Networking Infrastructures

Internet is defined as an infrastructure which provides services to applications like
Ex:- Web, Streaming video, multimedia, email, games, social media etc.

→ These applications (web, email, ...) are developed through programming. So, these applications run only on end systems. So, ~~router~~ network core (routers (or) packet switches) doesn't run these applications.

→ These internet applications (Netflix (streaming video), ...) are not confined to particular end systems.
{Ex:- watching Netflix on PC; PC doesn't have directly access to Netflix. So, PC ask permission from Data Center Network (Netflix). Then it will give access to your PC

* So, it will be distributed between transmitter and receiving Endsystem. And it is distributed between different parts of internet. (Netflix has various Subscribers at different places) ∴ It is known as Distributed applications.

→ To Communicate Distributed applications (Netflix) with Internet it needs programming Interface (It is also known as socket Interface)

→ This programming Interface / Socket interface acts as "hooks" that allows Sending/receiving apps to Connect to use Internet transport service.

What's a protocol:-

→ Protocols:-

Defines the format, order of messages sent and received among network entities and actions taken on message transmission, receipt

(OR)

It controls the sending and receiving of Information within the internet

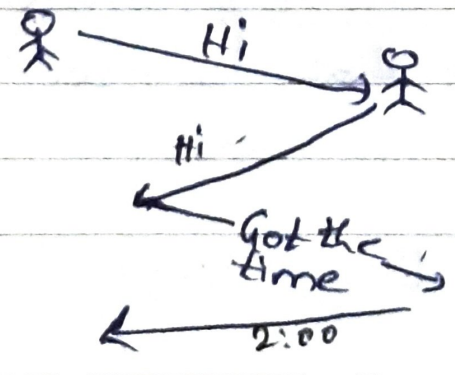
→ suppose if we transmit a packet and it is lost in the internet; then also protocol takes some action

Networking protocols:-

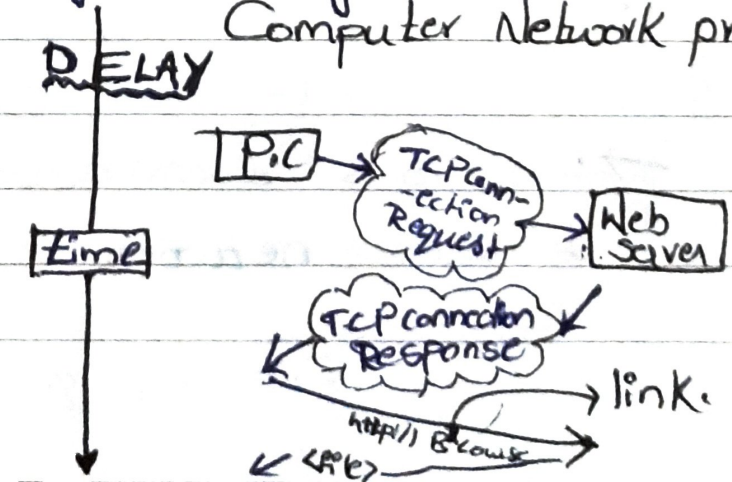
↳ used by Computers (devices).

↳ all communication activity in internet are governed by protocols.

Human protocol



Computer Network protocol



A closer look at Internet structure:

Network edge:
↳ Hosts :- clients and servers

Severs are Data Center Network (or) web servers.

Network Core:
↳ Inter Connected routers
↳ network of networks.

Edge router :-
The 1st router Connected to End system is called Edge router.

Q) How to Connect Endsystems to Edge router?
1. → Residential access networks (DSL, Cable, sate(lite,)
2. → Institutional access networks (school, Company)
3. → Mobile access networks (Wifi, 4G/5G)
4. → wide area wireless Access (3G, LTE 6r) 4G, 5G)

A → 1 → Residential Home access networks:
(Ex:- Digital subscriber line)

1 → Telephone Based access Network (DSL)
→ DSL is a access network that is provided by telephone network.

FDM → Frequency division Multiplexing.