# Network Design Paper
# IS 280 – Data Communications Systems – Fall 2007

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The purpose of this paper is to demonstrate that you can design a simple household network and explain it on paper.

The title of the paper shall be "Home Network Design for X" where X is replaced by the name of the person for whom the network is intended. Typically this should be your parents or your family, but other alternatives are acceptable. This person is your client.

The finished paper shall be printed on normal printer paper using margins of 1.25 inches left and right, top and bottom. The font shall be Verdana (if it is available), ten points. The lines shall be single-spaced. It is expected that the paper will be about five pages in length, but longer or shorter is okay as long as you meet the other requirements. (If your paper is very short, make sure you understood the requirements properly.)

## 1  Network Diagram

One entire page of the paper shall be a diagram of the proposed network, created using Microsoft Visio or an equivalent software package.

You can see Scott Mikolyski to get a copy of Visio to be installed on your own personal computer. It is available to us through the Microsoft Developers Network.

## 2  Current Situation

Include a section of your paper that describes the existing situation at your client's house. Assume (or pretend) that your client already has three computers and a printer. Two of the computers are desktop models without wireless capability. One is a laptop that has wireless capability. The printer is an inexpensive laser printer (e.g., low end "Brother").

Currently the printer is attached to one of the desktop computers, and anyone wishing to print must do so from that machine.

## 3  Goals

Include a section stating your goals.

Your task is to bring in Internet into the house and to connect the three computers into a local area network. The printer should become a stand-alone network printer that can be used from any computer without the other computers being turned on. Each computer should be able to surf the Internet at the same time that the other computers are in use.

You must also provide Network Attached Storage (NAS) on your network. The storage should hold at least 100 Gigabytes.

Optionally (to improve your grade) you can include other network-based features such as security cameras or household control features, such as devices to turn on and off the lights, or lock and unlock doors, or serve music or video.

## 4  Proposal

Include a section that spells out your exact recommendations.

Go onto the Internet or visit one or more actual computer stores. Select the exact components you think might be appropriate. List each component. Give its name, manufacturer, model number, price, and other features. Explain briefly why this component is being recommended. (What does it do? Why do we want it? Was it the cheapest?)

# 5 Installation Instructions

Include a section that explains how to set up this network, assuming that the recommended parts have been acquired.

Give a step by step set of instructions suitable to be followed by someone who is reasonably intelligent but has not had a networking class. Tell where to put things. Tell how to connect them. Tell how to configure them. Tell how to verify that the network is operating properly.

# 6 Grading

This paper is worth 50 points, which is 5% of your final grade.

Points are earned for completing major parts of the assignment.

Clarity: Can I understand what you are saying? (Clear, a little confusing, a lot confusing)

Workability: Do you have a workable network design? (It would work, it has minor problems, it has major problems)

Illustration: Do you have a Visio diagram that illustrates it? (Impressive, Adequate, Confusing)

Components: Did you specify the exact components recommended? (Specific, General, Nebulous)

Installation: Do your installation instructions convince me that you know what you are talking about? (Clear and workable, unworkable, confusing)

You should be able to get full credit by doing a reasonable job. You will lose points if you don't complete the task.

# 7 Due Date

The paper is due on Monday, October 29, 2007, to be handed in at the beginning of class.