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| CONSTRUCTION OF UTP CABLES |  |
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|  | 07 March 2024Installation Of IP Based Devices *Group 2 members:* |
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## **UTP Cable Construction Report**

**Task:** Construct UTP (Unshielded Twisted Pair) cables using crimping tool, Cat6 Ethernet cable, and RJ-45 connectors.

**Materials:**

* Cat6 UTP cable (2m\*3)
* RJ-45 connectors
* Crimping tool

**Procedure:**

1. **Measure and cut the cable:** Measure the desired length of the UTP cable. Typically, it's recommended to keep the length between 1 and 5 meters to avoid signal degradation. Use the cable stripper/cutter to make a clean cut at the desired length.
2. **Strip the cable jacket:** Carefully strip approximately 1-1.5 inches (2.5-4 cm) of the outer jacket of the cable. Be cautious not to damage the inner wires.
3. **Untwist and separate the wires:** Gently untwist the four twisted pair wires within the cable jacket. Separate them carefully, maintaining the individual twists as much as possible.
4. **Arrange the wire order:** Choose a wiring scheme, either EIA/TIA-568A or EIA/TIA-568B. These standards define the color-coding sequence for the wires in the RJ-45 connector.

Here are the color sequences for both standards:

* + White/Orange
  + Orange
  + White/Green
  + Blue
  + White/Blue
  + Green
  + White/Brown
  + Brown

1. **Align and straighten the wires:** Align the wires according to the chosen color scheme, ensuring each wire is straight and untangled for proper insertion into the connector.
2. **Trim the wires:** Use the cable stripper/cutter to trim the wires to an even length, leaving approximately 1/2 inch (1.25 cm) of exposed conductor beyond the outer jacket.
3. **Insert the wires into the RJ-45 connector:** Carefully insert each wire into the designated slot of the RJ-45 connector, following the chosen color scheme. Ensure each wire reaches the bottom of the connector without bending or fraying.
4. **Crimp the connector:** Place the RJ-45 connector into the crimping tool, aligning the connector with the designated notch for Cat6 cables. Squeeze the crimping tool firmly and evenly to secure the connector onto the cable.
5. **Repeat the process:** Repeat steps 1-8 to create additional UTP cables of the desired length.

**Testing:**

After finishing all step we used to test the functionality of the newly created UTP cables using a cable tester to ensure proper connectivity and avoids potential network issues.

**Conclusion:**

This report documents the successful construction of UTP cables using Cat6 Ethernet cable, RJ-45 connectors, and a crimping tool. The report outlines the materials used, procedures followed, and optional testing recommendations.

**Disclaimer:** This report is for informational purposes only and should not be taken as a substitute for professional guidance or safety training. Always exercise caution and follow proper safety protocols when handling electrical components and tools.

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