

CSE 4125: Distributed Database Systems

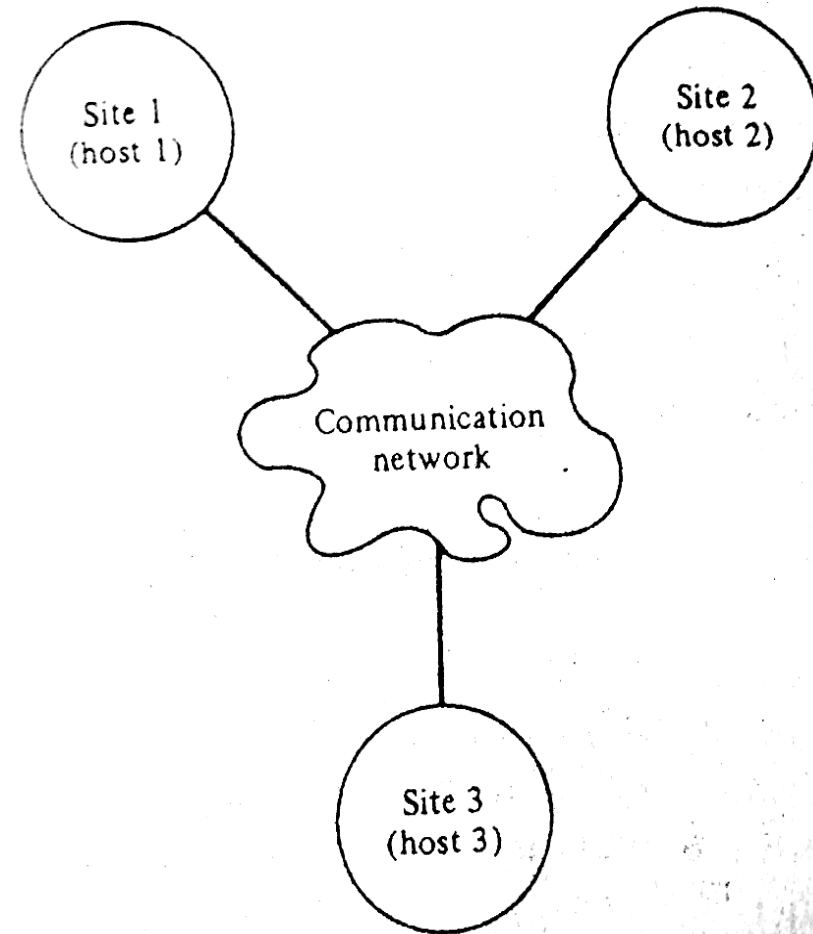
Chapter – 2: Part B

Review of Databases and Computer
Networks

Review of Computer Networks

Computer Network

- ❑ *Computers (hosts/ sites) capable of performing autonomous work.*
- ❑ *Connected by Communication network (communication links + computers).*
- ❑ *A process running at any site can send a message to a process running at another site.*



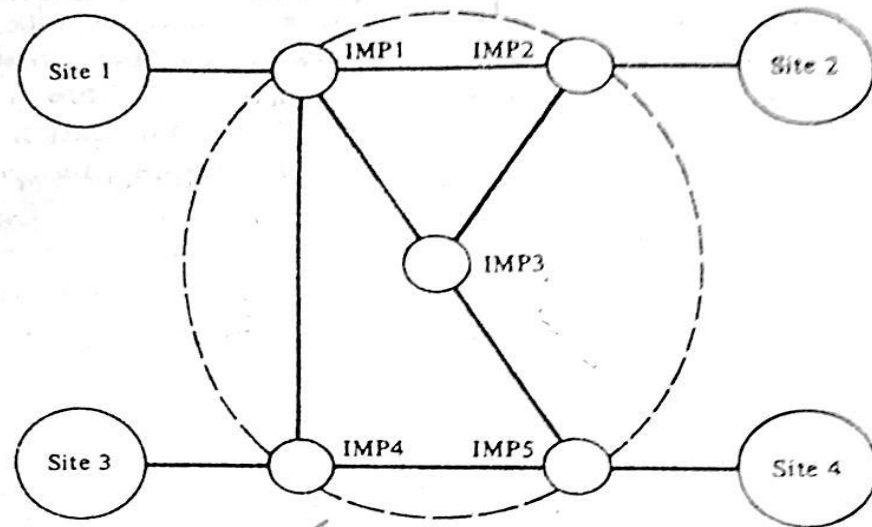
Parameters of CN

- ❑ *Delay*: Time within which the message is delivered.
- ❑ *Costs*: Fixed costs + costs proportional to message length.
- ❑ *Reliability*: Probability of correct delivery of the message.

IMPs

□ Interface Message Processors:

- Dedicated processors pair-wise connected by communication links.
- *Routing: function of choosing path from source to destination.*



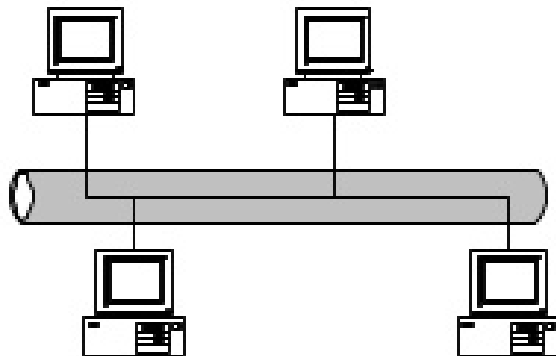
Types of CNs

❑ Point-to-point:

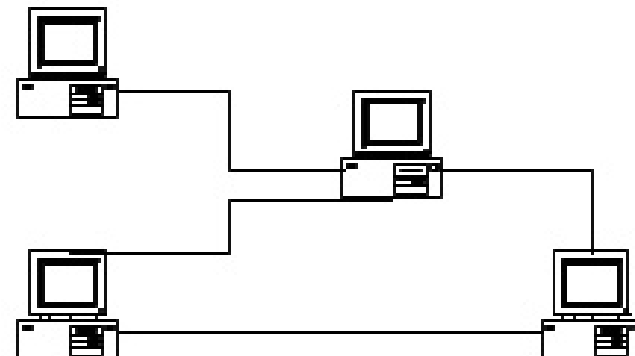
- Pairs of sites/ hosts are directly connected.

❑ Broadcast:

- All sites/ hosts shares a single communication channel.



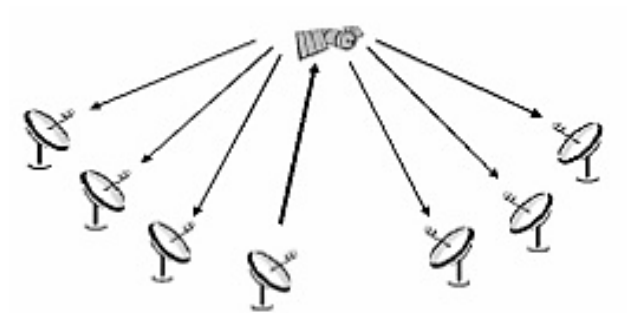
Broadcast Network



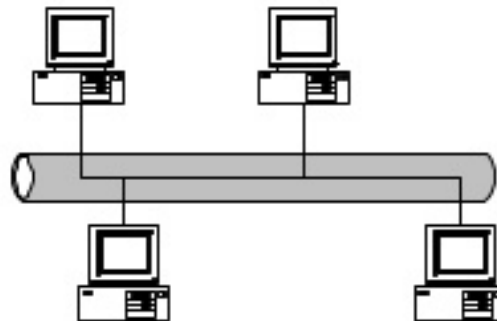
Point-to-Point Network

Types of Broadcast

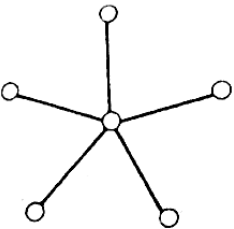
❑ Satellite



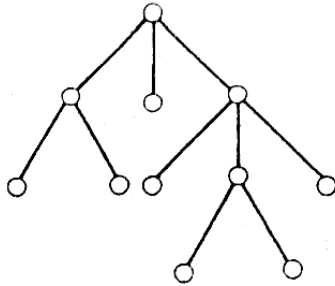
❑ Common bus



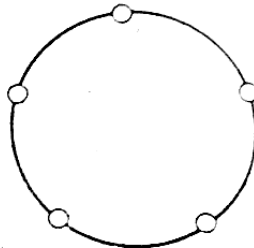
Network Topologies



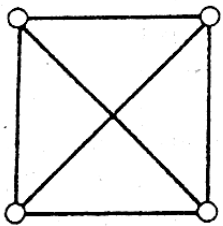
(a) Star.



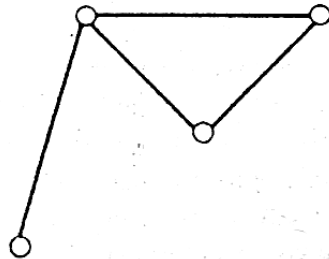
(b) Hierarchical.



(c) Ring.



(d) Completely interconnected.



(e) Irregular.

1. Star
2. Hierarchical
3. Ring
4. Completely connected
5. Irregular

Protocols and Sessions

□ Protocols:

- Rules followed by two or more processes for communicating.
- Example: making a phone call.

□ Sessions:

- A session is established between two processes and is held until all necessary messages have been exchanged.
- Example: conversation over a phone.

