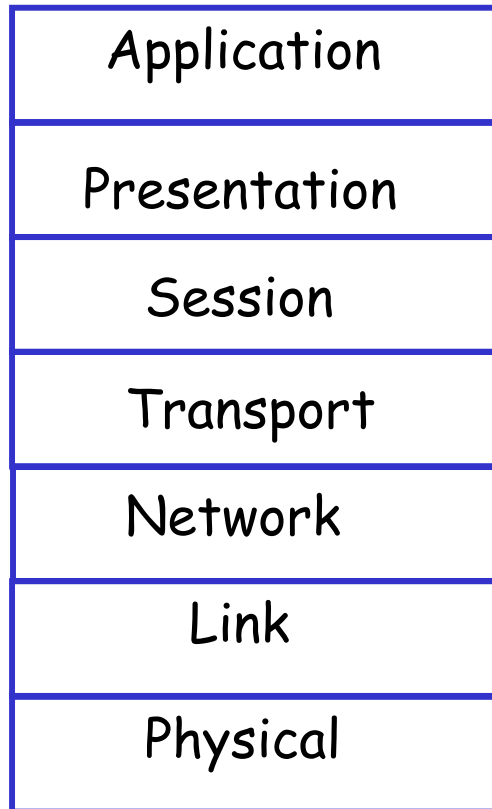
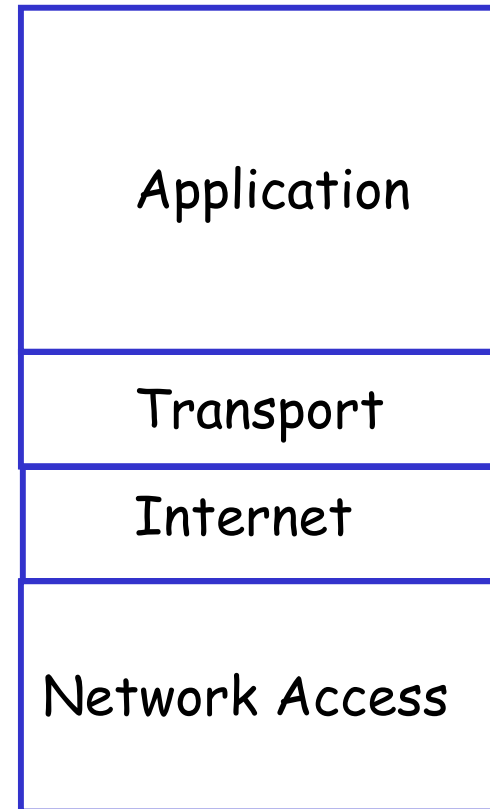


OSI and TCP/IP Protocol Stack

OSI

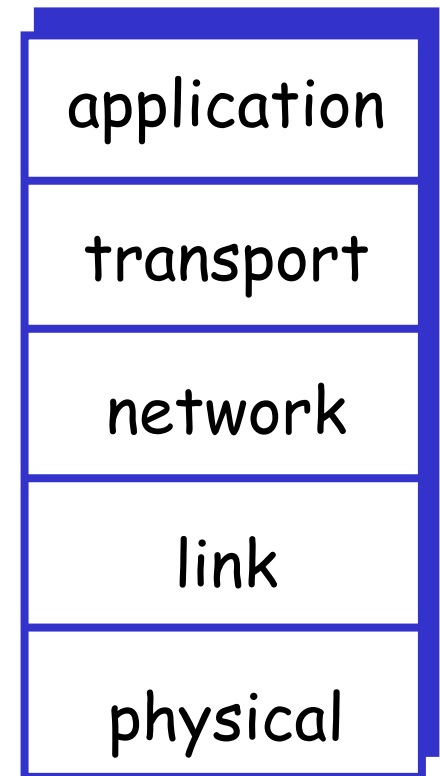


TCP/IP



Internet protocol stack

- **application:** supporting network applications
 - FTP, SMTP, STTP
- **transport:** host-host data transfer
 - TCP, UDP
- **network:** routing of datagrams from source to destination
 - IP, routing protocols
- **link:** data transfer between neighboring network elements
 - PPP, Ethernet
- **physical:** bits "on the wire"



Data Communication Protocol Layers

Application)	FTP, HTTP, SMTP, Telnet, DNS SNMP
Transport	TCP, UDP
Network	IP, ICMP
Link	LAN(Ethernet, TR, FDDI), WAN(ATM, FR, ISDN)
Physical	DSx, 10/100Mbps, 4 or 16Mbps, SONET(OCx)

Layers: each layer implements a service

- via its own internal-layer actions
- relying on services provided by layer below