APPLICATION & LAYERED ARCH!

- N/w arch refers to the def of protocols that defn how all layers functn
  ISO - Internatn org. for standardisatn
  - Developed OSI.

(1) OSI - Open System Interconnectn.

(a) **Physical** - deals with trans of bit over trans media which maybe cable, radio, wire.
  - concerned with voltage level, signal durath

(b) **Data Link** - deals with trans of frames over link conn 2 nodes
  Insert framing info to seperate blocks.
  Inserts control & addr info into packet header.
  Checks bit for error detectn & flow control

(c) **Network** - deals with trans of packet over n/w
  provides heirarchial addr. & Routing,
  Congestn Control incase of traffic judge.
  → Internet sublayer hides diff b/w n/w.
  Most complex layer.

(d) **Transport** - deals with end to end informatn transfer.
  Recieves info from above layer & divides it into segments to pass to NL.
  Sender end → It may provide reliable connectn oriented error free transfer of info.
  • It provides error recovery, sequencing & flow control.
  Reciever end → provides connectnless service
  No error/flow or control.

(e) **Session** - Controls the manner that info transfer takes place. Manages half duplex commn
  • Can insert synch. pt to mark progress of info transfer
  • In case of failure, recovery starts from sync pt.

(f) **Presentation**: Deals with transfer of info from machine dependent to machine independent form
  diff machine store machine in diff form
  data

(g) **Application**: Provides services that will be helpful to appn involving commn
  • protocols have been deployed for file transfer remote login, email.

OSI reference model provides unified view of all layers
Requirements occur in all layers such as MUX, error & flow control
Entity refers to a proc
n entity comm with each other thru PDU

$n(SDU) = (n+1)PDU$

PDU - Protocol data unit
SDU - Service — n —
SAP - service access port

a. **CONNECTION ORIENTED** : It has 3 steps :-
  (1) Connectn setup
  (2) Initn of sequence, flow control variable, buffer allocatn
  Informn transfer
  (3) Release resources following connectn termn.

b. **Connectionless** It maybe confirmed or unconfirmed
  funct n (1) Segmentn & reassembly (3) Mux & Demux
  (2) Unblock & Block single layer will serve (n+1) wes
  (4) Split & Recombine
  single (n+1) wes may be served multiple n layer entities

TCP ARCHITECTURE

It enables commn across multiple diverse n/w. It has 4 layers.

Application: provides services for appn involving commn protocols develop for file transfer, email, remote login. Equivalent to top 3 layers of OSI.
Protocols: HTTPS, STHTP, DNS, RTP

Transport: uses end to end info transfer, Two protocols
TCP: provides reliable connn oriented error free inequence byte stream.
• Provides flow control
UDP: Best effort connectionless service
- No flow control

Internet: Provides transfer of packet across multiple n/w
Service is best effort in connectnless
Corresponds to internet sublayer of OSI model.
It assigns globally unique addr. to each host interface

Network: concerned with n/w related aspect of commn
Interfaces for different n/w has been developed
• Concerned with access to immediate n/w.
• It encapsulates IP packet to the frame of underlying n/w
• This layer is tech. dependent whereas IP is idependent
• Each IP has 2 field: net id & host id.
• Each n/w will have net id
• Each host will have host id within n/w
• Each device has phy addr called MAC addr
  n/w ethernet = 1
  — pt to pt = 2
• Each ethernet has been assigned 48 bit MAC addr.
  Header contains source & destn IP & port number.