

AIM:

Study of different types of network cables.

- a) Understand different types of network cable
different types of cable used in networking areas
- 1) Unshielded Twisted Pair (UTP) Cable
 - 2) Shielded Twisted pair (STP) Cable
 - 3) Coaxial Cable.
 - 4) Fibre optic cable.

Cable type	Category	Max data transmission	Advantages / Disadvantages	Application / Use
	Category 3	10 bps	• cheaper in cost	10Base-T Ethernet
UTP	Category 5	up to 100 Mbps	• Easy to install as they have a small disadvantage.	Fast Ethernet, Gigabit Ethernet, Fast Ethernet, Gigabit Ethernet
	Category 5e	1 Gbps	• More prone to EMI	
STP	Category 6, 6a	10 Gbps	• Shielded • Faster than UTP • Less susceptible to noise	Gigabit Ethernet, 10G Ethernet, Widely used in datacenter
SSTP	Category 7	10 Gbps	• Disadvantage • Expensive • Greater effort Ethernet • High bandwidth 10 G Ethernet • Immune to interference • Versatile	Gigabit Ethernet, speed of signal up to 500m Television network High speed internet connection.
Coaxial	RG - 6			
Coaxial	RG - 59	10 - 100 Mbps		

RG - II

Disadvantage

- Limited disk
- Cost
- size is bulky

Advantage

- Maximum
- High-speed distance of
- High-bandwidth fibre optics
- High-secure cable is around
- Long distance 100 meters.

Dis-advantage

- Expensive
- Requires skill
- Installer.

fibre - singlemode 100 Gbps
optical, multimode

b) Make your own Ethernet Cross-over Cable/straight
Cable Tools and parts needed :

• Ethernet cabling. CAT5e is certified for gigabit support, but CAT5 cabling works as well, just over shorter distances.

• A crimping tool. This is an all-in-one networking tool shaped to push down the pins in the plug & strip & cut the shielding off the cables.

• Two RJ45 plugs.

• Optical two plug & shields.

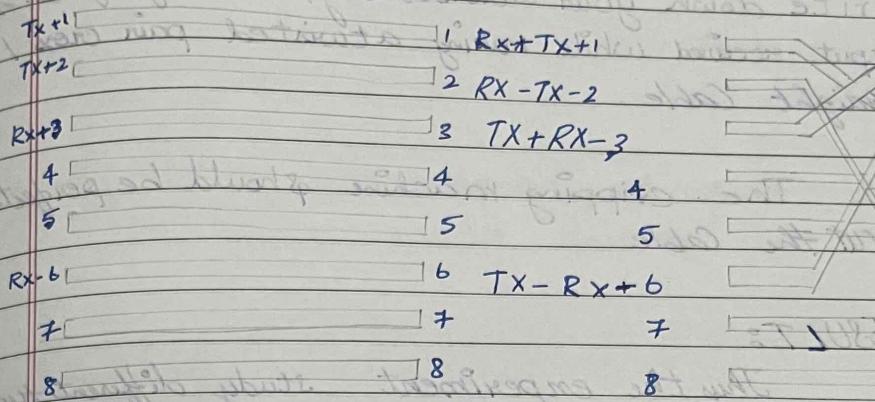
1)

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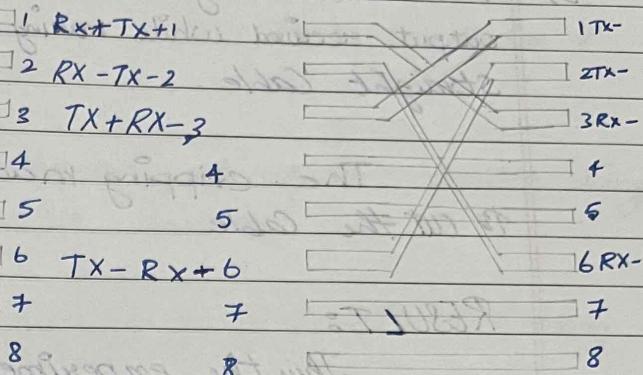
3)

4)

Straight thru Cable



X-over Cable



Difference b/w crossover cable & straight cable

Student observation

- 1) What is the difference b/w cross cable & straight cable?
Cross over cable are used to connect devices of the same nature (PC to PC, Router to Router, Switch to switch, etc).
Straight through cables are used to connect devices of different devices (PC to Router, Hub to Route, Hub to PC)
- 2) Which type of cable is used to connect two PC (straight / cross cable).

Cross over cable

- 3) Which type cable is used to connect a route (switch) of your PC?

Straight Cable

- 4) Find out the category of twisted pair cable used in your laptop to connect the PC to the network socket.
RS - 45 (UTP).

30/7/24

- 5) Write down your understanding, challenges faced & output received while making a twisted pair cross / straight cable.

The crimping machine should be perfect to cut the cable

RESULT:

Thus the experiment study different types of network cables has been done successfully.