

**St. Francis Institute of Technology
Department of Computer Engineering**

COMPUTER NETWORK LAB

EXPERIMENT NO.1

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

THEORY: Crimping an RJ45 Connector Correctly Proper Wiring for Ethernet Cat5/Cat5e/Cat 6 Cable



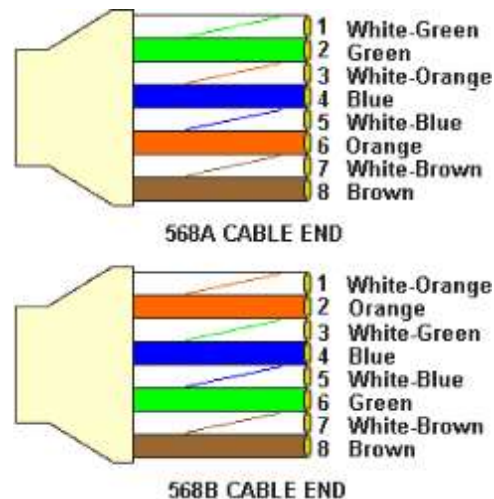
Cables can transmit information along their length. To actually get that information where it needs to go, you need to make the right connections to an RJ45 connector.

Your cable run needs to terminate into a connector, and that connector needs a jack to plug into.

Registered Jack 45 (RJ45) is a standard type of physical connector for network cables. RJ45 connectors are commonly seen with Ethernet cables and networks.

Modern Ethernet cables feature a small plastic plug on each end of the cable.

That plug is inserted into RJ45 jacks of Ethernet devices. The term “plug” refers to the cable or “male” end of the connection while the term “jack” refers to the port or “female” end.



T568A or T568B Wiring Standard:

T568A and T568B are the two colour codes used for wiring eight-position modular plugs. The only difference between the two color codes is that the orange and green pairs are interchanged.

There are no transmission differences between T568A and T568B cabling schemes.

T568B wiring pattern is recognized as the preferred wiring pattern.

STEP 1:

Using a Crimping Tool, trim the end of the cable you're terminating, to ensure that the ends of the conducting wires are even.

STEP 2:

Being careful not to damage the inner conducting wires, strip off approximately 1 inch of the cable's jacket, using a modular crimping tool or a UTP cable stripper.

STEP 3:

Separate the 4 twisted wire pairs from each other, and then unwind each pair, so that you end up with 8 individual wires. Flatten the wires out as much as possible, since they'll need to be very straight for proper insertion into the connector.

STEP 4:

Holding the cable with the wire ends facing away from you. Moving from left to right, arrange the wires in a flat, side-by-side ribbon formation, placing them in the following order: white/orange, solid orange, white/green, solid blue, white/blue, solid green, white/brown, solid brown.

STEP 5:

Holding the RJ45 connector so that its pins are facing away from you and the plug-clip side is facing down, carefully insert the flattened, arranged wires into the connector, pushing through until the wire ends emerge from the pins. For strength of connection, also push as much of the cable jacket as possible into the connector.

STEP 6:

Check to make sure that the wire ends coming out of the connector's pin side are in the correct order; if not, remove them from the connector, rearrange into proper formation, and re-insert. Remember, once the connector is crimped onto the cable, it's permanent. If you realize that a mistake has been made in wire order after termination, you'll have to cut the connector off and start all over again!

STEP 7:

Insert the prepared connector/cable assembly into the RJ45 slot in your crimping tool. Firmly squeeze the crimper's handles together until you can't go any further. Release the handles and repeat this step to ensure a proper crimp.

STEP 8:

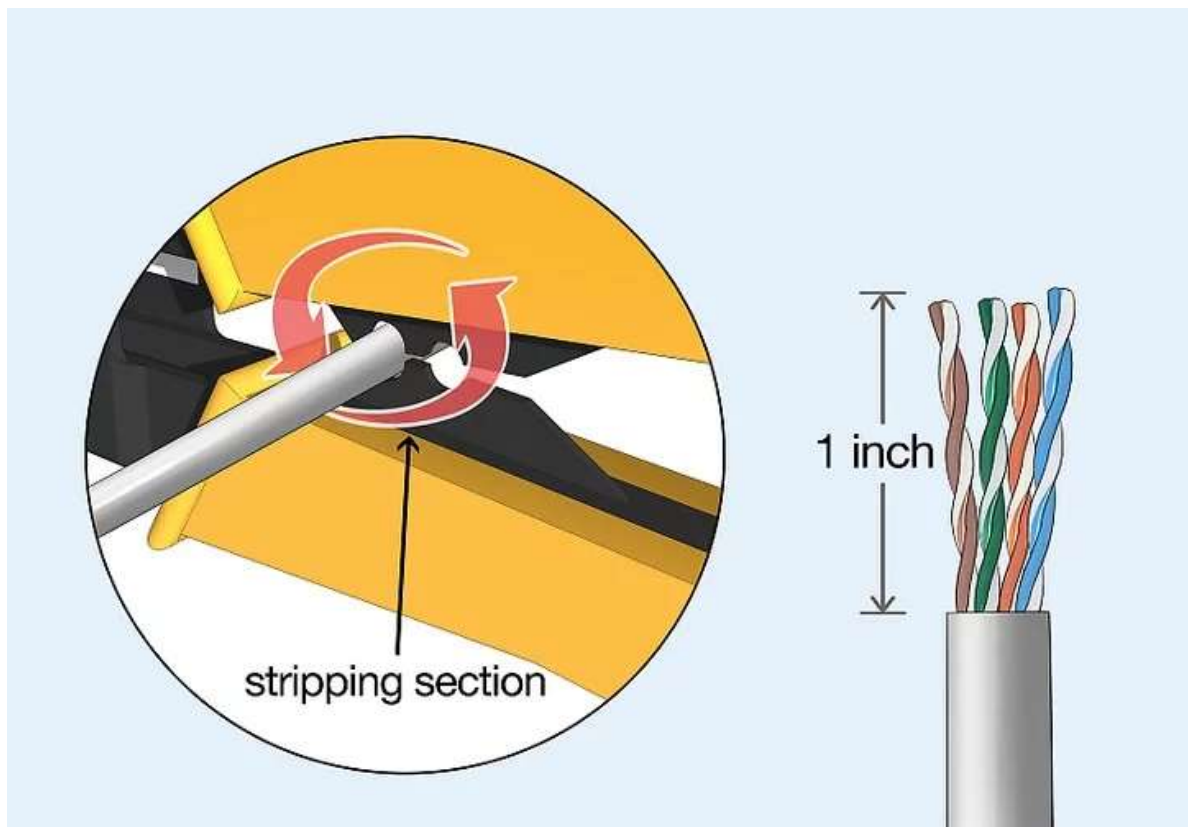
If your crimper doesn't automatically trim the wire ends upon termination, carefully cut wire ends to make them as flush with the connector's surface as possible. The closer the wire ends are trimmed, the better your final plug-in connection will be

STEP 9:

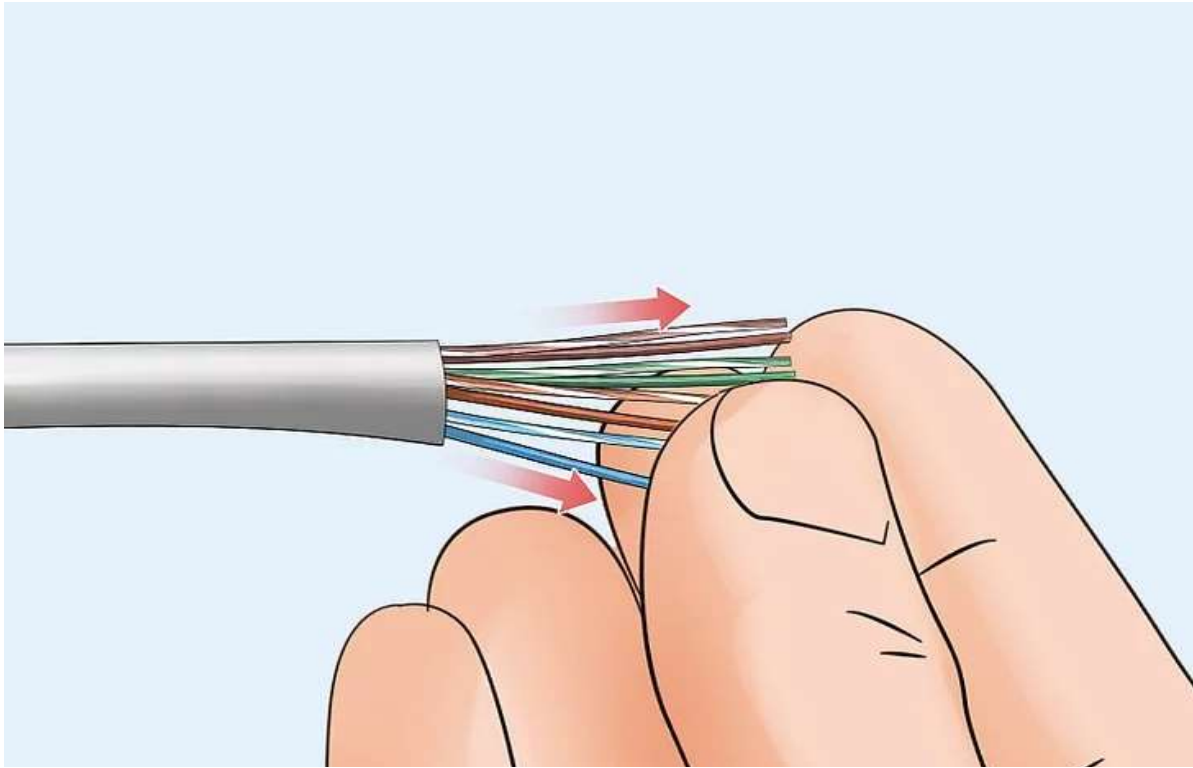
After the first termination is complete, repeat process on the opposite end of your cable

Graphical Steps:

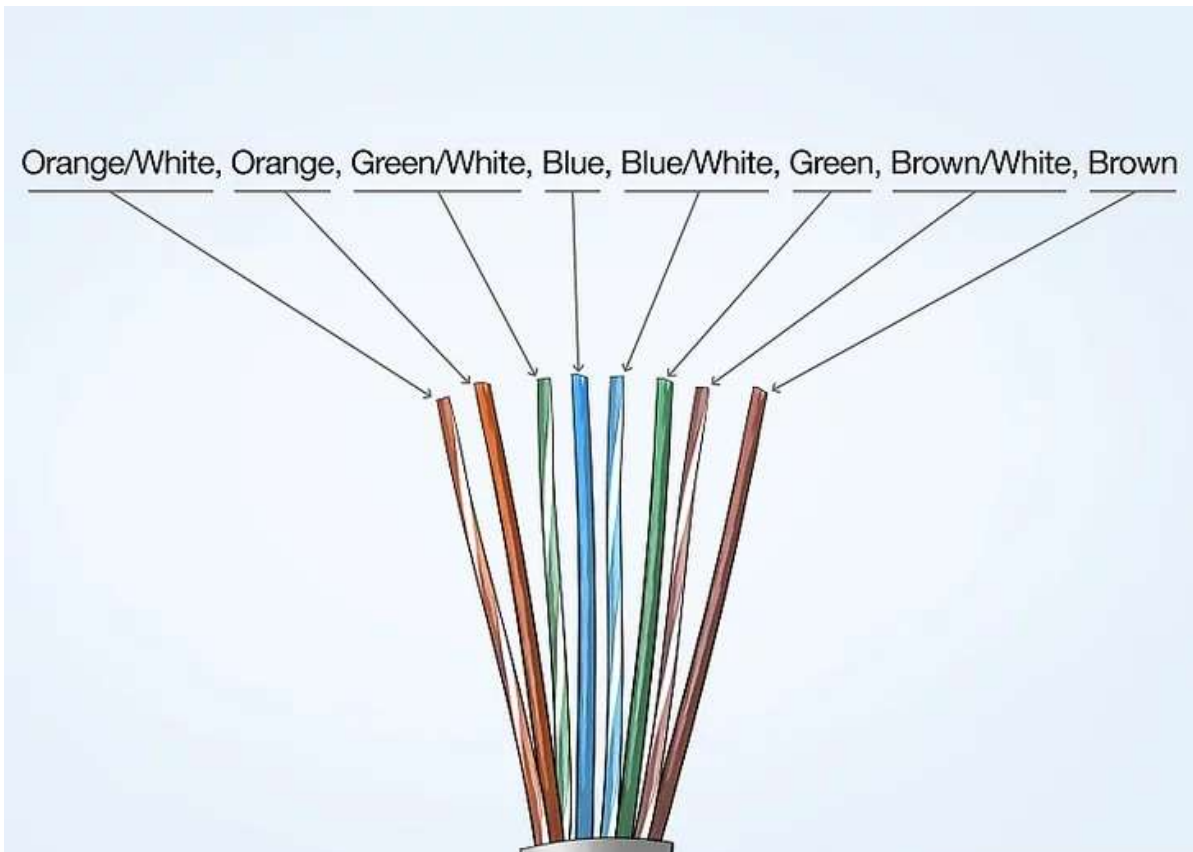
STEP 1:



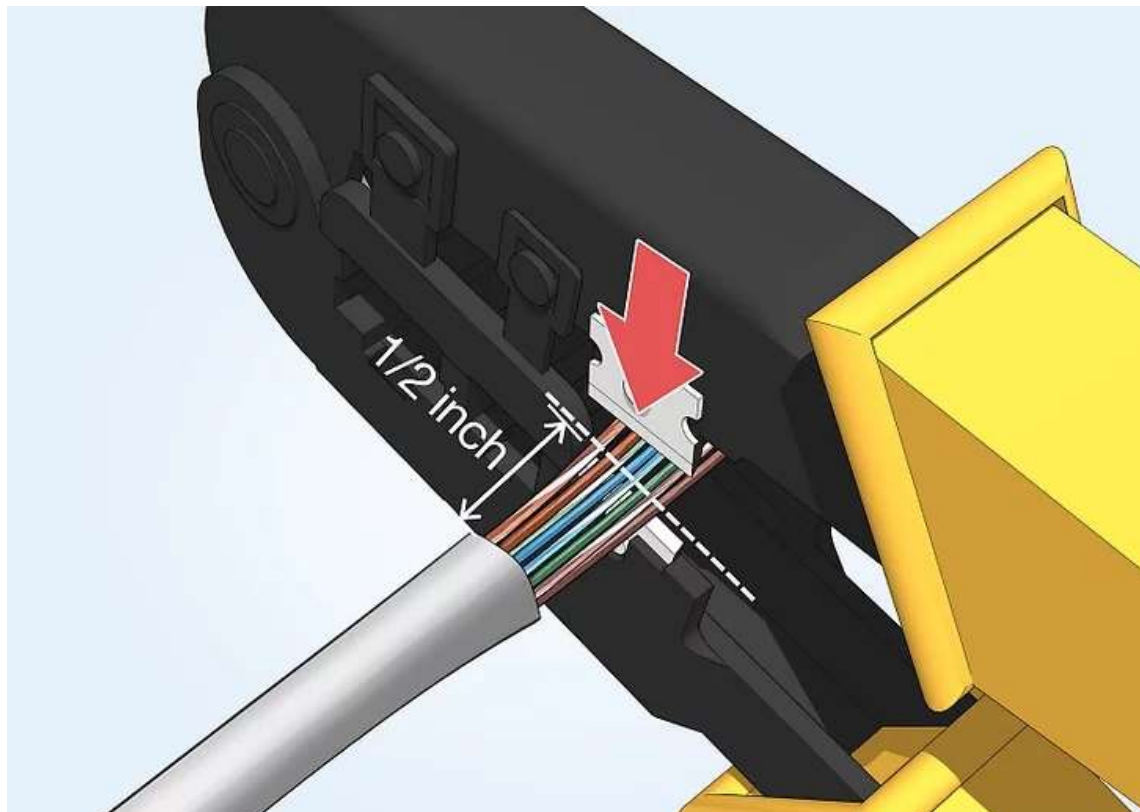
STEP 2:



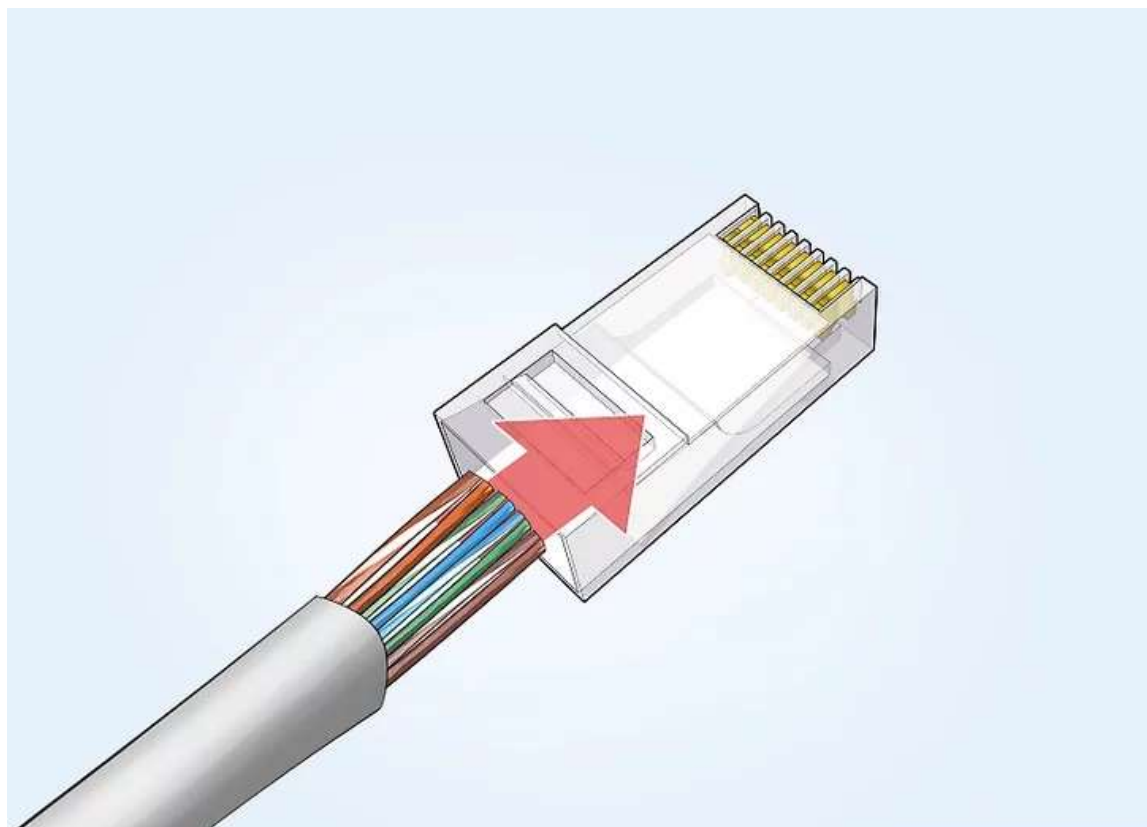
STEP 3:



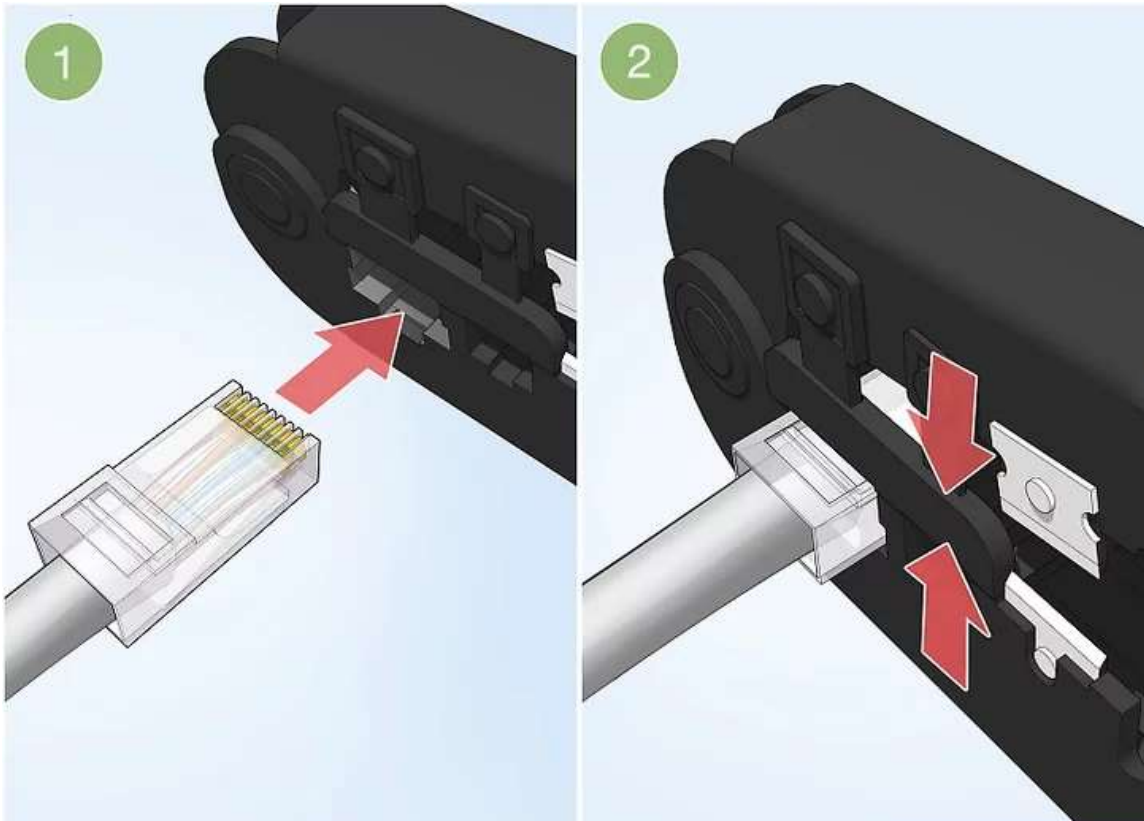
STEP 4:



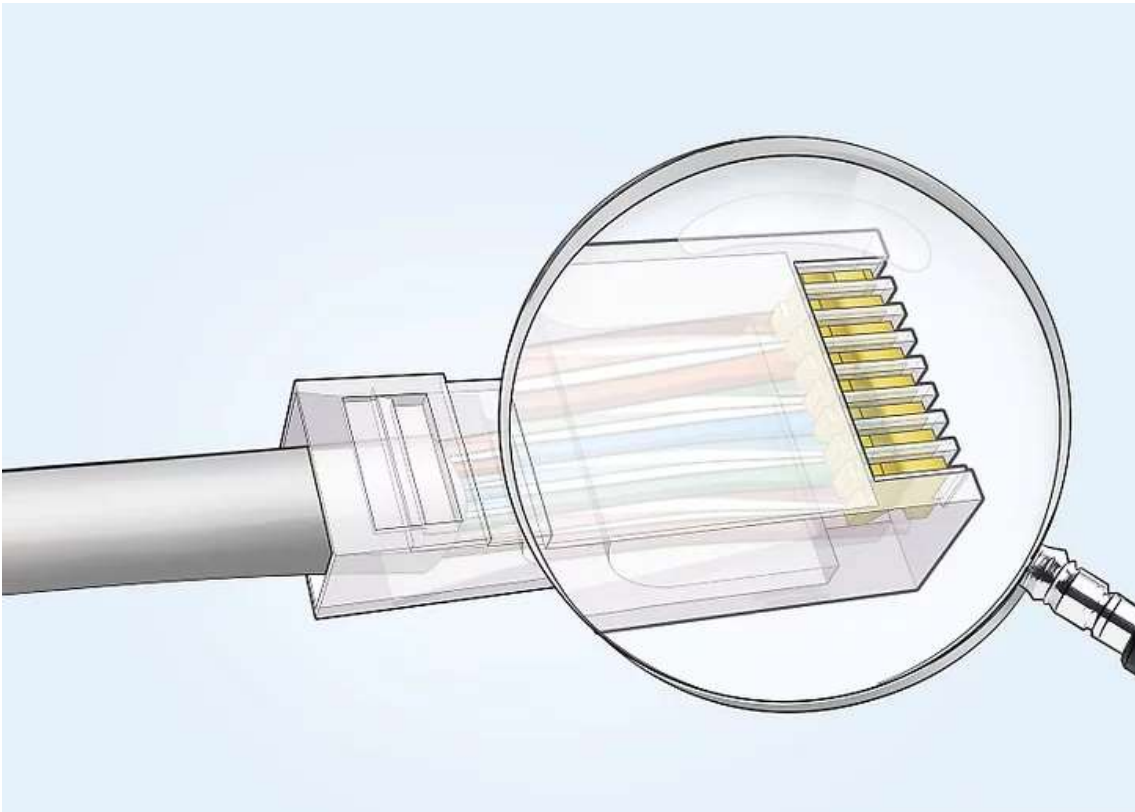
STEP 5:



STEP 6:



STEP 7:



CONCLUSION: Thus, we have studied the use of a crimping tool for RJ-45.