****

**COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS**

**UNIVERSITI TEKNOLOGI MARA**

**COURSE: ITT300 - INTRO. TO DATA COMMUNICATIONS AND NETWORKING**

**INDIVIDUAL ASSIGNMENT: ETHERNET CABLE CONSTRUCTION AND PEER-TO-PEER NETWORK CONFIGURATION**

This assignment aims to develop your skills in constructing Ethernet cables and configuring a peer-to-peer (P2P) network using the cables you create. You will gain practical experience in cable termination and network setup, essential skills for networking professionals.

Tasks:

1. **Ethernet Cable Construction (30%):**

* Research the standards and specifications for twisted-pair Ethernet cables, such as Cat5e or Cat6.
* ~~Acquire the necessary tools and materials for cable construction, including bulk Ethernet cable, RJ45 connectors, and a crimping tool.~~
* Review and specify the URL video(s) for cable construction.
* ~~Follow industry best practices and guidelines to construct at least two Ethernet cables of specified lengths (e.g., 5 meters each).~~
* ~~Test each cable for continuity and proper termination to ensure they meet the required standards.~~
* Identify the setup differences between Ethernet Cables. Such as Cat5 , Cat5e and Cat6
* Document the cable construction process, including any challenges encountered and how they were addressed.

1. **Peer-to-Peer Network Configuration (50%): Using Laptop as Mobile Hotspot**

* Design a simple peer-to-peer network topology using the hotspot you constructed.
* Identify the devices to be connected in the network, such as computers, printers, or network switches.
* Assign IP addresses to each device within the same subnet, ensuring they can communicate with each other.
* Configure network sharing settings to enable file sharing and printer sharing among devices.
* Implement basic network security measures, such as enabling firewalls and setting strong passwords for user accounts.
* Document the network configuration process step-by-step, including IP addressing details and security settings.

1. **Testing and Evaluation (20%):**

* Conduct comprehensive testing of the peer-to-peer network to ensure proper functionality.
* Test file sharing capabilities between devices, ensuring files can be transferred seamlessly.
* Verify printer sharing functionality by printing from different devices connected to the network.
* Perform network performance tests to evaluate data transfer speeds and latency.
* Evaluate the overall reliability and security of the network configuration.
* Reflect on the challenges faced during cable construction and network configuration, and discuss lessons learned.

**Submission Guidelines:**

Submit a detailed report that includes documentation of Ethernet cable construction, network topology design, network configuration steps, testing results, and reflections.

Include photographs or diagrams illustrating the cable construction process and network topology.

Ensure the submission is well-organized, clear, and follows standard academic writing conventions.

Submit the assignment by the specified deadline.

Note: Plagiarism will not be tolerated. All work must be original and properly cited if referencing external sources.

TASK 1: ETHERNET CABLE CONSTRUCTION

TASK 2: PEER-TO-PEER NETWORK CONFIGURATION

TASK 3: TESTING AND EVALUATION