Lab 1 (Due on Jan 27, 2011)

Section 1
The questions in this section are about ‘your’ computer which can be your actual computer, a borrowed computer or a computer from one of the instructional computing labs. The computer which you use should have internet access (wired or wireless).

1) What computer you are using to answer the questions here? Does it have a name, if yes, what name it is? Where is the computer sitting while you are doing this assignment?

2) What is your computer’s IP address? How did you find your computer’s IP address? Why is such an address needed?

3) What is your computer’s MAC address? What does MAC stand for? How did you find your computer’s MAC address?

4) (a) What is the subnet mask of your computer?
    (b) Do a bitwise ‘and’ operation of the subnet mask and your computer’s ip address and give the result.
    (c) What is the technical name for the answer you got in (b)?

5) What is a ‘default gateway’? Find your computer’s default gateway.
Section 2
For the next few questions you will need to use the ‘traceroute’ and the ‘ping’. On a Mac with OS X, start a Terminal application from your Utilities folder. Inside a Terminal application, the commands are the same as for UNIX. For a PC, Choose ‘Run’ off the Start menu and type cmd in the box provided. Now you can type tracert for a traceroute or ping for a ping functionality. For whois, on a UNIX system you can type whois, but it is probably easier to just use the whois search at http://www.internic.net/whois.html or http://www.whois.net/ or http://www.whois.sc/ (as the PC people will have to do).

1) What is the IP address of www.ucsc.edu?

2) Trace the route to www.ucsc.edu. How many hops do you find between you and www.ucsc.edu?

3) Use the whois command to find the ‘hostname’ of one of the DNS servers (name servers) of
   (a) Ucsc.edu
   (b) Wikipedia.org