24/07/2024

Practical – 2

AIM: Study of different types of network cables.

Cable Type	Category	Maximum Data Transmission	Advantages/ Disadvantages	Application / Use
UTP	Category 3	10 bps	Advantages: → Cheaper → easy to install Disadvantages: → more prone to EMI	10 base T ethernet
	Category 5	up to 100 Mbps		fast ethernet, gigabit ethernet
	Category 5e	1 Gbps		fast ethernet, gigabit ethernet
STP	Category 6, 6a	10 Gbps	Advantages: → shielded → faster bandwidth → less susceptible Disadvantages: → expensive → greater installation effort	Gigabit ethernet, 10G ethernet (55 m) widely used in data centers
SSTP	Category 7	10 Gbps		gigabit ethernet, 10G ethernet (100 m)
Coaxial Cable	RG-6 RG-59 RG-11	10-100 Mbps	Advantages: → high bandwidth → immune to interference → low loss bandwidth → versatile Disadvantages: → limited dist. → cost → size bulky	Speed of signal is 500 m, television networks, high speed internet connection
Fibre Optics Cable	single mode multimode	100 Gbps	Advantages: → high speed → high bandwidth → high security → long distance Disadvantages: → expensive → requires skilled installer	max dist of fibre optics cable is around 100 m

Student observation

1. Crossover cable: transmit and receive wires are crossed; used to connect two similar devices.
   Straight cable: Same wiring standard on both ends; used to connect diff dvcs devices like PC to switch or router.
2. crossover cable
3. straight cable
5. Understanding: Involves arranging wires, inserting into RJ45 plugs, and crimping.
   challenges: Correct wire arrangement, stripping without damage, proper insertion, and crimping
   Output: Successful cables enable network connections; straight cables connect PCs to routers/switches, crossover cables connect two PCs directly.

RESULT

Thus, different types of network cables have been studied.

31/01/24