Welcome to CMSC 122 Programming via the Web

Please put laptops and electronic devices away... 😒
Primary Objectives

• Basic Programming
• Procedural solutions
• Web design
  – HTML (defines “structure” of web pages)
  – CSS (defines “style” of web pages)
  – Javascript (makes web pages DO things)
What Can You Expect?

• Significant work load
• Challenging projects
• Analytical thinking required
• You may surprise yourself...
Course Syllabus

<Queue Elevator Music....>
Ways to Succeed

- Come to EVERY class
- Study
- Ask questions
- Come to office hours
- Start projects **immediately**
- **Do not procrastinate!**
More Things to Discuss

- Lecture slides
- Office Hours
- Project deadlines
- Classroom Etiquette
- Emailing your instructor and TAs
- Class announcements
Networks

• The “Internet” is a network... What’s a network?
IP Addresses

• Unique address for each machine
  – E.g: 128.85.117.163
  – Gradually switching to “IPv6”, e.g:
Ports

• Each network application (program) has its own “Port Number”
  – Range is 0 to 65535

• Some port numbers are reserved:
  – 21  ftp  (transferring files)
  – 23  telnet  (remote terminal)
  – 80  http  (web servers)
Packets

• What are packets?
• What’s in one?
  – Destination address and port
  – Sender address and port
  – Data
Internet Protocols (2 Kinds)

1. **UDP** (User Datagram Protocol)
   - “Packet Oriented”
   - Simple
   - Fast
   - Unreliable... Problems with packets:
     - They never arrive.
     - They are garbled/corrupted
     - They arrive in the wrong order
Internet Protocols (2 Kinds)

2. **TCP** (Transmission Control Protocol)
   - “Connection Oriented”
   - Complex
   - Lots of overhead
   - Reliable