Do this lab exercise with your assigned team members.

1. You will work with ssh in this lab exercise. In order that others can ssh into your host machine, please put the following command 
   `/etc/init.d/ipchains stop` in your rc.local files.

2. You will need to install tcpdump on your host machine. I will pass on a floppy for this installation. Ensure that parts 1-2 are done, before you carry out the rest of the exercise.

3. Consult the man pages for tcpdump, netstat, and traceroute.

4. Make a directory in your personal account’s home directory named dump-files. Ensure that all the files in this directory are readable by the instructor account. Before doing the rest of the exercise, use tcpdump -w (in the background) to collect in dump-files/dlink-frames all the frames that arrive at the D-Link network interface of your host, and in dump-files/3com-frames all the frames that arrive at the 3Com network interface of your host. Keep collecting frames until you are done with parts 4-7 of the exercise. _____/ 4 pts.

5. The Little Internet has six class C networks: 192.168.2.0, 192.168.3.0, 192.168.4.0, 192.168.5.0, 192.168.6.0, and 192.168.7.0. For each class network N, choose a network interface with an IP address in N.
6. For each interface chosen above, log into the intruder account on the host with the interface using `ssh`, and then start an xterm. Do not logout until you are done with the remainder of the exercise.

7. Using `netstat`, determine what TCP connections are established on your remote server. Make a table that lists these connections with the TCP ports of the client and server processes. _____/4 pts.

8. Use `traceroute` to determine the route packets take from your host to the six interfaces chosen above. Put the routes you find into a table. Mark the routes that do not satisfy the Little Internet Routing Specification. _____/6 pts.

9. Do this part of the exercise after you are done with parts 3-8.

   (a) The *six degrees of separation* myth says that everyone in the world is connected to everyone else by no more than six degrees of separation, i.e., six people in a chain. Based on your results in part 8, how many hosts did you cross when communicating with the six destinations of your choice?. Record your findings. _____/5 pts.

   (b) Stop the tcpdump processes and use `tcpdump -r` to put the header information of the frames in `dump-files/dlink-frames` and `dump-files/3com-headers` into `dump-files/dlink-headers` and `dump-files/3com-headers` respectively. _____/1 pt.

   (c) How many frames arrived at the D-Link and 3Com network interfaces?. _____/2 pts.

   (d) How many ARP packets arrived at the D-Link and 3Com network interfaces?. What parts (3-8) of the above exercise involve ARP packets?. _____/2 pts.

   (e) How many ICMP packets arrived at the D-Link and 3Com network interfaces?. What parts (3-8) of the above exercise involve ICMP packets?. _____/2 pts.

   (f) How many UDP packets arrived at the D-Link and 3Com network interfaces?. What parts (3-8) of the above exercise involve UDP packets?. _____/2 pts.

   (g) How many TCP packets arrived at the D-Link and 3Com network interfaces?. What parts (3-8) of the above exercise involve TCP packets?. _____/2 pts.
For your lab report, hand in the three sheets of this exercise, the two required tables, and your answers to 9.