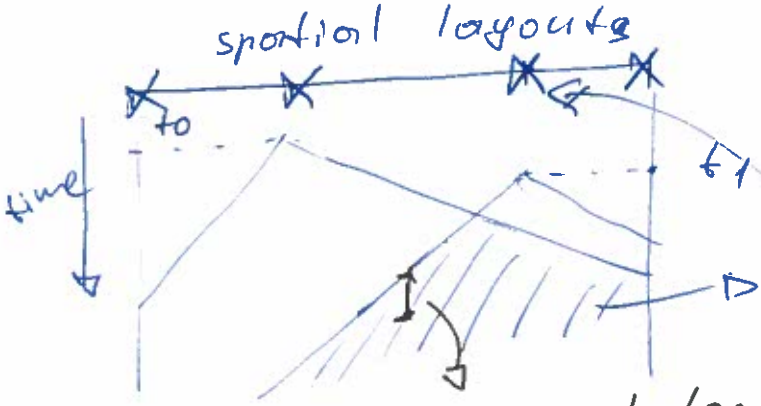
CSMA (carrier sense multiple access)



→ propagation delay until collision detection

Binary exponential backoff
- after mth collision, choose delay at random from $\{0, 1, \ldots 2^{m-1}\}$ to wait

$$\text{efficiency} = \frac{1}{1 + 5\frac{t_{prop}}{t_{trans}}}$$

t_{prop} → prop. btw. adapters

t_{trans} → time to transmit

Taking turns → polling: master invites slave to transmit

→ token passing: ring token...

ARP → | IP | MAC |

→ broadcast query

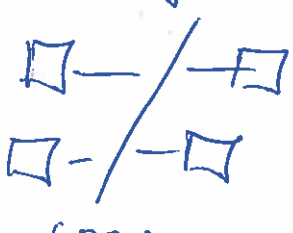
→ unicast response

| D | R |

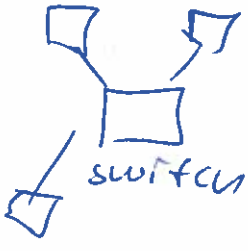
$R = (D \ll r) \bmod G$

Ethernet

Bus



star



→ CSMA/CD
→ connectionless
→ unreliable
→ CRC
→ switch → table MAC | Interface | T

→ self-learn from incoming requests

→ otherwise broadcast