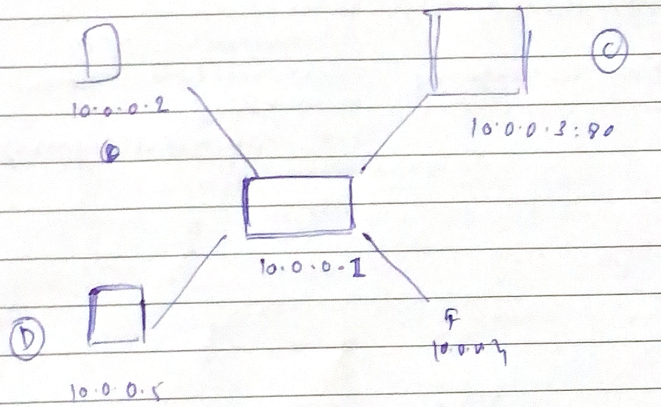
①

10.0.0.3: is a web server app and 10.0.0.5 wants to consume it.




APPLICATION LAYER

① GET request sent by 10.0.0.5 to be consumed by 10.0.0.3, it may have headers, cookie

↓

prepares this & sends this &

ALSO receives this.

②

PRESENTATION LAYER.

① Encrypt if necessary.

② ~~data format~~ → define

③

Session layer.

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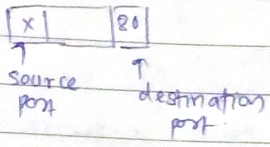
(2)

session layer - tag the data with the session id.

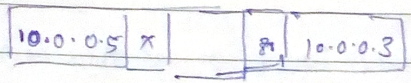
## TRANSPORT LAYER

breaks data into smaller segments. Each segment is tagged with port number.




adds sequence also.

## NETWORK LAYER




Adds IP address, source and destination.
(packet)

## DATA LINK LAYER

Breaks packet down in ANY random order. into frames

at this point in packet, we may know about the IP address, but nothing about the MAC

address. The protocol is called as ARP (Address Resolution Protocol).

PHYSICAL

010 . . . . 010

electrical signals, wifi signal, light

So at point of time, machine (D) sends the data to all devices in that network.

so, physical layer
↓
data link
↓
network layer ∈ at this point we come to know about the destination address and then the device can choose if to accept or discard the packet

also, hence connecting to wifi, a public wifi network is not a good idea as every other device will be able to see your packet

Telnet? - terminal tool to operate remote machines.

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④

popular session layer protocols:

① L2TP → VPN's
② PPTP - remote TCP + calls
③ H.245 - video calls.
④ SOCKS - proxies. C

Transport Layer Details.

in TCP/IP protocol, application/presentation and session form a single layer → Application.

Transport Layer.

TCP - slower - reliable - asks for confirmation
UDP - fast, unreliable

TCP

④ TCP - 3 way handshake.

- before sending data, a ~~~~ source, ~~we~~ needs acknowledgement from the destination that it can send data.

Host A

① Sends SYN request →

Host B

② Acknowledges the SYN request, and sends a SYN request back to host A.

③ Sends ACK request for host B.

448: https

Mo Tu We Th Fr Sa Su

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Date / /

(5)

TCP has flow control.

→ Suppose after sending 8 packets, the destination sends an error message that 2 of the packets are ~~in~~ not received, tcp can again resend those 2 packets.

UDP

bombarding of packets from src → Dest.

DNS uses UDP protocol over TCP

DHCP — UDP.

FTP TCP

HTTP TCP.

SMTP TCP

SNMP UDP

TFTP UDP

FTP - file transport protocol

TFTP - trivial FTP