VIGNAN'S NIRULA
INSTITUTE OF TECHNOLOGY & SCIENCE FOR WOMEN
(Approved by AICTE, New Delhi & Affiliated to JNTU Kakinada)
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Department of Information Technology

Innovative Teaching Practice

Faculty Name : Dr.D.Anveshini, Dr.K.Bharanitharan
Course Name : Computer Networks
Class : III B.Tech I Semester
Academic Year : 2022-23
Title of the Topic : Ethernet
Activity Name : One Minute Summary

Objective:

To engage students in actively summarizing their understanding of *Ethernet networking*, focusing on its structure, functionalities, and performance differences between various Ethernet standards and network topologies.

Activity Steps: Ethernet (Networking)

1. Introduction (5-10 minutes):
• Briefly explain the fundamentals of Ethernet, including its role in local area networks (LANs).
• Discuss key components of Ethernet, such as MAC addresses, Ethernet frames, and network topology.
• Introduce the difference between wired Ethernet (e.g., Cat5, Cat6 cables) and wireless networking.
• Touch on the evolution of Ethernet standards, including 10BASE-T, 100BASE-TX, and 1000BASE-T.

2. One-Minute Paper Activity:
• At the end of the session, ask students to take 1 minute to respond to the following questions:

Multiple Choice Questions (MCQs):

1. Which Ethernet standard supports speeds of up to 1 Gbps?
a) 10BASE-T
b) 100BASE-TX
c) 1000BASE-T
d) 10GbE
Answer: c) 1000BASE-T
2. What is the main function of a MAC address in Ethernet?
a) To provide encryption for network traffic
b) To identify devices on a network
c) To manage IP address allocation
d) To provide routing information
Answer: b) To identify devices on a network

3. Which of the following is NOT a typical Ethernet cable?
   a) Cat5
   b) Cat6
   c) HDMI
   d) Cat5e
   Answer: c) HDMI

True/False:

1. Ethernet networks typically use the star topology.
Answer: True

2.Ethernet supports both half-duplex and full-duplex communication modes.
Answer: True

Fill-in-the-Blanks:

1. In Ethernet, a device's unique identifier is called a/an _____.
Answer: MAC address

2.The maximum distance for 100BASE-TX Ethernet is _____ meters.
Answer: 100

Short Answer Questions:

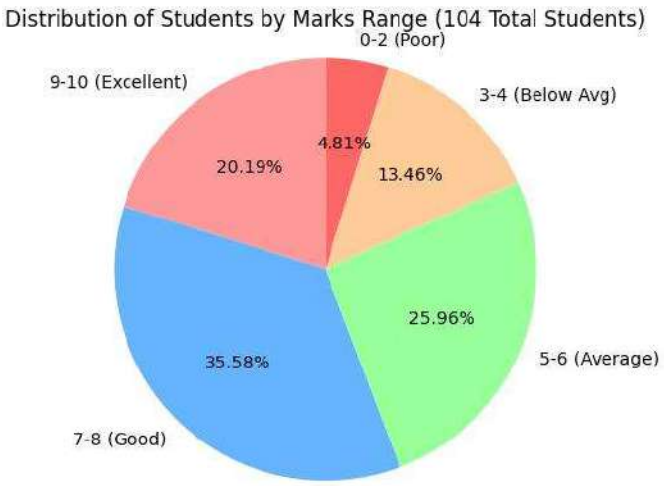
1. Explain the difference between half-duplex and full-duplex Ethernet communication.
Answer: Half-duplex allows data to be sent in both directions but not at the same time, while full-duplex allows data to be sent and received simultaneously.

2.What role does the Ethernet frame play in network communication?
Answer: The Ethernet frame encapsulates data for transmission across the network, providing addressing, error checking, and synchronization.

3.How does Ethernet handle data collisions in a shared network environment?
Answer: Ethernet uses Carrier Sense Multiple Access with Collision Detection (CSMA/CD) to detect and resolve data collisions by retransmitting data after a random backoff period.

Assessment Analysis

Marks Range	Number of Students	Percentage
9-10 (Excellent)	21	20.19%
7-8 (Good)	37	35.58%
5-6 (Average)	27	25.96%
3-4 (Below Avg)	14	13.46%
0-2 (Poor)	5	4.81%
Total	104	100%



Conclusion

The One-Minute Summary activity on Ethernet networking successfully helped assess students'understanding of key concepts like standards and protocols. It encouraged quick reflection and reinforced their learning through active participation.

Signature of the Faculty **Head of the Department**