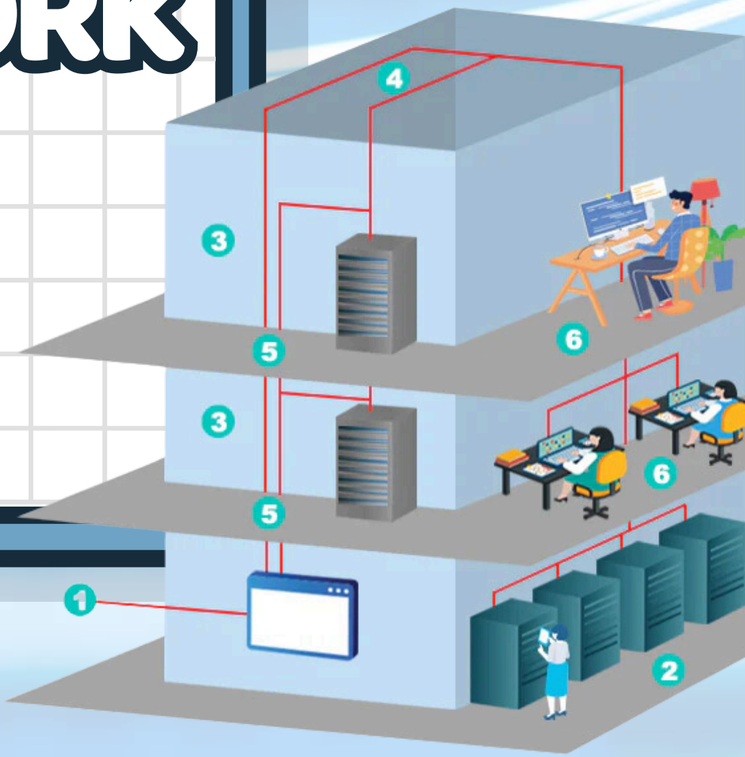
CSS 4-SHS-12

LESSON 3.2

STRUCTURED NETWORK CABLING



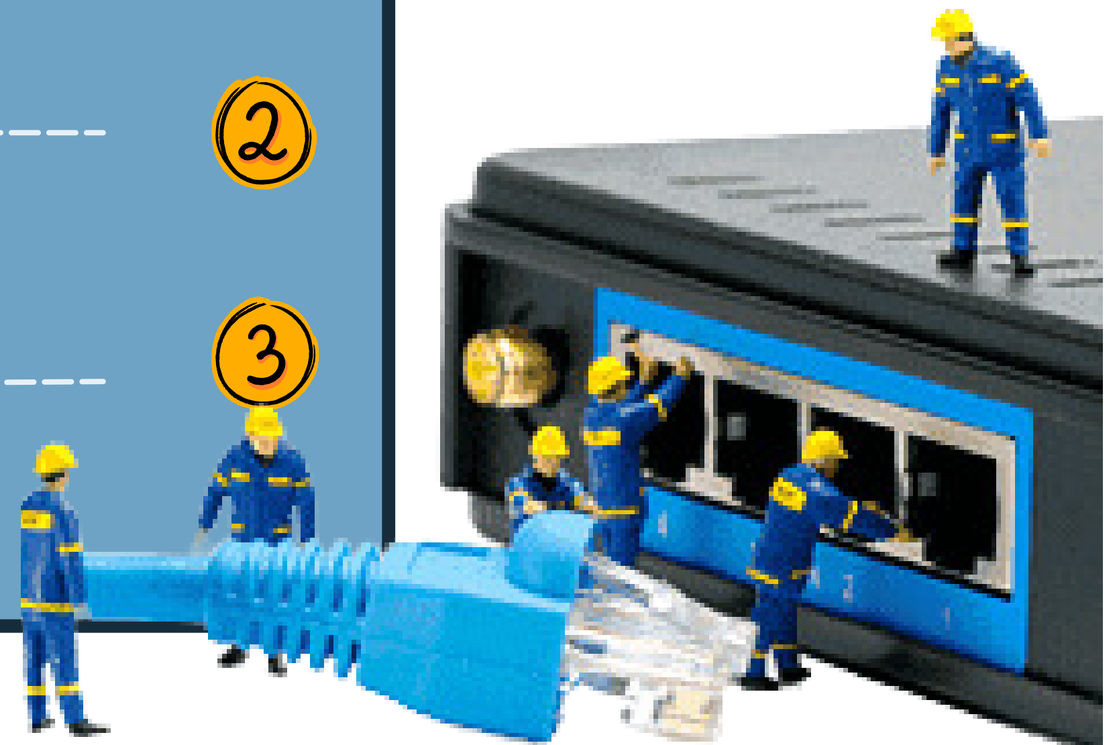
MS. LESLIE ARRIO, LPT

LEARNING OBJECTIVES

Identify the components of a structured cabling system. _____ 1

Explain the importance of standardized cabling structures. _____ 2

Analyze the impact of cabling structure on network performance. _____ 3



Structure Cabling System

A structured cabling system is a complete system of cabling and associated hardware, which provides a comprehensive telecommunications infrastructure. This infrastructure serves a wide range of uses, such as to provide telephone service or transmit data through a computer network.

Structured cabling manages the wired and wireless network including connecting equipment, hardware, software, pathways, work areas and facilities.

Why we have a Structured Cabling in Networking ?

TIA AND EIA STANDARD

Electronic Industries Alliance

Structured cabling allows for the easy integration of emerging technologies to meet growing bandwidth demands and cuts down on human error and confusion in the data center.

HISTORY OF STRUCTURED NETWORK CABLING

- 1980 -

Variety of proprietary systems

Lacking of Flexibility

Troubleshooting complicated

required major reconfiguration

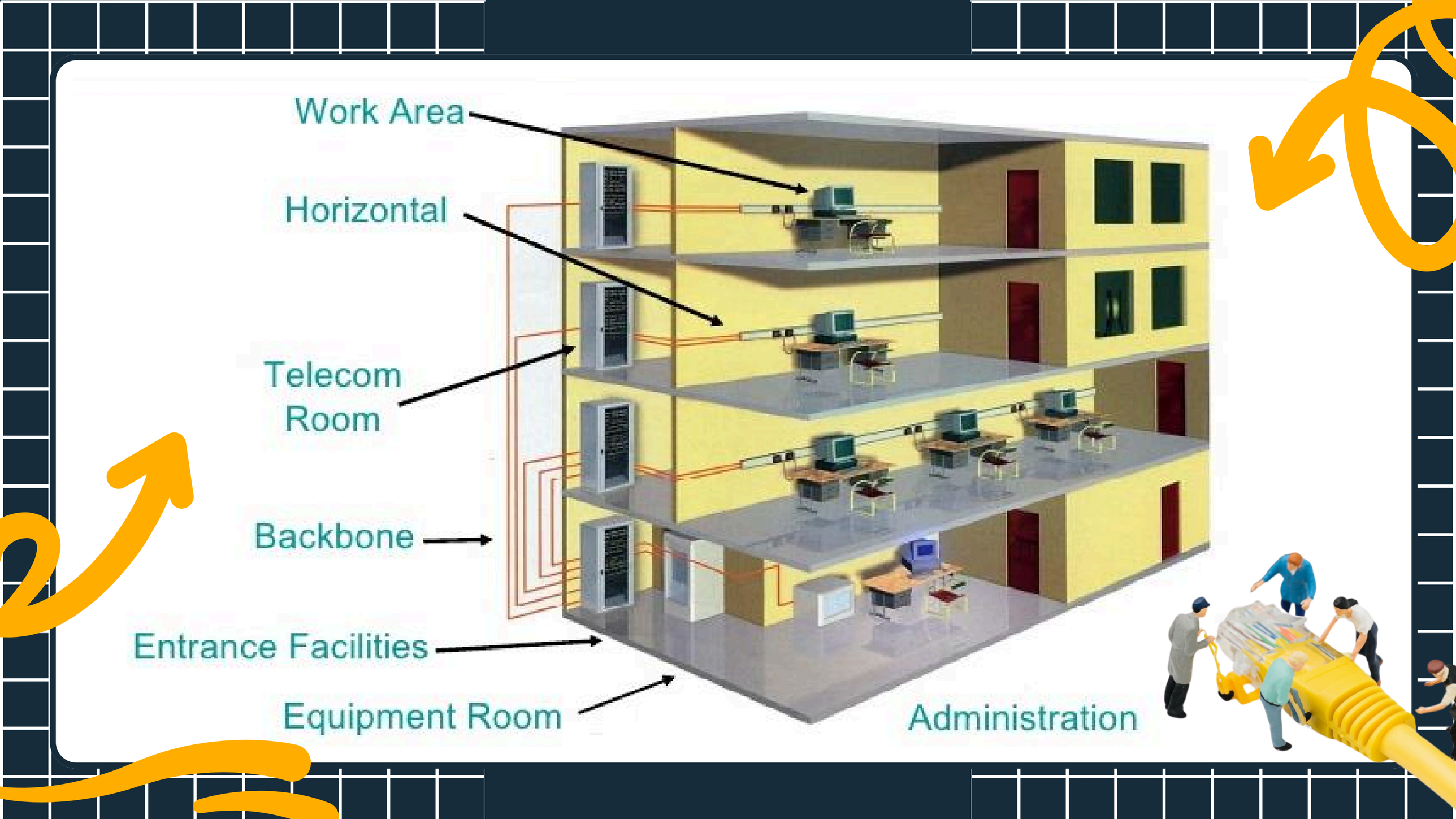
Confusion to entire system

- 1991 -

COMMERCIAL BUILDING TELECOMMUNICATION CABLING STANDARD TIA-EIA-568

In telecommunications, structured cabling is building or campus cabling infrastructure that consists of a number of standardized smaller elements (hence structured) called subsystems.

7 SUBSYSTEM IN PREMISES STRUCTURED


Work Area
Horizontal
Telecom Room
Backbone
Entrance Facilities
Equipment Room
Administration

Entrance Facilities (EF)

Points in building facility where the cabling from the network company connects with cabling at the building premises

Horizontal Cabling (HC)

Connects the telecommunication rooms to communication outlets in the work areas.

Backbone cabling (BC)

Connects the telecommunication rooms, equipment rooms and work area.

Equipment Room (ER)

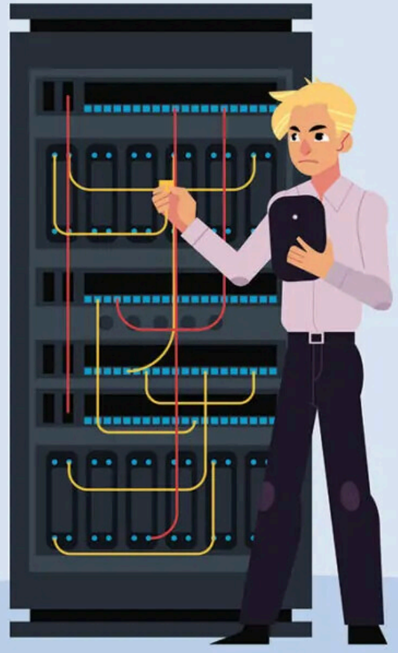
Consist of the wiring and equipment used to make connections to user inside the building.

Work Area (WA)

work area components extend from the telecommunications outlet/connector end of the horizontal cabling system to the WA equipment.

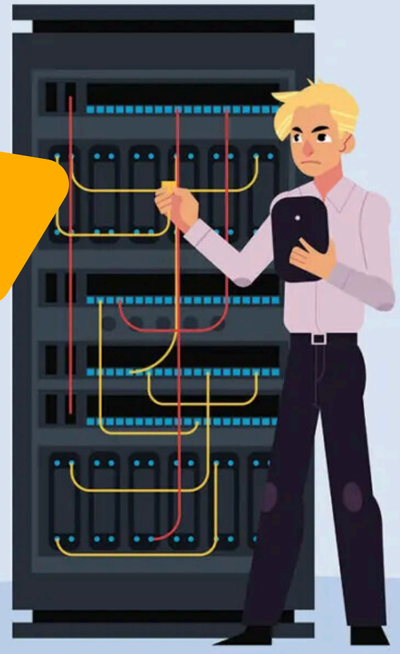
Telecommunications Room

provide and monitor the connections between backbone and horizontal cabling.



Key Features of Structured Cabling:

- Modularity: Allows for easy upgrades and changes.
- Flexibility: Supports voice, data, and video communications.
- Scalability: Can grow with your business needs.
- Diagnostics: Simplifies troubleshooting with standardized connections.



Key Features Benefits of Structured Cabling Structured Cabling:

Structured cabling offers numerous advantages that contribute to better network management and performance. Key benefits include scalability, enhanced network reliability, and cost efficiency, making it a smart choice for businesses

Patch Panels and Outlets

Patch panels help organize and manage connections from various cables. They serve as a bridge between backbone cabling and horizontal cabling. Using patch panels simplifies troubleshooting and makes upgrades easier.

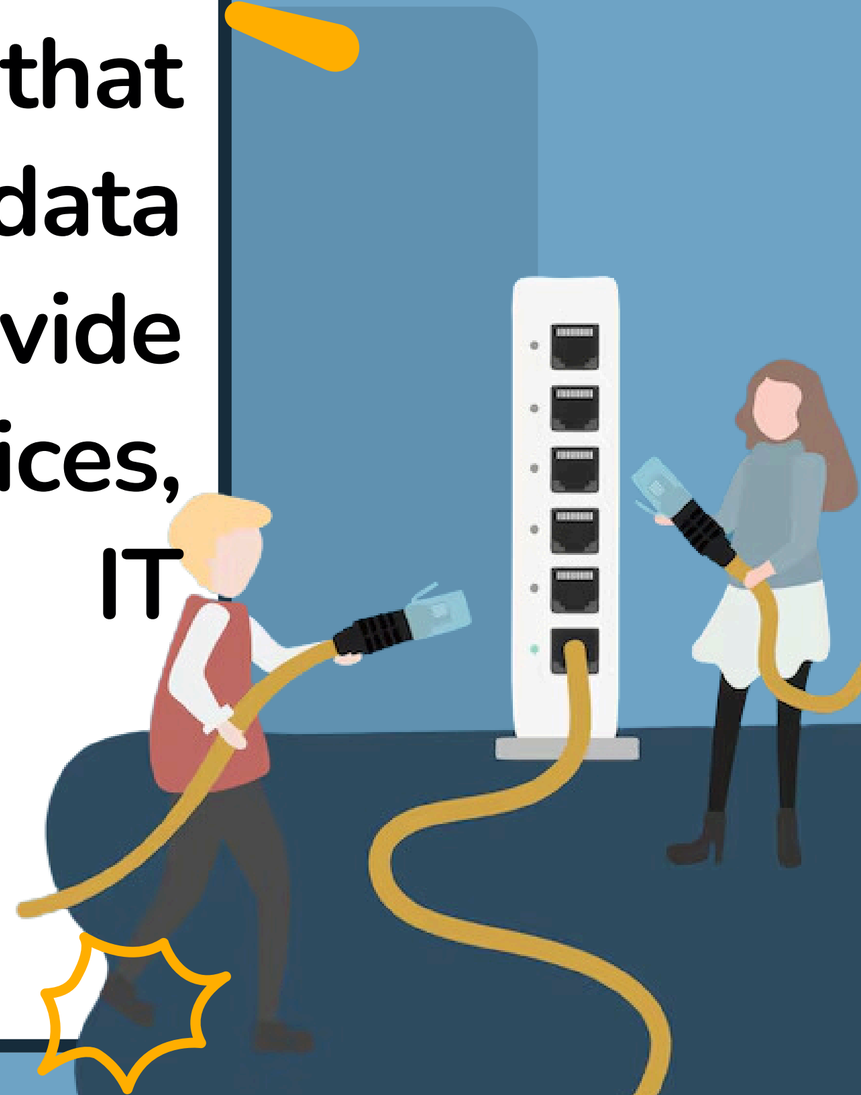

CAT 6A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

Data centers house multiple servers and other equipment, ensuring they operate efficiently. They are designed with redundancy and security measures, such as:

- Cooling Systems: To keep servers at optimal temperatures.
- Power Supply Units: To maintain continuous power, often with backup generators.

Power over Ethernet (PoE)

Servers are powerful computers that store, manage, and distribute data across your network. They provide resources and services to other devices, making them a backbone of IT infrastructure. .



Internet of Things (IoT)

The Internet of Things (IoT) relies heavily on such devices. IoT devices collect and exchange data, enhancing automation and control in various applications. With PoE, you can connect more devices without additional wiring, making your network more efficient and scalable.