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Module 5 Submission

1. A) The differences between solid-wire UTP and stranded -wire UTP on a technical viewpoint would be the electrical performance and their flexibility. Solid-wire UTP has a much more reliable and stable electrical conductors that can carry a wider range of electrical frequencies over a wider range. While stranded is not as stable when it comes to the frequencies it provides, it is much more flexible then solid-wire and can be used in areas when the wires might need to be bent and contorted to fit in harder to work with places.
   B) solid-wire UTP compared to stranded-wire UTP has a much more stable and a wider range of frequencies. This is due to the solid cables being better at conducting electricity then the stranded wires. This also means that solid-wire has a lower susceptibility to high-frequency effects and lower DC resistance than the stranded counterparts.
   C) Stranded-wire UTP is much more flexible and can be used in harder to reach spaces, compared to solid-wire UTP, which is much more ridged and stiffer.
   D) Solid-wire UTP would be typically used more within permanent installations, so places like major data and IT centers from major companies, like Verizon or Google. Stranded-wire UTP is used more within the confines of houses for telephone lines and connecting a computer to a router via the ethernet port.
   E) Solid-wire UTP should be the only type of UTP wire that is connectorized at a factory.

2. If you're running a wire and you need it to run 50 meters, you should not cut it exactly 50 meters, but instead you should cut it to where you have more leeway incase you mess up at some point, like during the stripping and crimping of said wire.

3. It's important to score the jacket of the cord with a stripping tool instead of cutting all the way though the jacket, because you don't want to cut the wires inside of the jacket, as you will need them undamaged.

4. A) The color of the four pars are orange, green, blue, and brown.
   B) For a T568B connector, pin 1- white-orange, pin 2- orange, pin 3- white-green, pin 4- blue, pin 5- white-blue, pin 6- green, pin 7- white-brown, pin 8- brown
   C) Yes, the same wire that went into pin 3 would be the same wire as the other end.

5. The wire must be limited to 1.25 cm (0.5 inch) or slightly less.

6. A) RJ-45's insulation displacement requires you, in one hand, hold the connector, clip side down, with the opening in the back of the connector facing you. Slide the wires into the connector, making sure that they are in the correct order. Push the wires all the way to the end or proper electrical contact will not be made with the pins at the end. Before you crimp the connector, look down at the top of the connector, holding the tip away from you. The first wire on your left should be mostly white and so should ever second wire. Place the connector with the wires into the crimp and push down firmly and do this a couple of times to make sure the connector is nice and tight on the wires. After that, test the connection and make sure it's good.

   B) The strain relief approach is when you crimp, the crimper also forces a ridge in the back of the RJ-45 connector into the jacket of the cord. This means that if someone pulls on the cord, they will be pulling only on the point where the jacket has the ridge forced into it, which will cause no strain to the wires connected to the pins.

7. A) You should always test every cord in the field after installation, to make sure that it works properly and that nothing went wrong during the installation, or nothing is wrong with the wires inside of the connector.

B) Inexpensive testers are called continuity testers, which performs the simplest test of whether the wire is arranged in the correct order wit the two RJ-45 connectors and are making good electrical contact with the connector, which only cost about $100.

C) better testers will cost you $500-$2000 and they test to make sure that the connectivity is correct, like continuity testers, but they also send test signals though the cord to determine whether the cord meets TIE/EIA-568 signal-quality requirements. They also include time domain reflectometry (TDR), which sends a signal and listens for echoes in order to measure the length of the UTP cord or to find if and where breaks exist in the cord.