The Anatomy of the Internet

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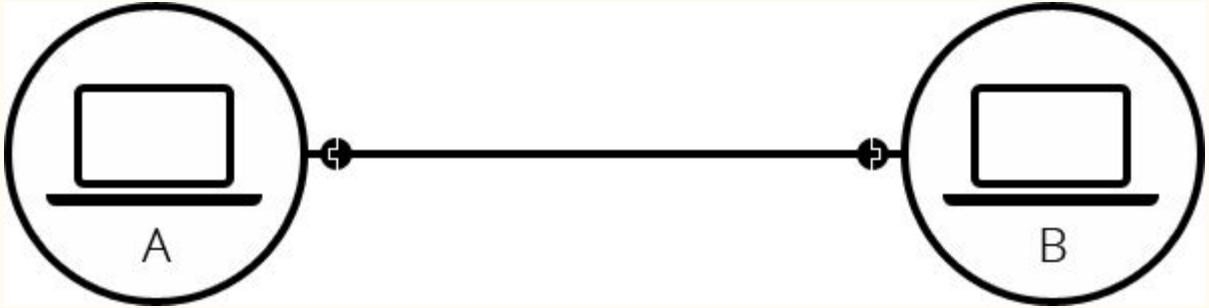
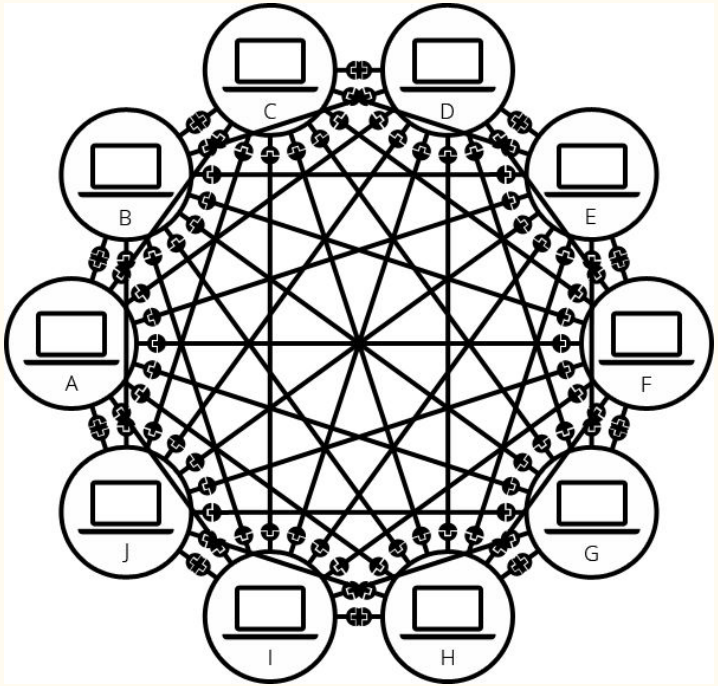
I write code by hand □, but dream of managing coders by head 🤵

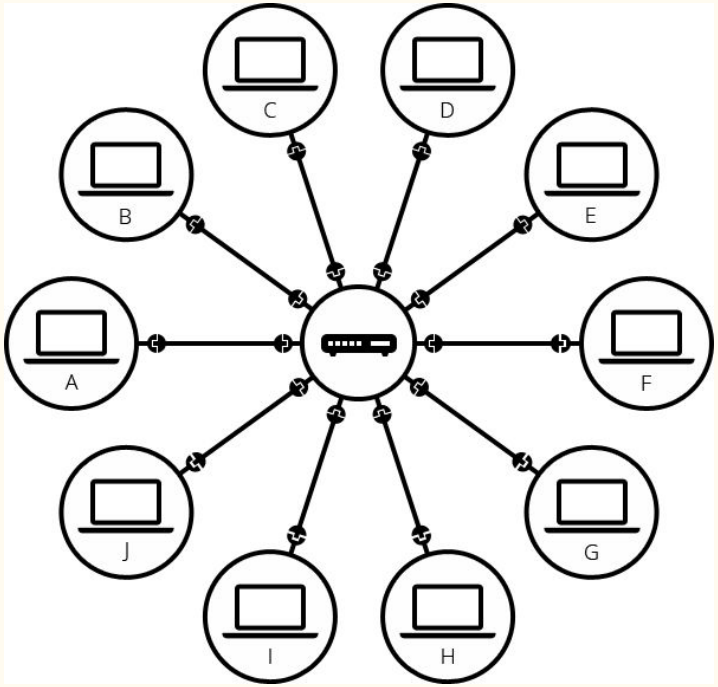
Let’s connect two computers!



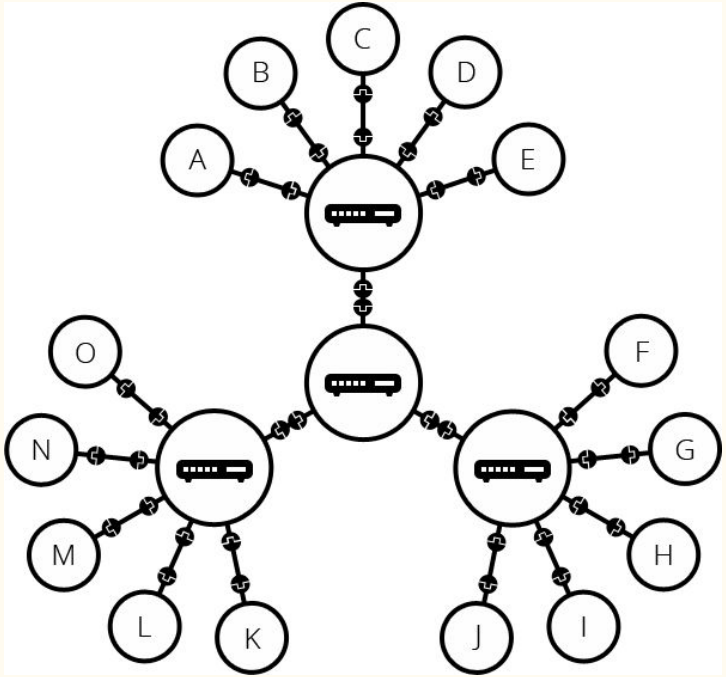
What if more than 2?



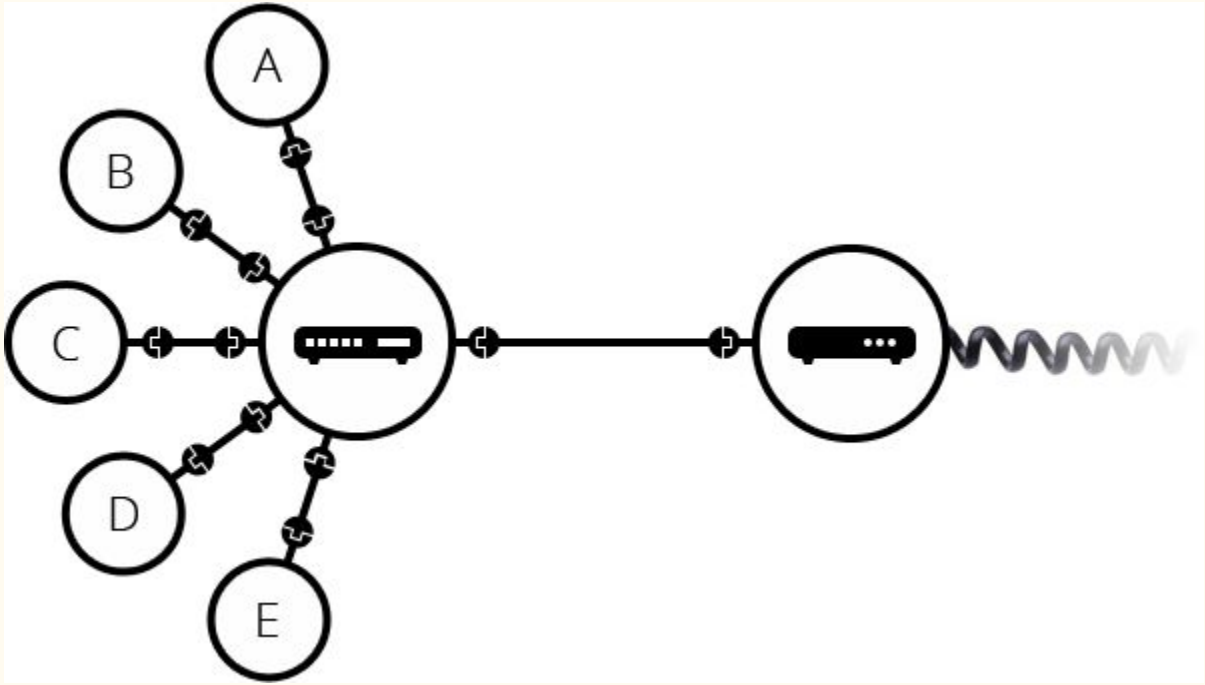
Maybe router?



Let’s scale everything



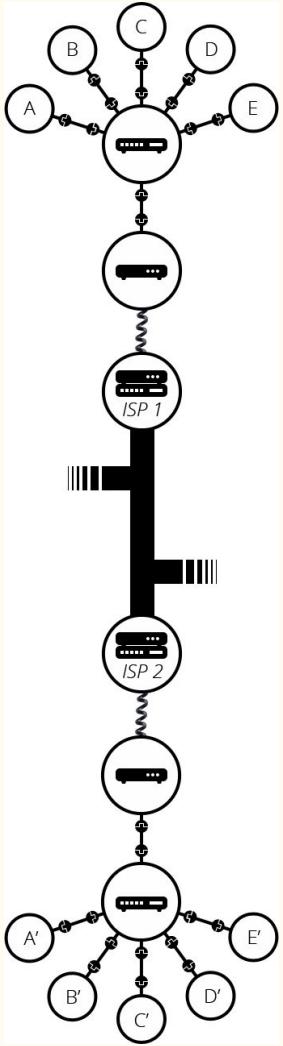
What about modem?



And connect to the world

ISP — Internet service provider (ISP), company that provides Internet connections and services to individuals and organizations.

Your **modem** is a box that connects your home network to the wider Internet. A **router** is a box that lets all of your wired and wireless devices use that Internet connection at once and also allows them to talk to one another without having to do so over the Internet.



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Open Systems Interconnection Model

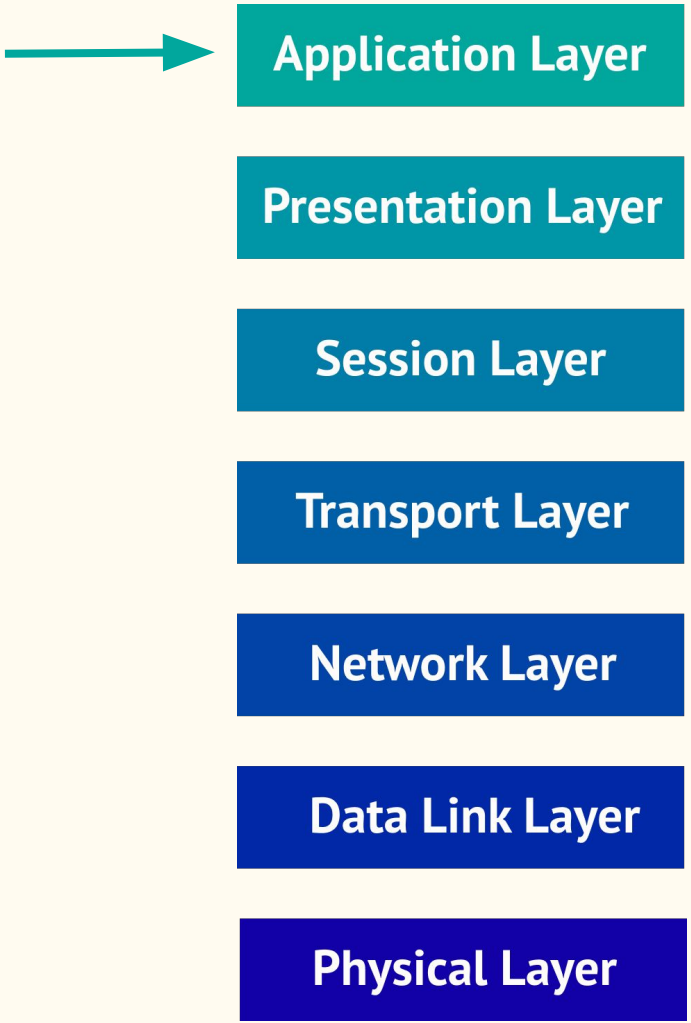
OSI model is a conceptual model that characterises and standardise the communication functions of a telecommunication or computing system without regard to its underlying internal structure and technology

Application Layer	**End User Layer /** HTTP, FTP, SSH
Presentation Layer	**Syntax Layer /** SSL, IMAP, JPEG
Session Layer	**Sync and send to port /** Sockets
Transport Layer	**End-to-end connections /** TCP, UDP
Network Layer	**Packets /** IP, ICMP
Data Link Layer	**Frames /** Ethernet, Switch, Bridge
Physical Layer	**Physical Structure /** Wireless, Coax

What happens when...

Uniform Resource Locator (URL)

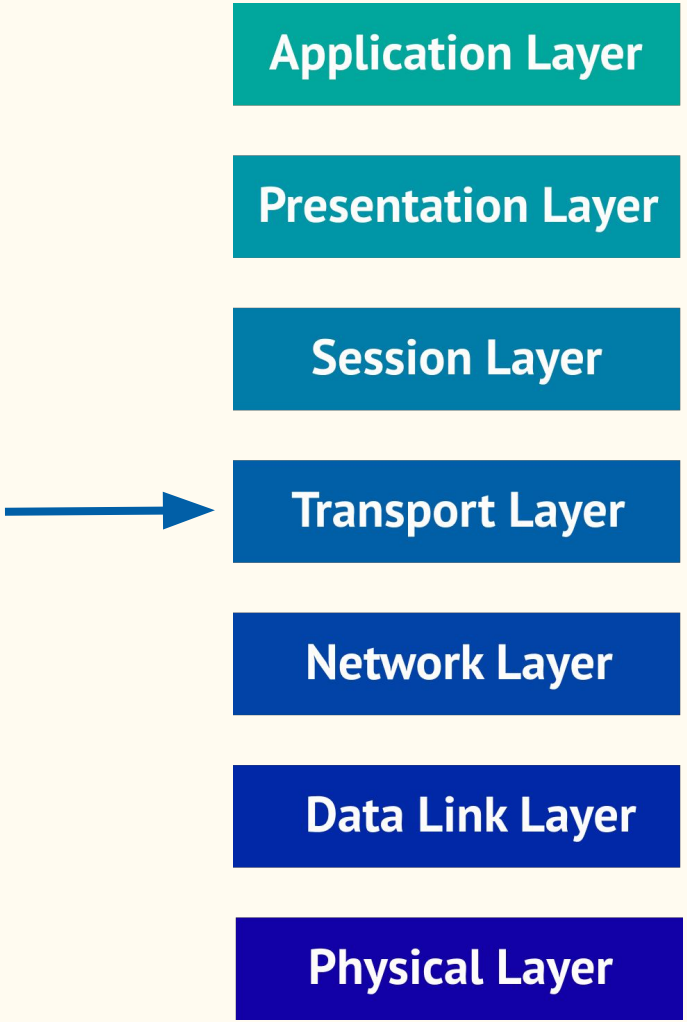
URL — is a reference to a web resource that specifies its location on a computer network and a mechanism for retrieving it



Hypertext Transfer Protocol (HTTP) — is an application layer protocol for distributed, collaborative, hypermedia information systems

(HTTPS) is an extension of the Hypertext Transfer Protocol (HTTP).

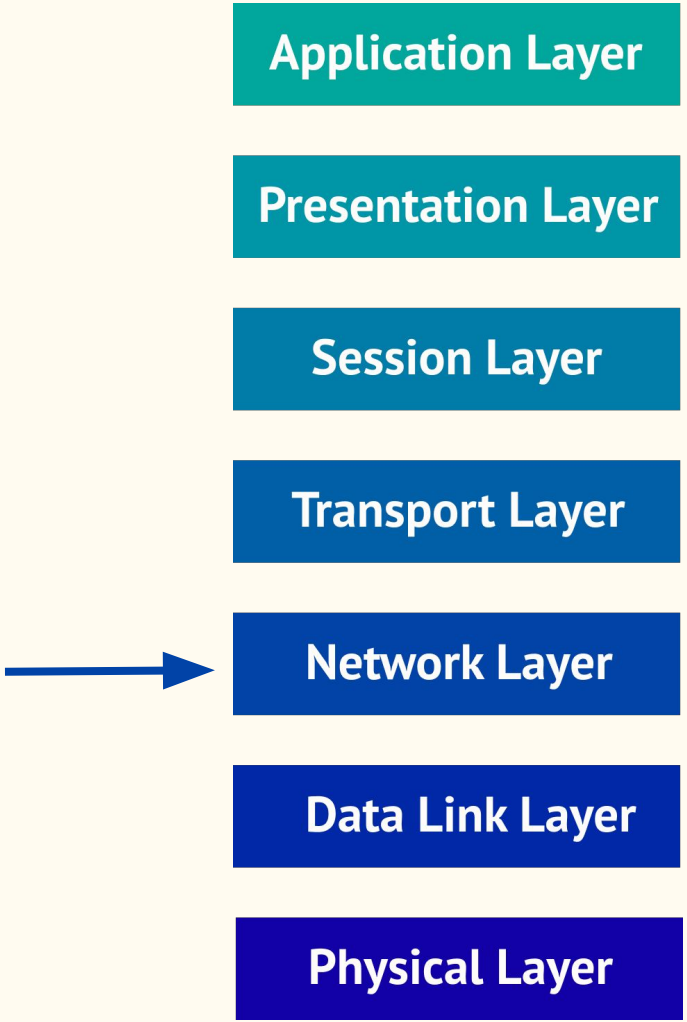
I hope you like colors, because I spend more time on learning color theory (actually, hsl paradigm is awesome) than on full lesson preparation.



Transmission Control Protocol (TCP) — provides reliable, ordered, and error-checked delivery of a stream of octets (bytes) between applications running on hosts communicating via an IP network.

TCP does error checking and also makes error recovery, on the other hand, UDP performs error checking, but it discards erroneous packets.

Pay attention that color of arrow has changed



Internet Protocol (IP) — is a numerical label assigned to each device connected to a computer network that uses the Internet Protocol for communication

Pay attention that color of arrow has changed

Domain Name System (DNS)

The Domain Name System is a hierarchical and decentralized naming system for computers, services, or other resources connected to the Internet or a private network

Browser Magic

- HTML Parsing
- CSS interpretation
- Page rendering
  - CPU
  - GPU

Q & A

I prepare for this. Hopefully, you are not ⁉