

Transport
Layer /

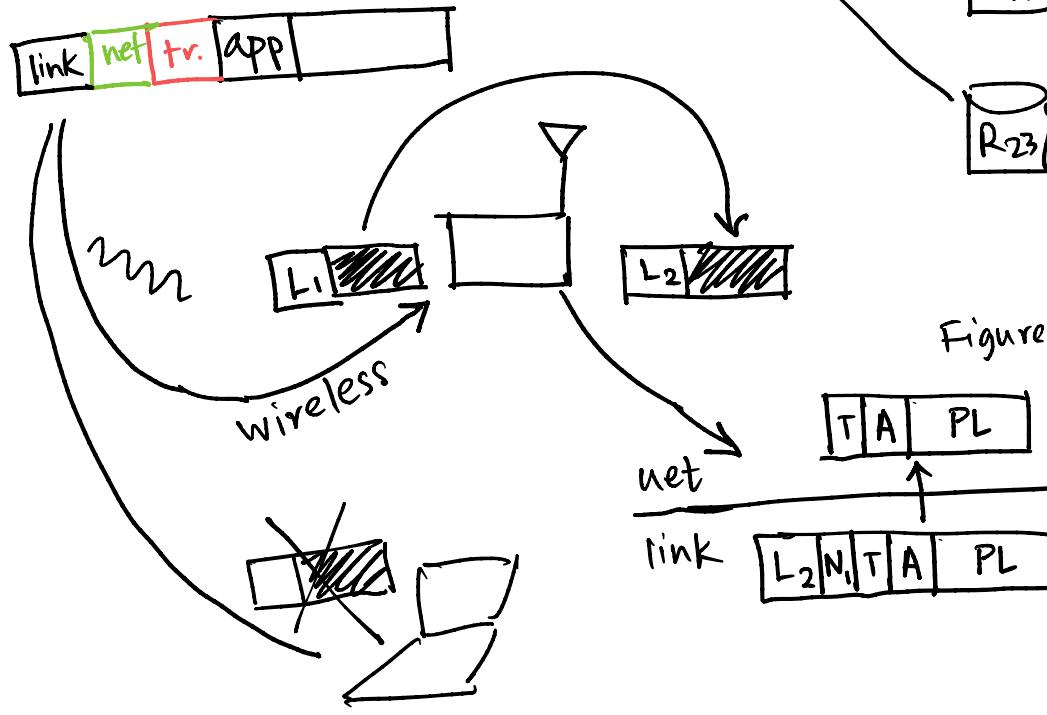
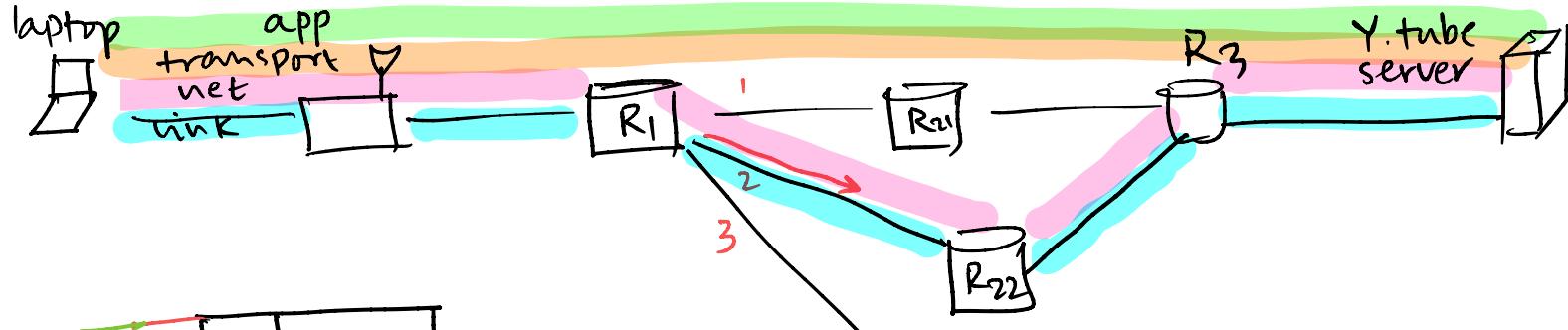


Figure out next router
along the path to
Dest,

add (Youtube)

T A PL

R₁

N₂ T A PL

net
link

L₃ N₂ T A PL

■ Principles

Goal #1 : correctness

- ① All pkts should be delivered (if not, inform the appⁿ about the failure) -
- ② No duplicates to be delivered
- ③ Packets are delivered in-order

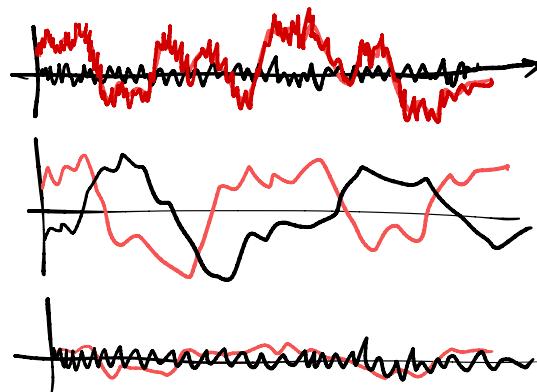
Goal #2 : Performance

- ① Low latency / high throughput
- ② Respect memory constraints of receiver
- ③ Fairness

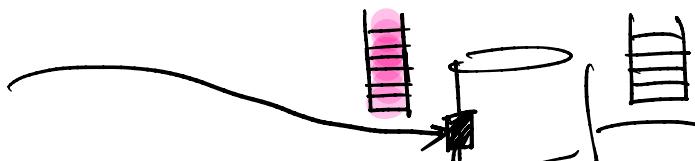
■ Sources of error

① Bit errors

noise
interference
fading



② Packet loss due to congestion



→ no more memory to accept the next pink packet, hence drop it.

■ Why challenging ?

- Reliability over unreliable channels
- distributed consensus
- No cross layer information
 - Case study : Bottleneck b/w estimation
 - Bottleneck vs. available b/w.

■ Reliable data transfer from 1st principles

General's problem → Distributed Consensus

