

# iso osi & tcp/ip notes (my own)

teacher say these are models for how networks talk  
honestly first time it felt like too many layers but its okay now

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## OSI model (7 layers)

OSI = Open Systems Interconnection

it got **7 layers** (yeah a lot lol)

i remember it with the phrase: *Please Do Not Throw Sausage Pizza Away*  
(Physical, Data link, Network, Transport, Session, Presentation, Application)

### layers quick rundown (my wording)

#### 1. Physical

bits, cables, signals, actual wires  
like voltage, fiber, connectors

#### 2. Data Link

MAC addresses, switches, frames  
also error detection a bit

#### 3. Network

IP addresses, routing, packets  
routers work here  
IPv4, IPv6

#### 4. Transport

TCP / UDP, ports, segments  
makes sure stuff arrives (or not, if UDP lol)

#### 5. Session

makes sessions between apps, start/end connections  
not super visible to us beginners

#### 6. Presentation

data format, encryption, compression  
kinda translator layer

## 7. Application

where actual apps interact  
HTTP, FTP, DNS, email etc

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## TCP/IP model (4 layers)

tcp/ip is like simpler version, used in real world more  
it has **4 layers** (some classes say 5 but teacher uses 4)

1. **Network Interface** (or Link layer)  
similar to OSI layers 1 + 2  
deals with MAC, cables, frames
  2. **Internet layer**  
routing, IP addresses, packets  
basically OSI layer 3
  3. **Transport layer**  
TCP / UDP, ports  
same idea as OSI layer 4
  4. **Application layer**  
everything above, protocols like HTTP, DNS, FTP  
like OSI layers 5,6,7 combined
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## main differences i note down

- **OSI = 7 layers** (the long detailed model)
- **TCP/IP = 4 layers** (practical real world model)
- OSI is more theory, TCP/IP is more implementation
- OSI splits high-level stuff into 3 separate layers
- TCP/IP just merges them into one big Application layer

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## **random extra notes (my brain things)**

- TCP is reliable (acknowledge, resend), UDP is “just send it bruh”
- routers = layer 3 (network)
- switches = mostly layer 2 (mac)
- hubs = layer 1 (pls nobody use them lol)
- when confused, map OSI to TCP/IP:
  - L1+L2 → Network Interface
  - L3 → Internet
  - L4 → Transport
  - L5+L6+L7 → Application

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## **small cheat phrase i wrote**

**OSI:** “Please Do Not Throw Sausage Pizza Away”

**TCP/IP:** i just remember it's 4 layers so less headacheee