you will

- 1 Develop a tcp program which will, open a connection from host A to host B and continuously send a packet.
- 2 Develop a program using libpcap and libnet to capture packets (to learn the sequence numbers) and inject packets to disconnect this tcp connection.