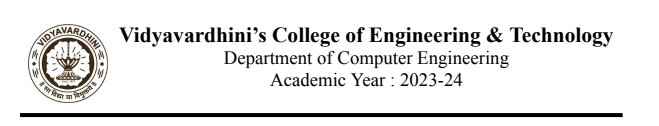
**Experiment No 1**

**Aim: Study of RJ45 and CAT6 Cabling and connection using crimping tool.**

**Theory**:

RJ45 and CAT6 cabling are commonly used in networking for transmitting data signals over Ethernet connections. Understanding their structure, cabling standards, and how to properly connect them using a crimping tool is essential for network installation and maintenance. Let's delve into these topics.

**RJ45 Connector:**

● RJ45 stands for Registered Jack 45 and refers to the modular connector commonly used for Ethernet connections.

● It has eight pins that transmit and receive data signals in a network.

● The connector has a plastic body with a latch to secure the connection.

**CAT6 Cable:**

● CAT6 (Category 6) is a standardized cable used for Ethernet networks.

● It supports higher data transmission rates and reduced crosstalk compared to previous categories like CAT5 or CAT5e.

● CAT6 cables consist of four pairs of twisted copper wires encased in an outer insulation. **Cabling Standards:**

● When creating network connections, it's essential to adhere to certain cabling standards to ensure reliable performance.

● The TIA/EIA-568-B standard specifies the wiring schemes for Ethernet cables. ● The most commonly used scheme is the T568B, where the wire color order from left to right is: white/orange, orange, white/green, blue, white/blue, green, white/brown, brown. **Crimping Tool:**

● A crimping tool is used to attach connectors to the ends of Ethernet cables. ● It has a built-in cutter for trimming excess wire and a mechanism for crimping the connector onto the cable, providing a secure connection.

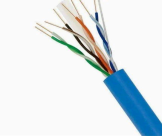
**Procedure for crimping RJ45 connectors on CAT6 cables:**

● Strip the outer insulation of the CAT6 cable using a cable stripper, exposing the four pairs of twisted wires.

● Untwist the wires and arrange them in the T568B wiring scheme mentioned earlier. ● Trim the wires to an even length, ensuring they are fully inserted into the connector. ● Insert the wires into the RJ45 connector in the correct order, verifying they reach the end of the connector.

● Place the connector into the crimping tool, ensuring the latch side is facing down. ● Squeeze the crimping tool firmly to crimp the connector onto the cable, ensuring the pins make contact with the wires.

● Repeat the process for the other end of the cable if you are creating a straight-through cable. If making a crossover cable, follow the T568A wiring scheme on the other end. ● Test the cable using a cable tester or by connecting devices to verify proper connectivity. **OUTPUT:**

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RJ45 connector CAT6

**CONCLUSION:**

We have understood and implemented the RJ45 and CAT6 Cabling and connection using crimping tools.