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# LAB -1

define following

→ we use Cisco packet tracer student

- LAN, WAN, Ethernet, IP Adress, Hub, Switch, Server end device, Nodes

1. **LAN** : A local area network is a computer network which interconnects computers with a limited area such as a residence, school or an office building

2. **WAN** : Wide area network is a telecommunication network that extends over a large geographical area eg cloud appl.

3. **Ethernet** : is a family of wired computer networking technologies commonly used in local area network, metropolitan area network & wide area network. Standardised in 1983 by IEEE as 802.3

4. **IP-Address** : IP adress is a unique address that identifies a device on the internet or the local network. IP stands for "internet protocol" which are the set of rules governing the format of data sent via the internet or LAN.

→ They are identifier that allow info to be sent b/w devices over a network. they have location info that make devices accisible for communication

5. **Hub** : is a physical layer networking device which is used to connect many devices in a network, it has many ports in it. A computer intends to be in network, it is plugged into one of these hubs

when a data frame arrives at the port, it is broadcast to every other port irrespective of whether it is destined for a particular destination or not.

6. Switches : A switch is a data link layer networking device which connects devices in a network & uses packet switching to send & recieve data over the network

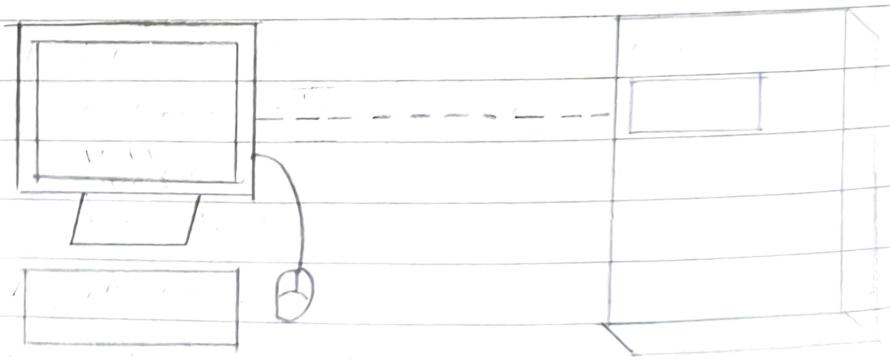
7. Server : A server is a computer program or a device that provides a service to another computer program and its user, also known as client

8. end devices : They are either the source or destination of data transmitted over the network

9. Node : a node is any physical device within a network of other tools that able to send, receive or config information.

eg : PC, Modem, ~~hotti~~ switches, hubs, servers Printers & other devices connected over the internet will or ethernet.

First network



PC-PT client
IP - 10.0.0.1

Server - PT
web server
10.0.0.2

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Observation (of the week. (All things done.)

1. Open Cisco Packet Tracer
2. go to help section in the top ribbon and click on contents. → This takes us to documentation
3. on the left most part, index exists under which there is a tab called getting started under that "My first PT lab" menu can be seen, click on that
4. Skip the "viewing help & tutorials" section as it familiarizes you with the UI & head to "Creating your first network" section which is II subheading
   - → There are 10 substeps under this
   - → on the bottom left corner, the first icon is end devices, click on that, then all devices will appear in the adjacent window
   - → drag & drop the "PC-PT" & "Server-PT" on the work space
   - → in the same bottom left corner, there is a "lightning icon" which is connections
   - → click on that and connect using "copper straight through" which is the third icon
   - → then check the red lights or link indicating that it's not working connection.
   - → on the right most coulumn ribbon of the screen select delete icon & delete connection
   - → replace straight copper with copper cross-over connection the lights turn green.
   - → hovering mouse is waiting shows status as "up"
   - → click on the PC & turn it on / off on the GUI image (find pow button)
   - → toggle this button for both server & PC & notice the connection turning red & green

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→ three ways to access to learn, first is to hover mouse, second is click on it to learn from config window and third to use inspect tool and click on pc & check arp table is empty

→ ~~ope~~ click on pc, in the config tab, set dns & IP address as 10.0.0.1 & 10.0.0.2 for client & server respectively

→ you can also configure ins the desktop tab & ensure that port status is checked.

→ open server config, set name, ip and click add ensuring dns is on.

→ Add description using ① button.

→ ~~Save~~ click on filed background

→ save the file

UI command prompt output

→ positive ping (existing)

```
PC > Ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

reply from 10.0.0.1 : byte = 32 time = 0ms TTL = 120
reply from 10.0.0.1 : byte = 32 time = 5ms TTL = 120
reply from 10.0.0.1 : byte = 32 time = 4ms TTL = 120
reply from 10.0.0.1 : byte = 32 time = 5ms TTL = 120

Ping statistics for 10.0.0.1
    packets : sent = 4, received = 4, lost = 0 (0% loss),
Approximate round trip times in milli-seconds :
    minimum = 0ms, Maximum = 5ms, Average = 3ms
```

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→ - ve pinging (not existing.

```
C:\> Ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.0.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

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