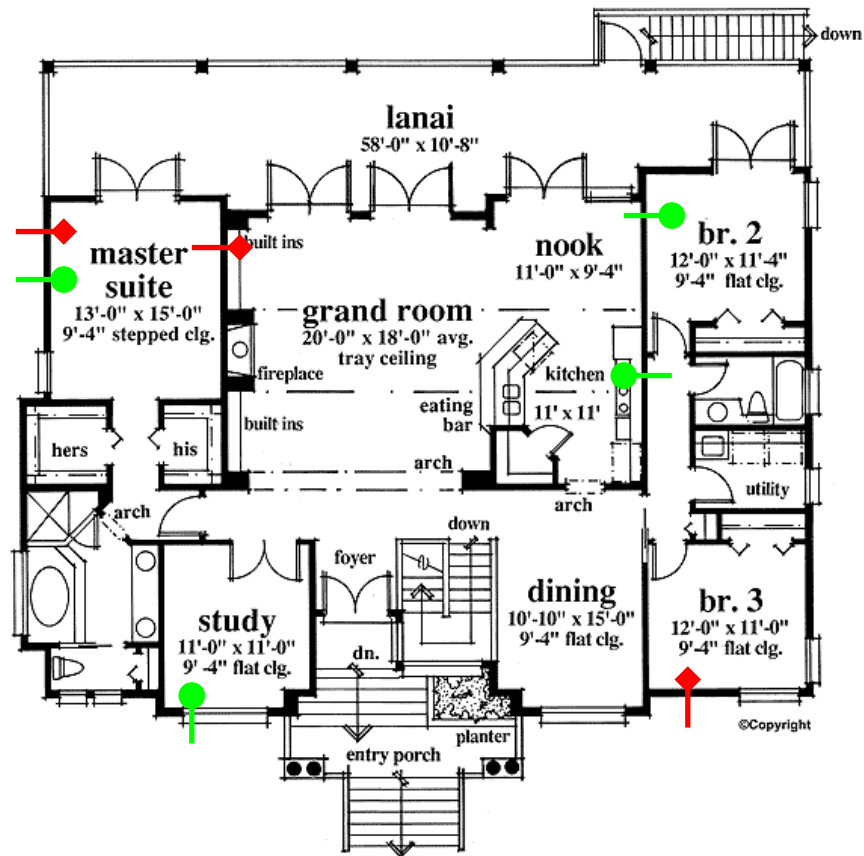


# EE334 PRACTICAL EXERCISE

## Network Capstone - Design a Home Network

Name: \_\_\_\_\_ Section: \_\_\_\_\_ Date: \_\_\_\_\_

- I. **Equipment.** Laptop computer.
- II. **Background.** Following graduation from USNA, you are moving to Pensacola, FL where you plan to rent a house with three of your friends. You all wish to have your own personal computer with an internet connection. You also want to network your computers together so you can play games, share flight school gouge and use a common printer. The floor plan of your rental home is shown in figure 1. The master suite, grand room and bedroom #3 all have existing cable jacks. The master suite, kitchen, study and bedroom #2 have existing phone jacks. Phone and cable locations are labeled on figure 1.





- Phone Jack 
- Cable Jack 

Figure 1.

III. **External Connection.** Your first task is to determine how you will connect your local area network to the internet. Some options include dial-up, cable modem, DSL and satellite . . . . Use your laptop to research different options and choose one.

Some good sites to start with are: [www.earthlink.net](http://www.earthlink.net)  
[www.cox.com/gulfcoast/HighSpeedInternet/](http://www.cox.com/gulfcoast/HighSpeedInternet/)  
[www.howstuffworks.com](http://www.howstuffworks.com)

1. Which internet connection did you choose?
2. Why did you choose this type of connection?
3. How much per month does your connection cost?
4. Does it require any special equipment? How much does this equipment cost?
5. What is your connection's data rate (speed)? Is there a difference between the upload and download speeds?

IV. **Local Area Network.** Next, you must determine how you will network each of your computers. Four computers must be networked together to share a common external internet connection and a printer. There are several different ways to approach the problem. A few examples are wireless, Ethernet, power line or phone line.

Some resources to start with are: [linksys.com/edu/  
computer.howstuffworks.com/home-network.htm](http://linksys.com/edu/computer.howstuffworks.com/home-network.htm)  
[www.bestbuy.com](http://www.bestbuy.com)

1. Which type of network did you choose? Why? List two pros and two cons of the network you chose.

2. What components do you need to build your network and how much do they cost? Don't forget network cards for your computers, wiring and any other additional hardware.
  
3. What is the data rate of the network type you chose? Is it faster or slower than your external connection to the internet? Why is this important?
  
4. What is a firewall? Does your system have one?

V. **Software.** Assume all your computers use the same operating system as the laptop you are currently using (Windows XP). You would have to configure Windows so that your computers recognize each other on the network by choosing a unique name for each computer and a name for the network or workgroup. You would also have to choose a name for your common printer.

1. What is the unique name of the computer you are currently using (Do not change it!)?
  
2. What is the name of the network (workgroup) to which the computer belongs?
  
3. What is the IP, subnet mask and subnet that the computer belongs to?
  
4. You now wish to share the flight school gouge folder on your hard drive with your roommates. However, you do not want them to have access to your personal pictures, emails or any other files. How can you use windows to accomplish this?

VI. **Report.** The final step is to convince your instructor that you have made a wise choice and have identified all the necessary hardware. Gather your thoughts and give a quick verbal report to your instructor concerning the network options you chose and why you made them.