Classification based on how computers behave in a network

 Two Classifications are

   Peer – to – Peer network

   Server based network

1. **Peer – to Peer network**
   - On a network built the peer – to-peer architecture, no specific distinction exists between a client and a server.
   - Any node can provide a service as well as send a request for a service from another node on the network.
   - The peer-to-peer network architecture allows sharing of resources, data, and users.
   - Each node on the network has full control over the network resources.

Notes:-

- ✓ *Nodes provide and request services*
- ✓ *User in each node administers resources*
- ✓ *No extra investment*
- ✓ *Easy to setup*
- ✓ *Very weak security*
- ✓ *Additional load on nodes*

Advantages of peer-to-peer networks:

- Low cost
- Simple to configure
- User has full accessibility of the computer

Disadvantages of peer-to-peer networks:

- May have duplication in resources
- Difficult to uphold security policy
- Difficult to handle uneven loading

Where peer-to-peer network is appropriate:

- 10 or less users
- No specialized services required
- Security is not an issue
- Only limited growth in the foreseeable future

2. **Client – Server Architecture**
   - On a network built using the client – server architecture, the devices communicate to other devices through a central computer referred to as a server.

- The server is a terminal with high processing power, which provides services for the other computers on the network.
- The client is a terminal that accesses the resources available on a server.

Note:-

- ✓ *Designated computer to administer*
- ✓ *Resources centralized*
- ✓ *Supports larger networks*
- ✓ *Strong security*
- ✓ *Expensive*

Network Clients (Workstation)

- Computers that request network resources or services
- Network Servers
- Computers that manage and provide network resources and services to clients
- Usually have more processing power, memory and hard disk space than clients
- Run Network operating system that can manage not only data, but also users, groups, security, and applications on the network.
- Servers often have a more stringent requirement on its performance and reliability.

Advantages of client/server networks

- ✓ Facilitate resource sharing – centrally administrate and control
- ✓ Facilitate system backup and improve fault tolerance
- ✓ Enhance security – only administrator can have access to server
- ✓ Support more users – difficult to achieve with peer – to- peer networks

Disadvantages of client/server networks

- ✓ High cost for Servers
- ✓ Need expert to configure the network
- ✓ Introduce a single point of failure to the system