UNIVERSITY OF DAR ES SALAAM

COLLEGE OF INFORMATION AND COMMUNICATION TECHNOLOGIES

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

IS 171 LAB WORK

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Lab Work No.: 02 **Date Conducted:** 2nd June 2021

Title: MAKING CONNECTIONS NETWORKING DEVICES/NODES USING CAT5e CABLE.

Group: CS9

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Submission Date: 16th June 2021

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Remarks:_____

1. Introduction

Under Computer Networking the transmission of files/data must be done in a specified Networking Medium. There are various number of Networking Media, either Wired or Wireless, including; Twisted Pair cables (e.g. Cat5e cable), Coaxial cable, Fiber Optic cable etc. In addition, the choice a suitable Networking Media depends on the following major factors; Data Transmission rate, Distance between the nodes, and the Attenuation, without forgetting the cost and ease of installation.

2. Objective(s)

Objective of this experiment was to create/make connections between two different Networking Nodes (Computer & Hub) by using Twisted Pair cable (Cat5e cable).

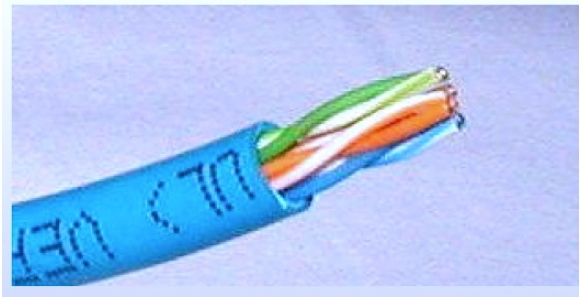
3. Apparatus/Equipment list

The following tools/equipments were used during the experiment;

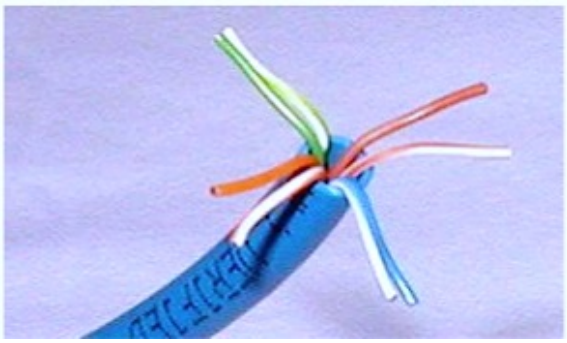
a) Twisted Pair cable (Cat5e cable)
b) RJ-45 Connectors
c) Cable Stripper
d) Crimping Tool

4. Experiment Procedures

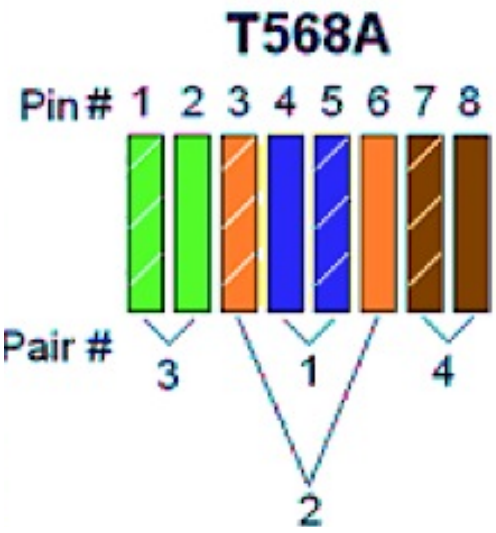
i. The sheath of Cat5e cable was stripped (approximately a distance of 1.5 inches) at each end.



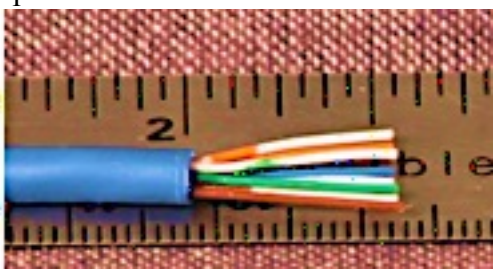
ii. Wires were untwisted on both ends.



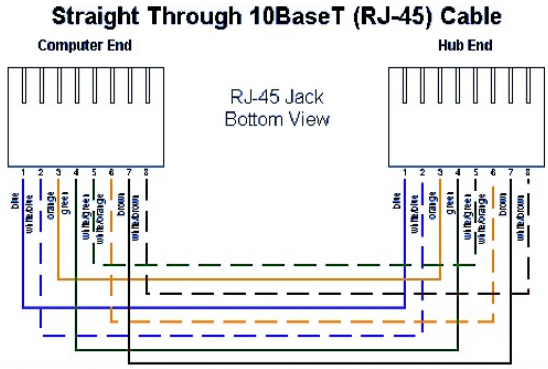
iii. Wires were arranged by following the colour order of T568A. From left-to-right; White/Green, Green, White/Orange, Blue, White/Blue, Orange, White/Brown, Brown. The step was done to both ends, meaning that Straight-Through method was applied.



iv. Wires were trimmed evenly (2.5cm), leaving about 0.5 inches of wires exposed.

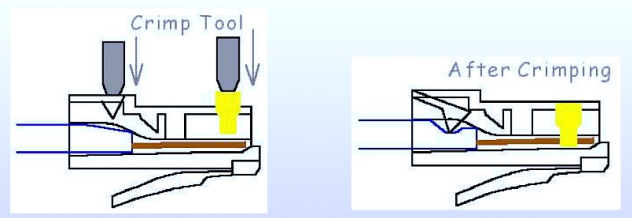


v. RJ-45 Connectors were attached, on both ends, by making sure that wire order is maintained from left-to-right with the RJ-45 Tab facing downward.



vi. Check up was done to ensure that all wires extended to the end, and the sheath was well placed inside the RJ-45 Connector.

vii. Crimping tool was used to crimp connector to the cable end. It was done on both sides.



viii. Each end was connected to the special tool (Multi-Network Modular Cable Tester) to test their connectivity, and the Green Signals displayed properly indicating that the connection was successfully.

5. Results

Green light signals were displayed on the Tester indicating that connection between each end was successfully.

6. Results discussion and Conclusion

Green signals being displayed on the Tool doesn't totally prove that the Transmission factors (attenuation, interferences, etc.) are well controlled. On the other hand, it's likely for the Red signals to be displayed on the Tool indicating that a certain number of pins are wrongly arranged. When making a connection between networking nodes/devices using a Twisted pair cable, you must consider the type of networking devices. Straight-Through (either T568A on both ends or T568B on both ends) is used to the same type of networking devices. Cross-over (T568A on one end, T568B on the other end) is used to different type of networking devices.

7. Reference Reading(s)

Kurose, James F. & Ross, Keith W. (2013). *Computer Networking: A Top-Down Approach (6th Edition)*. United States of America: Pearson Education Inc.

Tanenbaum, Andrew S. & Wetherall, David J. (2011). *Computer Networks (5th Edition)*. United Sates of America: Pearson Education Inc.