

## Assignment 3: “The Internet, Part III”

*due by section during the week of 23 February 1999*

For this assignment, you *must* e-mail your answers to your teaching fellow. Be sure to send the e-mail *before* your section meets during the week of 23 February 1999. Your teaching fellow’s e-mail address can be found on the blue handout entitled “Staff Information” that was distributed during lecture on 16 February 1999.

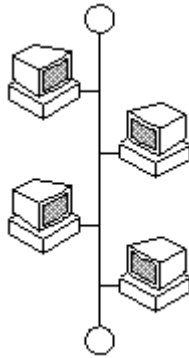
You may send the e-mail from either your FAS account or any other e-mail account that you may have.

If, for some reason, you are having problems with your e-mail account(s), please speak with your teaching fellow prior to this assignment’s deadline, lest you be penalized for late work.

You do *not* have to turn in your answers on paper.

### Short answers. (6 points each.)

1. Are the four computers pictured below participating in a bus network, ring network, or star network?



2. Consider the following scenario. It’s just after 7:30 P.M. on Tuesday night, and you’ve just finished enjoying another two-hour exploration of personal computers and the Internet in your favorite Extension School course. With your mind still racing with thoughts of firewalls, hostnames, network topologies, and the like, you hail a cab in Harvard Square for the ride home. After telling the driver your destination and settling into your seat, you decide to get a jumpstart on Assignment 3: “The Internet, Part III.” You smile as you read over the first question, realizing immediately that the four computers are participating in a—

“So, how was your day?” your driver interrupts.

*question continues on opposite side...*

You proceed to show off all of your new vocabulary, only to be interrupted again by your driver.

“Bandwidth,’ you say? What’s that?”

Define in one or more sentences what “bandwidth” means with respect to a computer network. Then, bearing in mind this driver’s familiarity with automobiles and roads, explain in one or more sentences what “bandwidth” means in layman’s terms.

3. Suppose you’re in the middle of networking your home office when you unexpectedly run out of Ethernet cabling. You head to CompUSA and ask the first salesman you see whether the store has any 10Base-T cables. The salesman’s response disappoints you. “10Base-T? Whatever do you mean?” You quickly explain that you simply want cabling based on the Ethernet standard. The salesman disappoints you further. “10? T? Whatever do you mean?”

Explain in one or more sentences what “10” and what “T” mean with respect to 10Base-T cabling.

4. Despite your clarity, your explanations are lost on the salesman. Exasperated, you throw up your hands and decide to forego networking your home office altogether. But you need at least one of your computers connected to the Internet, and so you ask the salesman what kinds of modems the store sells. He replies, “Oh, we’ve got 56K modems, cable modems, 33.6 modems, ISDN modems, and 28.8 modems.” Finally, a helpful response! But the salesman has failed to list these modems in order of decreasing speed.

Rank these five types of modems from fastest to slowest. That is, tell us which type is the fastest, which is the next fastest, and so on.

5. You already know that you can access CNN’s Web site by visiting `http://www.cnn.com`. But you can also access the site by visiting `http://207.25.71.25`, because 207.25.71.25 is the IP address of one of CNN’s Web servers. That is, `http://207.25.71.25` is a fully functional URL. Why does CNN never advertise its Web address as `http://207.25.71.25`? That is, explain in one or more sentences why it’s a good idea to refer to Web servers by their hostnames (*e.g.*, `www.cnn.com`) rather than by their IP addresses (*e.g.*, 207.25.71.25).
6. Building contractors often construct firewalls between stores so that a fire in one store cannot spread to another store—*i.e.*, so that flames in one store cannot access another store. In the world of networked computing, though, what is a firewall? Explain the term in one or more sentences.

*questions continue on next page...*

*The following two questions are designed to familiarize you with the process of getting online from home. We hope that, in answering these questions, you will learn what questions are important to ask when choosing an ISP. Even if you already have an ISP, we suspect that these questions may help you find a better deal. Ultimately, the aim of these questions is to empower you to get yourself online without another's help.*

### Investigating two ISPs. (54 points.)

7. In Assignment 2: "The Internet, Part II," you helped Joe User find Internet access. Now it's your turn to find Internet access.

Suppose you already have a computer as well as a modem at home. You've decided to get yourself online but haven't yet chosen an ISP. With so many ISPs nowadays from which to choose, though, how can you possibly make this decision? Furthermore, how can you find the best deal? (Incidentally, you ask yourself these questions rhetorically; don't answer these questions.)

You decide that you will research at least two ISPs before making your decision. After flipping through the local yellow pages and browsing the Web, you come up with several possibilities.

ISP	Web site	Telephone number
America Online	<a href="http://www.aol.com">www.aol.com</a>	(800) 827-6364
AT&T WorldNet Service	<a href="http://www.att.net">www.att.net</a>	(800) 967-5363
IBM Internet Connection Services	<a href="http://www.ibm.net">www.ibm.net</a>	(800) 455-5056
MCI WorldCom	<a href="http://www.mciworldcom.com">www.mciworldcom.com</a>	(800) 444-3333
MindSpring	<a href="http://www.mindspring.com">www.mindspring.com</a>	(888) 677-7464
SPRYNET	<a href="http://www.sprynet.com">www.sprynet.com</a>	(800) 777-9638

A listing of countless other ISPs can be found at [www.thelist.com](http://www.thelist.com).

What you must now do is contact *two* (2) ISPs and answer the following questions about *each*:

- What is the name of the ISP and the name of the service plan you researched (if any)?
- What is the ISP's one-time connect charge, if any?
- What is the ISP's monthly charge?
- How many free hours do you get, if any?
- What is the cost per hour if you exceed these free hours (if any)?
- Does the ISP supply you with an e-mail address?
- Does the ISP give you a particular browser to use, or do you have a choice? (For instance, Netscape or Internet Explorer.)
- What is the highest speed at which you can connect by modem? (E.g., 28.8 kbps, 33.6 kbps, 56 kbps, *etc.*)
- What is the telephone number and/or e-mail address for *customer support*?

*question continues on opposite side...*

You may find out the answers to the above questions (*a* through *i*) either by calling two ISPs or by visiting two ISPs' Web sites. We have given you the above list of Web sites and phone numbers to make contacting two ISPs easier. If you decide to visit the ISPs' Web sites, you'll likely find the information you seek by following links entitled "Access Plans," "Join," "Register," "Service Plans," "Services," "Sign Up," or the like. If you already have an ISP, it's fine to base one set of your answers on your existing service plan, provided you can answer all of the above questions.

Again, be sure to answer the above questions (*a* through *i*) for two (2) *different* ISPs. If an ISP offers more than one service plan, you can base one set of your answers on any of the plans, but base your second set of answers on a service plan offered by an entirely different ISP. That is, do not base both sets of answers on two different service plans offered by the same ISP.

*N.B.* This assignment does *not* require that you subscribe to an ISP. It simply requires that you find out the aforementioned information.

**Making your decision. (10 points.)**

8. Suppose that you must now choose between signing on with one of the two ISPs that you researched for the previous question. Based on your research, which of the two ISPs do you prefer? That is, explain in one or more sentences why you would choose one ISP over the other. If you are really displeased with both ISPs, why? (Before answering this question, consider how many hours of Internet access you would actually use each month. Also contemplate how much you are willing to pay for the convenience of having access to e-mail and the Web from home.)

**Extra credit. (5 points.)**

9. The fully qualified domain name of Yahoo's Web server is `www.yahoo.com`.

What is the IP address of Yahoo's Web server?