

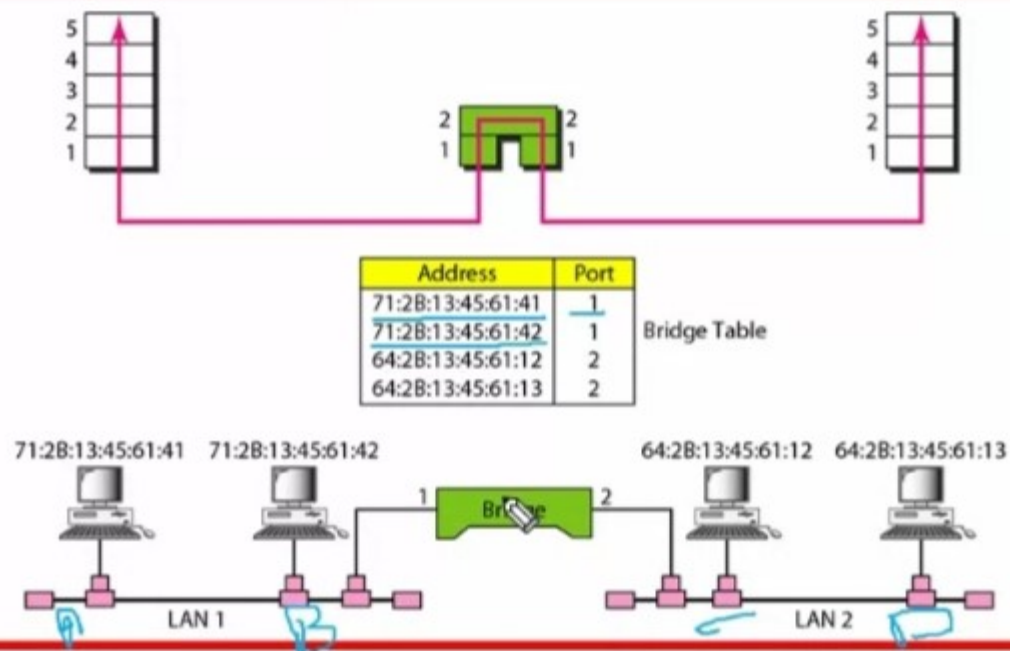
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## BRIDGES

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- A Bridge operates in both the Physical and the Data link layer.
  - As a Physical layer device, it regenerates the signal it receives.
  - As a data link layer device, the bridge can check the physical addresses contained in the frame.
  - Compared to the repeaters, a BRIDGE has a filtering capability – forwarding & dropping of frames.
  - If the frame is to be forwarded, the port must be specified.
  - A bridge has a table used in filtering decisions.
  - A bridge doesn't change the physical addresses contained in the frame.
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## BRIDGES - Filtering



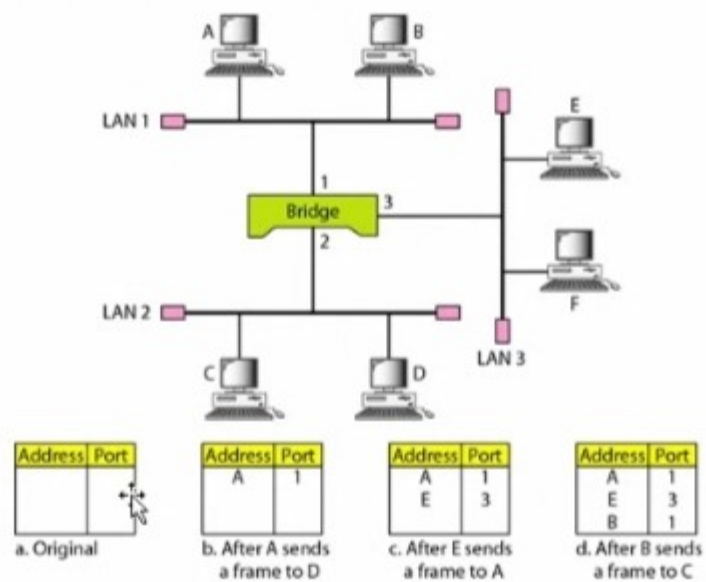
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### Transparent bridges

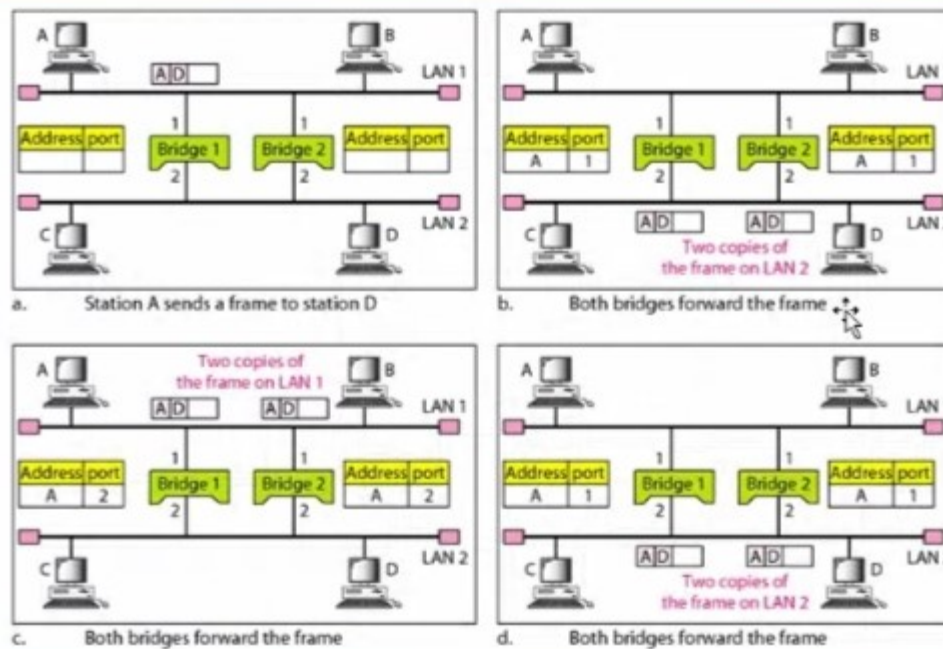
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- ✓ A Transparent bridge is a bridge in which the stations are completely unaware of bridge's existence.
  - ✓ If a bridge is added or deleted from the system, reconfiguration of the stations is unnecessary.
  - ✓ According to IEEE 802.1d, a system equipped with transparent bridges must meet three criteria.
    1. Forwarding.
    2. Learning.
    3. Loops should not be present.
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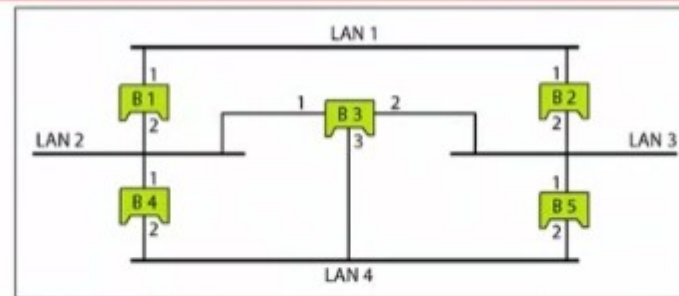
## Learning Process: *A learning bridge and the process of learning*



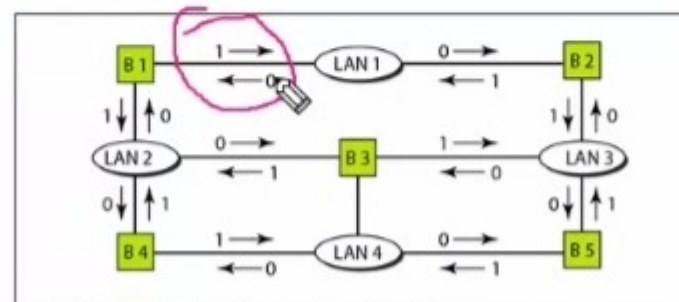
**Figure 15.7** *Loop problem in a learning bridge*



**Figure 15.8** *A system of connected LANs and its graph representation*



a. Actual system



b. Graph representation with cost assigned to each arc