

# Network Protocols

CPSC 328 - Network Programming

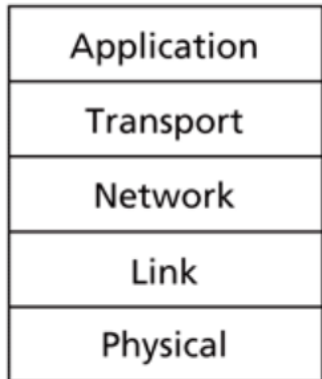
# Protocol

- Syntax
  - Data formats
  - Signal levels
- Semantics
  - Control Information
  - Error handling
- Timing
  - Speed matching
  - Sequencing

# Layered Protocol Architecture

- Each layer is layer-n
- Layer-n Protocol Data Units (PDUs)
- Protocol Stack

# Internet versus OSI Stacks



# Transport Layer Protocols

- Transmission Control Protocol (TCP) - stream sockets
- User Datagram Protocol (UDP) - datagram sockets
- Choose the protocol based on the application

# Connectionless versus Connection-Oriented

- Protocol for each
- Benefits of each
- Drawbacks of each
- Difference from the developer's view
- Why would a developer select UDP?
- What if an application requires both primary characteristics?

# Discussion Question

- Connectionless or Connection-Oriented?
  - Telnet
  - File Transfer Protocol (FTP)
  - Domain Name System (DNS)
  - Hypertext Transfer Protocol (HTTP)
  - Streaming
  - Simple Mail Transfer Protocol (SMTP)
  - Voice over IP (VoIP)