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a). Aim. Study of different types of network cables.

understanding different types of network cables.

Cable Type	Category	Maximum Data transmission	Advantages / Disadvantages	Application / Use
UTP	3	10 bps	Advantages: * cheaper in cost. * Easy to instance as they have a smaller overall diameter. Disadvantages: * More prone to (EMI) electromagnetic interfau and noise.	10 Base-T ethernet. Fast ethernet, Gigabit ethernet. Fast ethernet, Gigabit ethernet.
	5	upto 100 mbps.		
	5e	1 Gbps.		
STP, SSTP	6, 6a	10 Gbps.	Advantages: * shielded. * Faster than UTP * less susceptible to noise and interfare. Disadvantages: * Expensive * Greater installation effort.	Gigabit, ethernet 10 g ethernet (55m) Widely used in data centres
	7	10 Gbps.		Gigabit ethernet, 10 g ethernet (100 m).
Coaxial Cable.	RG-6 RG-59 RG-11	10 - 100 mbps	Advantages: * High bandwidth. * Immune to interference. * Low loss Bandwidth * Versatile.	Speed of signal is 500m, Television network, High speed, internet connection.

			* Limited distance * cost * size is bulky.	
fibre optics cable	single mode multi mode.	100 Gbps	Advantages: * High speed. * High bandwidth. * High security * Long Distances. Disadvantages: * Expensive * Require skilled installation.	Maximum distance can only be around 100 meters

b). Make your own ~~ethernet~~ cross-over cable/ straight cable :-

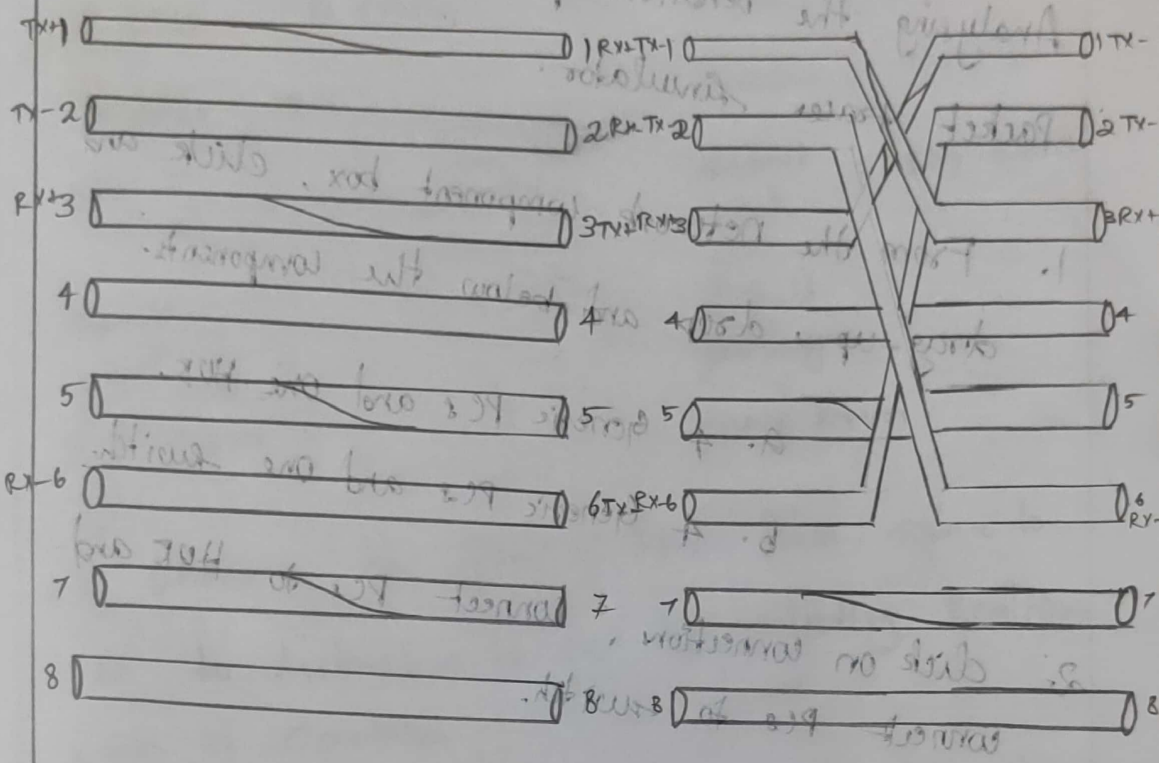
Tools and parts needed :-

* 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 and strip and cut the shielding off the cables.

- Two RJ45 plugs.
- Optional two plug shields.

Straight thru cable

X- over cable.



Student observation:

1. Straight thru cables are laid straight and used to connect different types of devices. Cross over cables are laid across each other in a specific order to connect two same PCs.
2. Cross cable
3. Straight cable.
4. Unshielded Twisted pair
5. Wire layouts, learning of the specific codes to lay cables.

Result: Thus different types of network cables are studied and making of straight / cross cable are observed.