Basics:

Network Classification Network Architecture Delay Models Implementation: Protocol Design



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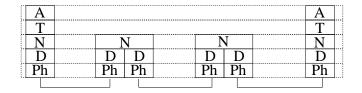
Application Transport Network Data Link Physical

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Layered Architecture



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Functionality

- Reliable Delivery of Frames
- Flow Control
- Error Detection
- Error Correction

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Multiaccess Media

Ethernet

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Multiaccess Media

Wavelan

Cocktail Party

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- "Don't interrupt when someone else is speaking"
- "Raise your hand if you have a question"
- "Give everyone a chance to speak"

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- Channel Partitioning (Cellular Wireless Networks)
- Random Access (Ethernet, WiFi)
- Taking Turns (Token Ring)

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Functionality

- Path Determination (Routing)
- Switching
- Addressing

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Protocols

UDP

• Application Multiplexing/Demultiplexing

Error Detection

• TCP

- Application Multiplexing/Demultiplexing
- Error Detection
- Reliable Data Transfer
- Congestion Control

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Protocols

UDP

- Application Multiplexing/Demultiplexing
- Error Detection
- TCP
 - Application Multiplexing/Demultiplexing
 - Error Detection
 - Reliable Data Transfer
 - Congestion Control

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Transport Layer - Network Layer

- Network Layer Protocols: provide a logical communication between hosts.
- **Transport Layer Protocols:** provide a logical communication between processes running on different hosts.

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Protocols

- DNS
- P2P



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Protocols

DNS

• P2P



Protocols

- DNS
- P2P



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