Network Components

Client	end-user access
Server	provides resources to network
Hub	connects devices - rebroadcast data
Switch	idem but uses selective adressing (IP/MAC)
Wireless Access Point	(WAP) - wireless hub
Media	connecting media (cables, waves, electricity, ...)
WAN Link	DSL, Cable, leased lines, satellite, cellular, MW, ...

Wired Network Topologies

can be	*physical* (cabling) or *logical* (traffic flow)
Bus	backbone cable, old, single collision domain
Ring	circular loop, singular direction
	token ring = devices wait their turn
	FDDI (fiber) = 2-counter rotating, redundancy
Star	connected to central device, SPOF!
Hub & Spoke	Star topology with WAN i.o. LAN (hubs)
Full-**Mesh**	rendundant, everyone is connected, efficient, very expensive
Partial-**Mesh**	hybrid of Full-Mesh and Hub&Spoke

Wireless Network Topologies

Infrastructure Mode	most common, cenralized mgmt, uses wireless securtiy control
Ad Hoc	P2P connections, no routers
Wireless Mesh Topology	Different type of nodes or devices, client-routers-gatways

Network Resources

Client/Server	Def	uses servers to provide access to files, printers, etc
	+	centralized, easier mgmt, scalable
	-	high cost, dedicated resources, network operating system
Peer-to-Peer	Def	Peers share resources directly to others
	+	lower cost, no dedicated resource, no specialized system
	-	decentralized mgmt, inefficent for large NW, poor scalability

Network Geography

PAN	Personnal	bluetooth, cellphone, usb drive, watch
LAN	Local	limited distance, ethernet (802.3), WIFI (802.11),
CAN	Campus	connects several buildings, camps, MIL bases, schools
MAN	Metropolitan	up to 25-mile radius like city departments, community over a region
WAN	Wide	across country, world, uing leased lines or VPN

Internet of Things (IoT)

802.11 WIFI	operates infrastructure or ad-hoc
Bluetooth	low energy, mesh network, pairing sys
RFID	electromagnetic fields, ie badge reader
NFC	RFID but 4cm range, more precise
IR Infrared	in line-of-sight
Z-wave	short range, low-latency data transfer for **home automation**
Ant+	**sensor** data for remote control systems