

Practical - 2

Ques:

Study of different types of Network cables

Q) understand different types of network cable

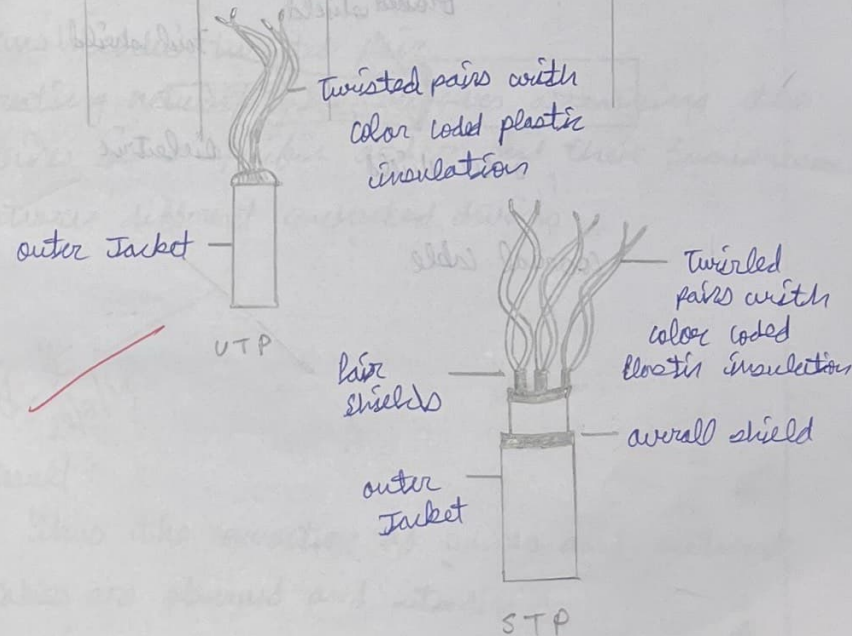
Different types of cable used in networking are:

- 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
UTP	category 3	10 Gbps	Advantages	10-Base-T Ethernet
	category 5	upto 100 Mbps	* cheaper in cost * Easy to install as they have a smaller overall diameter.	Fast Ethernet Gigabit Ethernet
	category 5e	1 Gbps	Disadvantages * More prone to (EMI) Electromagnetic Interference and noise.	Fast Ethernet Gigabit Ethernet
STP	category 6, 6a	10 Gbps	Advantages * Shielded * Faster than UTP * Less susceptible to noise and interference	Gigabit Ethernet, 10 G Ethernet (SSM)
SSTP	category 7	10 Gbps	Disadvantages * Expensive * Greater installation cost	Gigabit Ethernet, 10 G Ethernet (100 Gbps)

Coaxial cable	RG-6 RG-59 RG-11	10-100 Mbps	Advantages * High bandwidth * Immune to crosstalk * Low loss bandwidth * Versatile Disadvantages * Limited distance * Cost * Wire is bulky	speed of signal is 500ms. Television network high speed internet connections.
Fibre optic cable	Single mode Multi mode	100 Gbps	Advantages * High speed * High bandwidth * High security * Long distance Disadvantages: * Expensive * Requires skilled installers.	Maximum distance of fibre optics cable is around 100 meters.

Q) unshielded Twisted Pair (UTP) cable

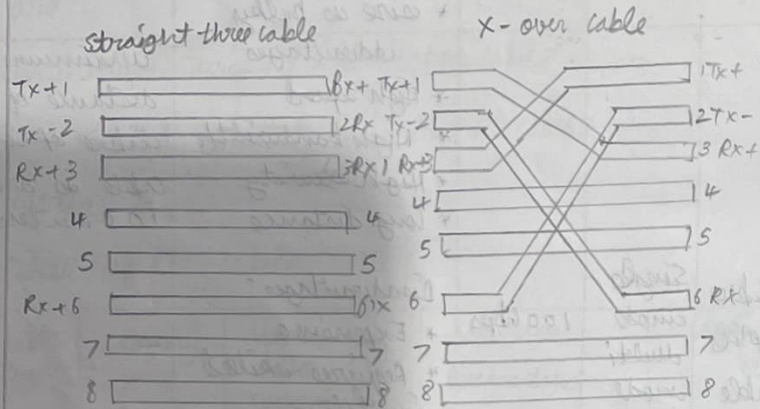


b) Make your own ethernet cross-over cable (straight)

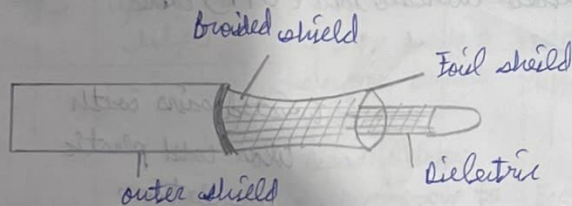
Cable

Tools and parts needed:

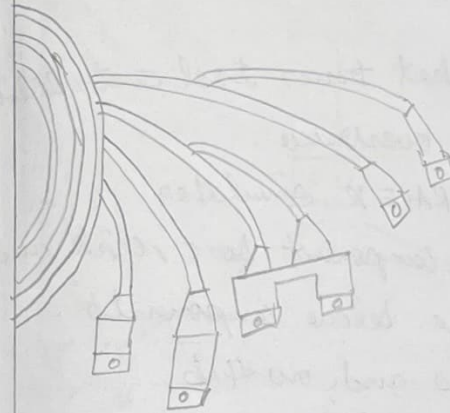
* Ethernet cabling, CAT 5 is certified for gigabit support, but CAT 5 cabling works as well, just over shorter distances.



Difference between crossover cable and straight cable



coaxial cable



Fibre optical cable

Student observation

- 1) Straight cable has same wiring on the both sides and connect different types of devices, whereas cross cable has different wiring on both ends and connect similar devices.
- 2) cross cable
- 3) Straight cable
- 4) unshielded twisted pair
- 5) creating network cable involves arranging the wires in a specific order and their transmission between different connected devices.

23/7/24

Result:

Thus the connection of wires and network cables are observed and studied.