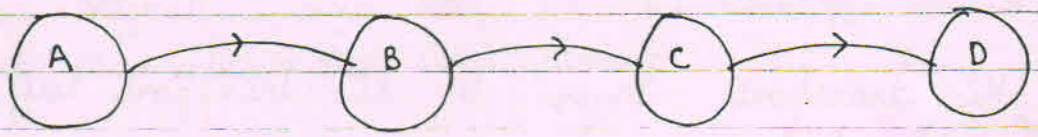
Ka kya nahi hoga, yeh kaise decide kiya transport layer ne.

- Jab jab transport layer ~~a~~ hai woh Segment size decide karte hai toh uska criteria kya hota hai ?? Woh kaise

Ans:- Segment size determined karte hai ??

Ans:-



Connectivity between System A and System D.

- Now suppose system A wants to send data to System D, directly A system se D system mein koi connectivity nahi hai, pahale data A se B par jayega then B se C par jayega then finally reaching System D.

- Ultimate Host kon hai A system hai aur ultimate destination kon hai D ~~to~~ system hai.

- B and C are Intermediate System. kyu. B system and C system are acts like both intermediate host & intermediate ~~destination~~ distination.

- Jab data A system se B system par jayega toh A is host and B is intermediate distination, now jab data B system se C system par jayega toh B is act like intermedicate host and C acts like intermedicate distination. Now jab data C system se D system par transmit hoga

in that case C system acts like intermediate host and D system acts like ultimate distination.

- Now A ki transport layer ne kya dek-kar kya soch kar segment size decide ki toh transport layer of ultimate host communicates with the transport layer of ultimate distination.
- A ki transport layer D ki transport layer se puchti hai.
- A ki transport layer directly D ki transport layer se communicate kar raha hai, woh B aur C ki transport layer se nahi puch raha hai, woh directly ultimate distination D se puch raha ki transport layer se communicate kar raha hai.
- Toh A ki transport layer ne D ki transport layer se pucha ki what should be the size of segment size.
- Toh segment size kon- decide karta hai, utimate host and ultimate distination.
- Par yeh dono kya dek kar segment size decide karte hai.
- Toh woh decide karte hai segment size kya dek kar toh availability of memory at both sender and reciever end.

- Dono end par kitane memory ya kitana buffer available hai.

- Agar dono ek saath 10KB ka data receive & send kar sakte hai toh segment size 10KB ki ho jayegi.

- Toh segment size kon decide karta hai ultimate host aur ultimate destination.

- Aur kya karta hai transport layer, toh segment mein divide karne k baad it performs flow control and error control.

Ques. Flow control matlab kya ??

Ans. Sender bahut fast send karrahe hai lekin receiver us speed se receive hi nahi kar paraha hai. Toh, Sender ko send karne ki speed ko slow karna padega.

- Aur yahi chij kya kahate hai flow control.

- Toh flow control matlab is synchronics the sender and receiver.

- Jo overcome the mismatch (speed) of sender and receiver.

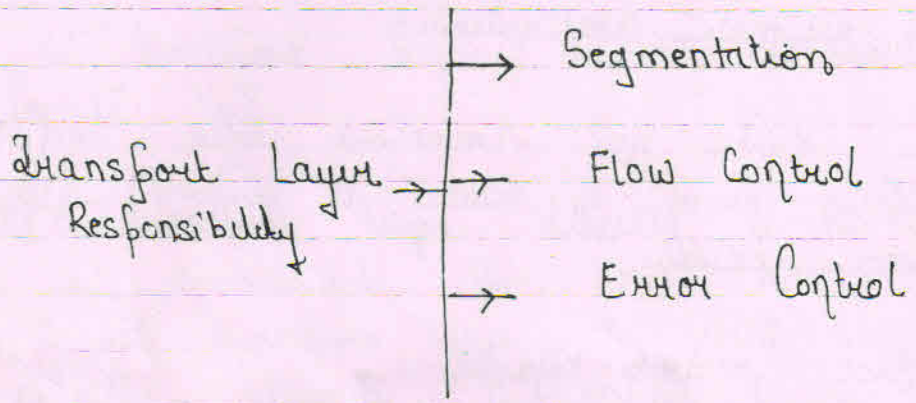
ERROR control matlab ??

Sender yeh insure karna chahata hai ki receiver tak data pahucha hai ki nahi matlab System A yeh insure karna chahata hai ki System D tak data sahi pahucha hai ki nahi.

Usse datagram → Segment- K liye use kiya jata hai.

this is error Control.

- To insure that whether recievr, recieve the data correctly or not.
- This is ~~th~~ error Control.



- Now aab hamare fass data nahi Segment hai, now anb transport layer ne segments network layer ko send kiya.

NETWORK LAYER :→

- Now network layer further divide the segments in the form of packets.
- Aur packets K liye hum dusra kya word use karte hai datagram.
- Now yeh further divide kyo karta hai, iske divide karne ka kya criteria hai ??

Ans:- Assume Sendr A aur B ne segment size decide ki 10KB toh woh ek saath kitna data send karsakte hai 10kb.

- Lekin jis network se jana hai, jis wire jis cable se jana hai, us cable ki capacity 1Kb ki hi hai. Toh wo isse jada ka data ek sec mein handle nahi kar sakte.

- ~~Toh underlined data- capality ko dek kar~~
- Toh underline network ki data - carrying capacity ko dek k, network layer further divides the segments in the form of packets.

- Cable ek second mein kitna data carry karsakta hai usko dek k network layer further divides the segments in the form of packets.

- Data- carrying capacity ko hum kya kahate hai Bandwid-th kahate hai. Example:- 5Mbps, 1Gbps, 1Kbps. Jo bhi hai.

- Aur network Layer kya karta hai, packet mein divide karne k aalawa yeh kya perform karta hai routing.

- Routing matlab route decide karta hai. If there exist multiple root between sender and receiver, toh kis root ko follow karke data transmit hoga; to

- Toh Network Layer kya perform karta hai Routing perform karta hai.

- Aur kya perform karta hai network Layer toh network Layer kya perform karta hai congestion control.

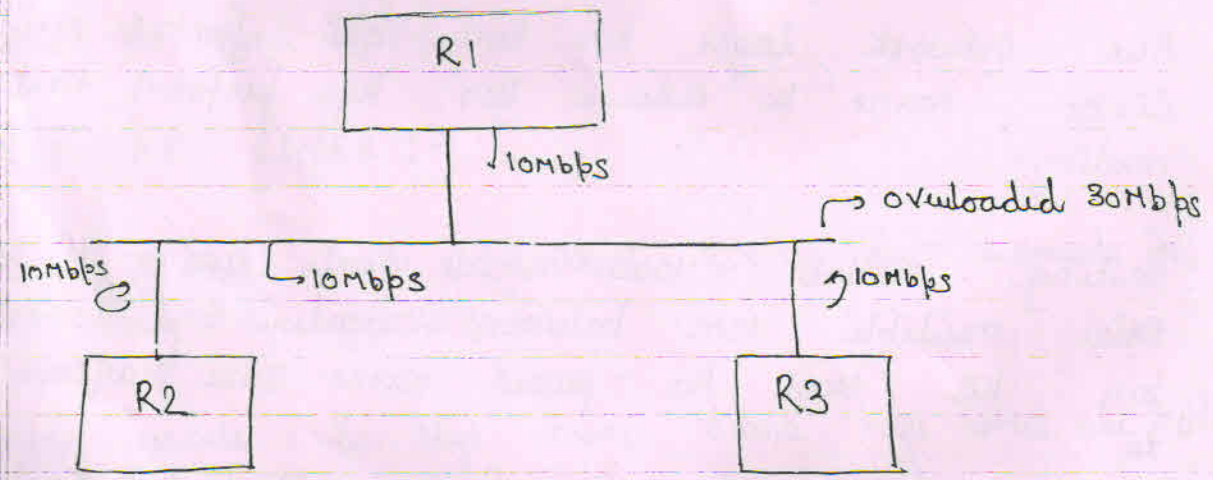
Conjestion Control :→

Now yeh Conjestion Control matlab kya hota hai, Conjestion Control is like traffic control.

- Hamare network ki bandwidth to 10Mbps ki hi hai par hum 100 MB ka data bhej rahai ho, toh uske karan network kya hojayega conjested hojayega.

- Woh data carry hi nahi kar payega. Jo Network ki jitani capacity hai usase jada data transmit na ho woh kya kahalata hai conjestion control.

- Conjestion Control Kiski Responsibity hai Network Layer ki hai.



Network Layer Responsibility
- → Datagram
- → Routing
- → Conjestion Control

- Now Network layer ne packets kaha aaye Data-link layer par.

DATA-LINK-LAYER :→

- Data-link layer further divides the packets in the form of frames.

- Now aab yeh layer further packets ko frame mein kyo divide karta hai ??

Ans→ Iska answer dene k bahale hum dekte hai ki ~~data~~ yeh data-link Layer karta kya hai.

- Data-Link Layer, jaisa iska name hai, iske responsibility sirf ek link ki hai.

- Matlab kya System A ki datalink Layer ki kya responsibility ki data B system tak sahi pachu jaye.

- B system ki data-link kya insure kare ki data kaha tak sahi pachu jaye C tak.

- Toh Datalink layer works for a single link.

- A ki transport layer kya check kare ki D tak data sahi pachu hai ki nahi but A ki datalink layer ko sirf yeh check karna hai ki B tak data sahi pachucha hai ki nahi.

Pachuchaye C tak.

- Joh data-link layer error control karta hai over a single link.

- Aur transport layer A ki transport layer B se puchagy ki D tak data sahi pachucha hai ki nahi.

- Phir bhi abhi tak hamko ansuar toh nahi mila rahi woh further packets ko frames mein kyo divide karte hai?

Ans. Joh agar error aayi, A ne send kiya B, B ne check kiya error aayi, now error kaise check kiya woh hum aagey paragy error control technique uski through hum determined kar sakte hai ki error aayi hai ki nahi aayi hai.

- Joh A ne send kiya, B system ne dekha error hai. B us error ko correct nahi karsakta, woh sirf detect karsakta hai, hamare pass joh error control techniques hai woh sirf error ko detect karsakte hai correct nahi karsakta hai.

- B system aab kya karega, A ko message karega for retransmitting.

- Whenever there is error frames kya karne paragy retransmit karne pargi.

- Agar hamne 1Kb ka pura packet ek saath send kiya hota toh aur agar usme error aata toh, hamne pura 1Kb ka data send karna parta wapas se

- Aur agar us 1Kb ko aur ~~tho~~ choti-choti frames mein divide kiya hota, toh ek hi frame jisme error aayi hai usko hi retransmit karna pauga, baaki kisi ko bhi retransmit nahi karna pauga.
- Joh kyo kiya divide, frame mein toh to minimize the unit of retransmission.
- To keep unit of retransmission very small on error, data-link layer further divides the packets in the form of frames.
- Datalink k layer ka ek aur task hota hai ~~error~~ flow control.
- Now iska flow control kisse bich mein hai A and B.
- Joh joh actual flow control kiska important hai, datalink layer ka ki transport layer ka.
- Joh Datalink layer ka kyoki, data actual mein kiski help se horaha hai data-link layer ki help se.
- A ne D se puch liya A ki speed bhi fast hai aur D ki speed bhi fast hai, toh data transfer rate transport layer par toh bahut fast hojayegi Agar D
- Lekin B us speed se recieve nahi karpakta hai. Joh A se B ka transmission hi nahi hopayega