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## HOMEWORK 1

1. Three criteria necessary for an effective and efficient network is Performance, Reliability and Security.

2. Difference between half-duplex and full-duplex transmission modes

Half-duplex: have two directions, but can process only direction in 1 time. Example: Baofeng Radio

Full-duplex: have two directions, can process two directions in 1 time but needed to divide road map. Example: telephone call

- 3. Protocols needed because it is special set rules that end points in a connection between two computers to make communication each other.
- 4. The factors that determine whether a communication system in a LAN or WAN:

LAN: for connects some hosts in a single office, building or campus.

WAN: interconnects connecting devices such as switches, routers or modems.

- 5. Six devices are arranged in a mesh topology. We need 15 cables and 5 ports for each device.
- 6. The unit of data send or received at each of the following layer is:
  - C. Data-Link Layer
- 7. Layers of the TCP/IP protocol suite:
  - B. Responsibility for handling frames between adjacent nodes
  - C. Transforming bits to electromagnetic signals