

EXPNO.2 24/07/2024

AIM :- Study of different types of Network cables.

a) Understand different types of network cable

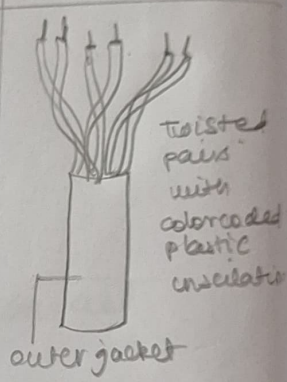
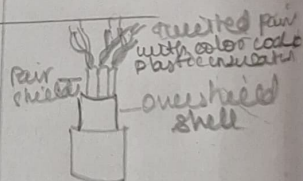

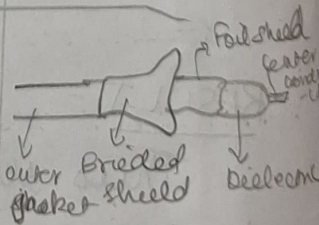
Different types of cable used in networking are :-

1- Unshielded Twisted Pair (UTP) Cable.

2- Shielded Twisted Pair (STP) cable

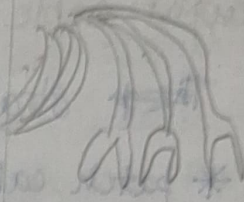
3- Coaxial cable

4- Fibre Optic Cable.

CABLE TYPE	CATEGORY	MAXIMUM DATA TRANSMISSION	ADVANTAGES / DISADVANTAGES	APPLICATION & USE	IMAGE
UTP	Category 3	10 bps	<u>Advantages</u> * Cheaper * Easy to install ∴ smaller overall diameter  <u>Disadvantage</u> • More prone to EMI	10Base-T Ethernet	 <p>Twisted pairs with color-coded plastic insulation</p> <p>outer jacket</p>
	Category 5	up to 100 Mbps		Fast Ethernet Gigabit Ethernet	
	Category 5e	1 Gbps		Fast Ethernet Gigabit Ethernet	
STP SSTP	Category 6	10 Gbps	<u>Advantages</u> • Shielded • Faster than UTP • Less susceptible to noise & interference  <u>Disadvantage</u> • Expensive • Greater installation effort.	Gigabit Ethernet 10G Ethernet widely used in data centers.	 <p>twisted pair with color-coded plastic insulation</p> <p>pair shield</p> <p>overall shield</p> 
	Category 7	10 Gbps		Gigabit Ethernet 10G Ethernet	
Coaxial Cable	RG-6 RG-59 RG-11	10-100 Mbps	<u>Advantages</u> • High bandwidth • Immune to interference • Low loss bandwidth • Versatile		 <p>outer jacket</p> <p>Braid shield</p> <p>Foil shield</p> <p>center conductor</p> <p>dielectric</p>



CABLE TYPE	CATEGORY	MAXIMUM DATA TRANSMISSION	ADVANTAGES / DISADVANTAGES	APPLICATION / USE
			<u>Disadvantages</u> • Limited distance • Cost • Size is bulky	• Speed of signal is 500m. • Television repair • High speed internet connections



## 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 short distances.

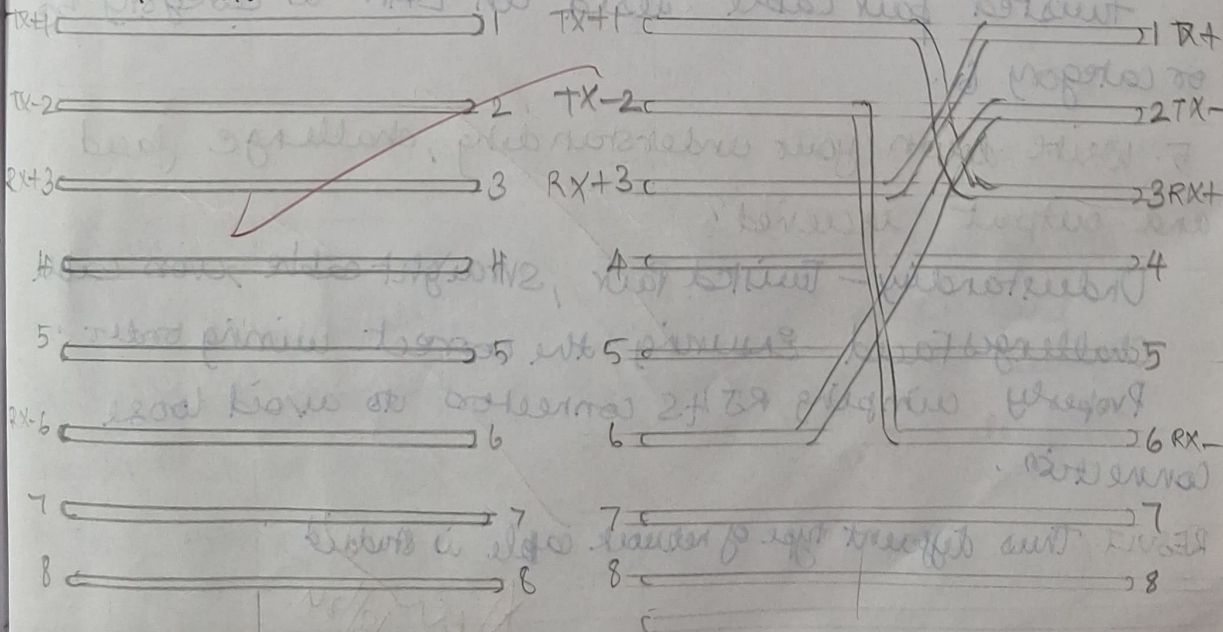
→ A crimping tool. This is an all in one networking tool shaped to push down the pins in the plug and strip & cut the shielding off the cables.

→ Two RJ45 plugs

→ Optional two plug shields

STRAIGHT THRU CABLE

X-OVER CABLE





## STUDENT OBSERVATION:-

1. What is the difference between cross cable and straight cable?

~~The~~ straight cable

\* patch cable

\* used to connect different types of devices like computer or switch or router.

Cross cable

\* crossover cable.

\* used to connect similar devices directly like computer or two switches.

2. Which type of cable is used to connect 2 PC?

Cross cable

3. Which type of cable is used to connect router/switch to your PC?

Straight cable.

4. Find out the category of twisted pair cable used in your LAN to connect the PC?

twisted pair cable used in LAN is category 5e or category 6.

5. Write down your understanding, challenge faced and output received?

Understanding - Twisted Pair, straight cable, cross cable

Challenges Faced - Ensuring the correct wiring order, Properly crimping RJ45 connectors to avoid loose connection.

RESULT: Thus different type of network cable is studied

*[Signature]*