>>> Assignment #1 for Computer Networks (CNT 4004) <<<
Due on 09/08/10 at the beginning of class

This assignment covers material from chapter 1 of the textbook and from roughly the first two weeks of class lecture.

Problem #1

If is very important that you know what the class website contains. So, for this first "fun" problem you are to go on a frog hunt. There are images of frogs hidden on one or more pages (only on pages that I have created) on the class website. Find all the frogs. Give the URLs of the page(s) with the frogs.

Problem #2

Give the URL of the where the solutions manual for the textbook can be found (for any edition).

Problem #3

a) What are the fundamental measures of a communication system?

b) What are the open challenges in communication systems?

c) What are the basic communications tasks that define networking (and what we will study)?

d) What is the fundamental difference between circuit switching and packet switching?

Problem #4

Precisely define protocol, interface, peer process, and the layering concept (the definitions in the class lecture are better than what you will find in the text book).

Problem #5

a) Sketch the five layer Internet protocol stack model used in our textbook. For each layer, describe its function in one or two sentences.

b) Sketch a packet (i.e., show the headers and trailers) that would result from this five-layer model. Be sure to show all header and trailers that could be present (even if you know that they are not present in a "real" Internet packet).

Problem #6

Answer the following questions about standards:

a) WiFi is a standard, so is Ethernet. Identify the name of the standard for each of these communications protocols.

b) How does one become of member of the IETF.

c) Who can contribute to Internet standards?

Problem #7

Do Problem P6 (page 74) from the text book

Problem #8

Do Problem P11 (page 75) from the text book

Problem #9

Wireshark is a very powerful tool for studying what is really going on at the wire (or wireless!) level. We will use Wireshark as a verb in the class, but for this problem you need to download and install Wireshark (the noun) on your PC and submit a screenshot serving as "proof" that you were able to download, install, and run it (hint: you want to show a Wireshark capture screenshot).

Problem #10

For this course it is very important that you have a C development environment that you are comfortable with. Now is the time to verify that your development environment is in working order. For this problem you are to download `weblite.c` from the class source code page, build it, and execute it. For hints on how to do this, see http://www.csee.usf.edu/~christen/class2/webliteScreenShot.jpg. Your execution should look just like the screen shot in the previous given URL (however, your build need not be done using bcc32 as I show in my example in the screenshot). Take a screenshot (<Alt-PrtSc> in Windows) of your execution and submit it for this problem.

Note:

The TA and I are here to help you! Make use of help if you need it.