

02:17

TOKEN PASSING

- ★ A station is authorized to send data when it receives a special frame called a token.
- ★ Here there is no master node.
- ★ A small, special-purpose frame known as a token is exchanged among the nodes in some fixed order.
- ★ When a node receives a token, it holds onto the token only if it has some frames to transmit; otherwise, it immediately forwards the token to the next node.

NESO ACADEMY

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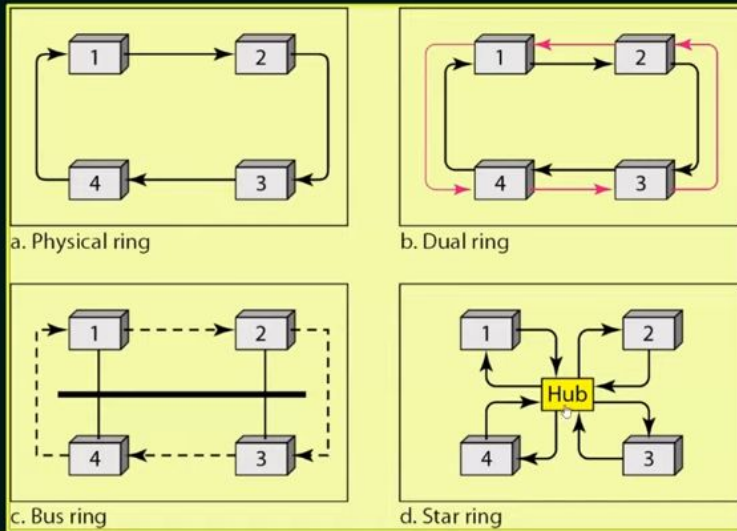
TOKEN PASSING

- ★ If a node does have frames to transmit when it receives the token, it sends up to a maximum number of frames and then forwards the token to the next node.
- ★ Token passing is decentralized and highly efficient. But it has problems as well.
- ★ For example, the failure of one node can crash the entire channel. Or if a node accidentally neglects to release the token, then some recovery procedure must be invoked to get the token back in circulation.

NESO ACADEMY

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TOKEN PASSING



NESO ACADEMY

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PERFORMANCE OF TOKEN PASSING

$$S = \frac{1}{1 + a/N} \quad ; \text{for } a < 1$$

$$S = \frac{1}{a(1 + 1/N)} \quad ; \text{for } a > 1$$

$$a = \frac{T_p}{T_t}$$

S = Throughput

N = number of stations

T_p = Propagation delay

T_t = Transmission delay

NESO ACADEMY