HoA#3: Part 2: Modern Ethernet

This class assignments builds on Part One and dives into the improvements of 10BaseT. Specifically, this assignment covers 100-megabit standards, the Gigabit Ethernet standards, and BEYOND!

Please break into three groups. Each group will make a PPT. In the PPT, each group will answer the specific questions below related to their group. When finished, each group will present to the class the information they covered.

# Group 1: 100-Megabit Ethernet

1. When going from 10BaseT to 100BaseT, what characteristics needed to stay the same? Why?
2. What is 100baseT4 and what is 100BaseTX? What dominates today?
3. What are the typical characteristics of 100BaseT?
4. Describe 100BaseFX and why it would be preferred over 100BaseT.
5. Discuss full duplex and half duplex.

# Group 2: Gigabit Ethernet

1. Explain the transition to Gigabit Ethernet.
2. Compare and contrast 1000BaseT, 1000BaseCX, 1000BaseSX, and 1000BaseLx.
3. Explain the GBIC and the SFP. What is their primary purpose?
4. Discuss what is needed to implement multiple types of Gigabit Ethernet.

# Group 3: Ethernet Evolutions & Beyond!

1. Explain the idea of a backbone. What is the typical setup?
2. What are backbones so important?
3. In MS Visio, recreate the drawing of Figure 4.11. Describe what is happening and put it into the context of WWU.
4. What can we expect in terms of the future of Ethernet? What standards, speeds, etc.

# All Groups: Applying What You’ve Learned

1. Go to <https://hub.totalsem.com/content/2302#path=2302,2314,2315> and complete the “Manage Duplex Settings” Activity under chapter 5. Explain what is happening.
2. ***Scenario:*** Imagine that you are hired by a medium sized organization to design a network for a single building. The network has the following characteristics: There are 4 main floors. There are five computers on each floor. There are two servers on the first floor and one server on the third floor. Each floor also has one printer to which each computer should be able to connect.

* Using what you have learned, provide a computer-generated sketch of the network using MS Visio.
* Provide documentation that summarizes each device and how data is transferred throughout the network. In the summary, include:
  + The overall main idea of the design
  + The topology (logical and physical)
  + The standard for the cords (100BaseT, etc.)
  + Whether you used switches, hubs, etc.
  + Is your system full duplex or half duplex?
  + Does your network use a backbone? Why or why not?