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A
PPT Presentation On
"Computer Networking"

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Introduction

- A computer network is a system of interconnected devices that communicate to share data and resources.

Types of Networks

- • LAN: Small area like an office

- • WAN: Covers large regions, including the Internet

- • MAN: City-wide network

- • PAN: Personal devices like smartwatches and phones

Network Topologies

- • Bus: Single communication line

- • Star: Devices connect to a central hub

- • Ring: Devices in a circular layout

- • Mesh: Multiple connections for redundancy

- • Hybrid: Combination of different topologies

Networking Devices

- • Router: Directs network traffic

- • Switch: Connects multiple devices

- • Hub: Basic device forwarding data

- • Modem: Converts digital to analog signals

- • Access Point: Provides wireless connectivity

Network Protocols

- • TCP/IP: Internet communication

- • HTTP/HTTPS: Web browsing protocols

- • FTP: File transfer protocol

- • SMTP/POP3/IMAP: Email protocols

IP Addressing

- • IPv4: 32-bit addressing, limited space

- • IPv6: 128-bit addressing, more addresses

- • Private vs. Public IPs

- • Static vs. Dynamic IPs

Wireless Networks

- • Wi-Fi: Wireless internet

- • Bluetooth: Short-range communication

- • 5G: High-speed mobile networks

- • Satellite: Remote and global coverage

Network Security

- • Firewalls: Prevent unauthorized access

- • Encryption: Secures data transmission

- • VPN: Masks IP addresses for privacy

- • IDS: Detects suspicious network activity

Future of Networking

- • AI: Automates network management

- • Cloud Networking: Remote access to resources

- • Edge Computing: Faster data processing

- • Quantum Networking: Ultra-secure communications

Conclusion

- Networking is essential for modern communication. Emerging technologies like AI, cloud computing, and cybersecurity will continue shaping the future of networking.