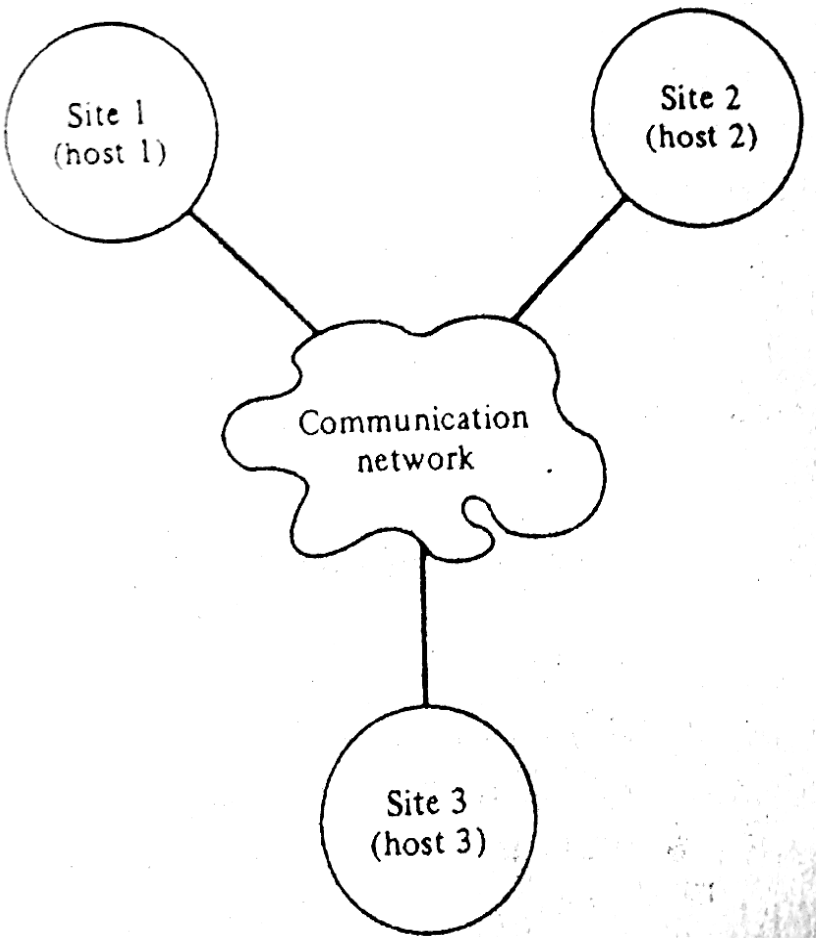
CSE 4125: Distributed Database Systems
Chapter – 2: Part B

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.

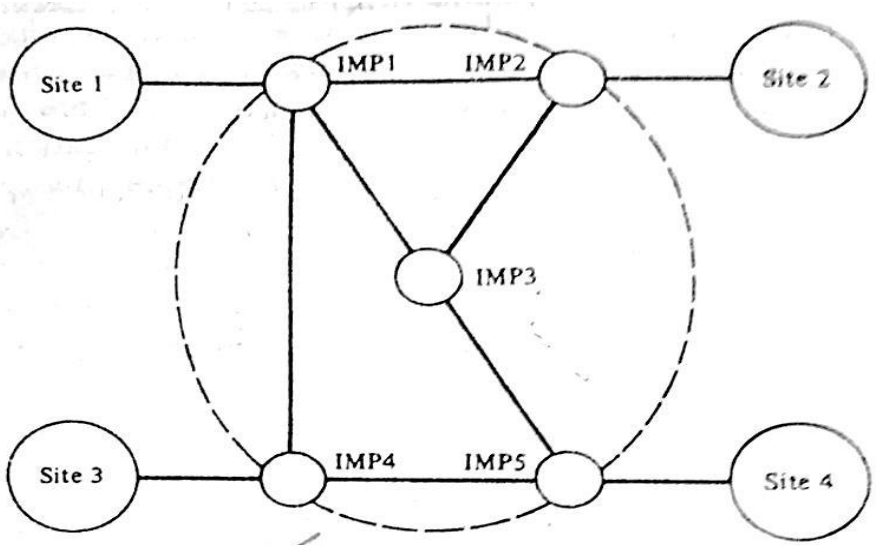


Parameters of CN

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

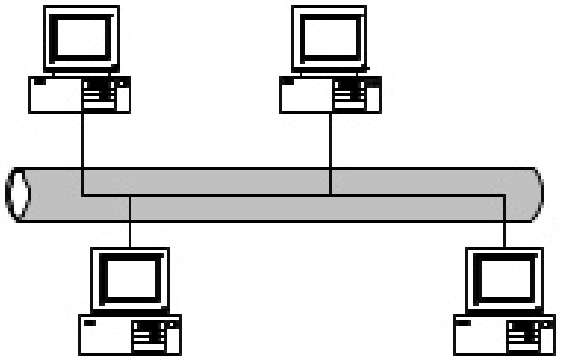
IMPs

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

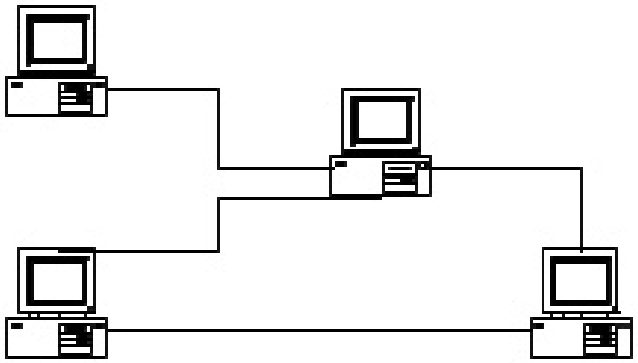


Types of CNs

- **Point-to-point**:
  - Pairs of sites/ hosts are directly connected.
- **Broadcast**:
  - All sites/ hosts shares a single communication channel.



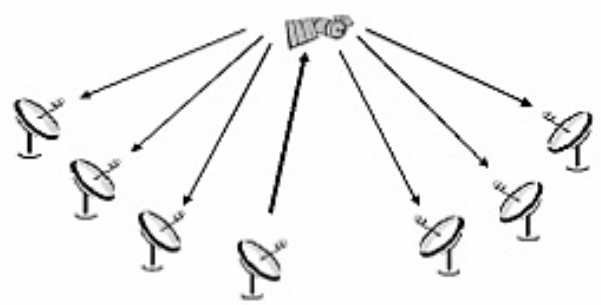
Broadcast Network



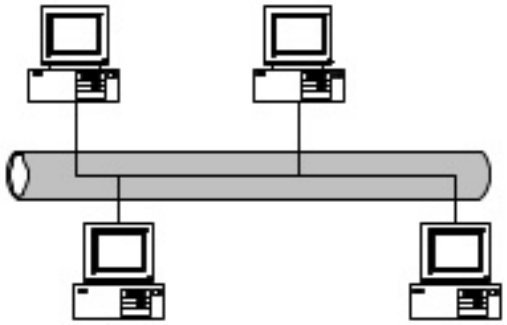
Point-to-Point Network

Types of Broadcast

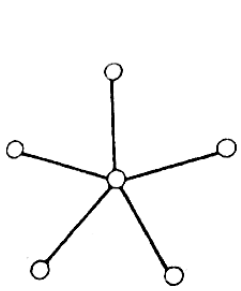
- Satellite



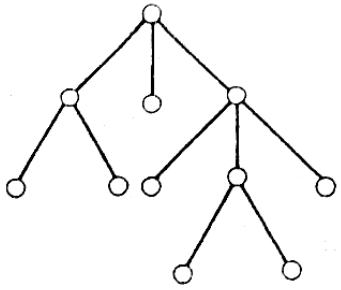
- Common bus



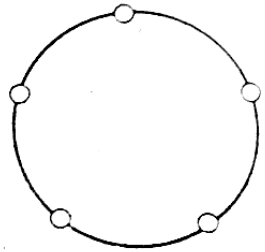
Network Topologies



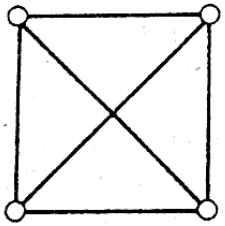
(a) Star.



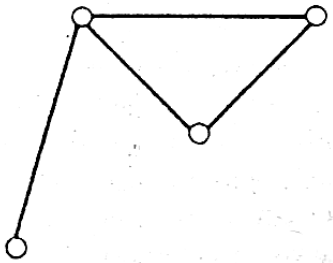
(b) Hierarchical.



(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.

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