

STRUCTURAL CABLING

FINAL EXAM

TEAM GUAPA

ORIGINAL DESIGN

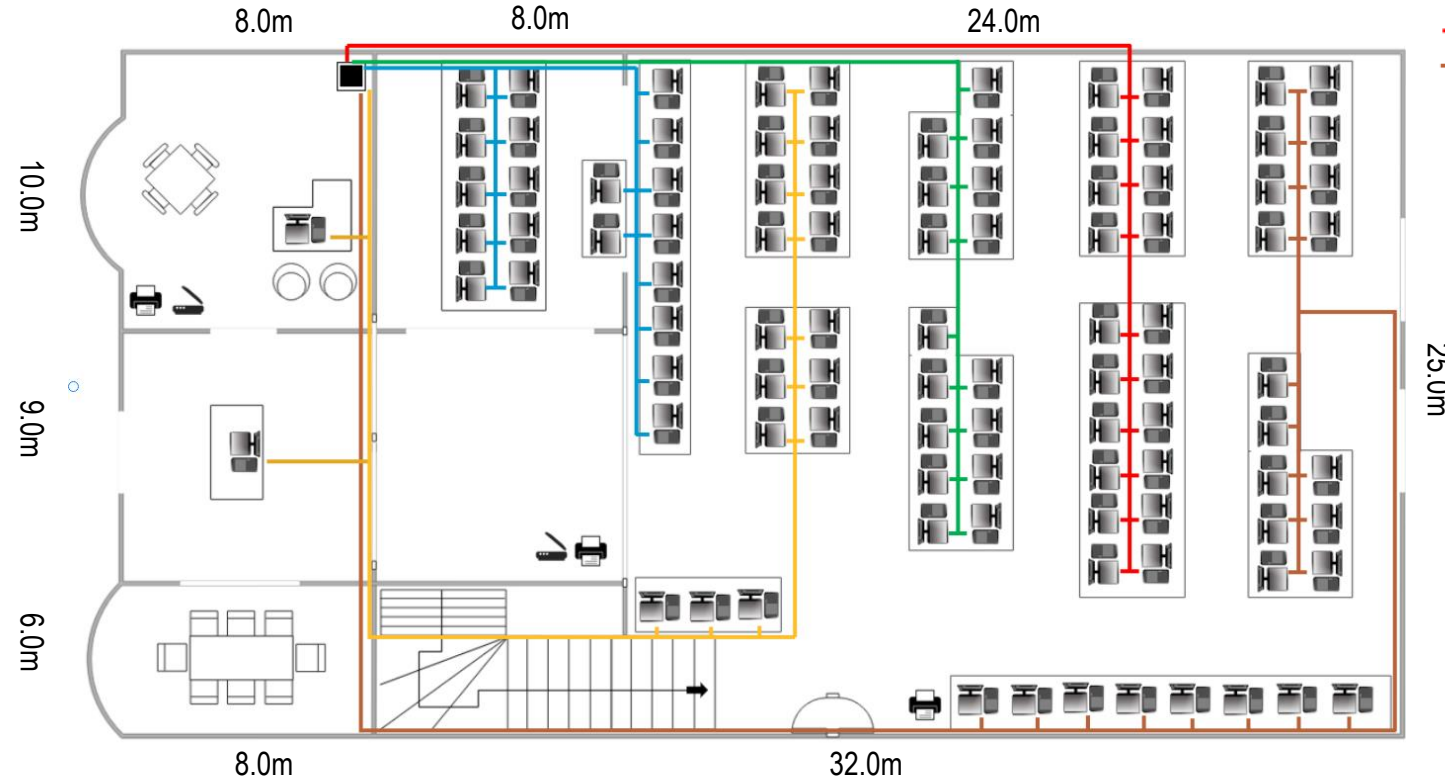
LEGEND:



DATA

FOR UTP TRACKING:

- 16 Nodes
- 19 Nodes
- 20 Nodes
- 20 Nodes
- 24 Nodes



GROUND FLOOR

GAFFUD, ERICA D.
MARUQUIN, IRENE R.
MARAYAG, JOANA MAE M.
PAGULAYAN, JOANNA MAE C.

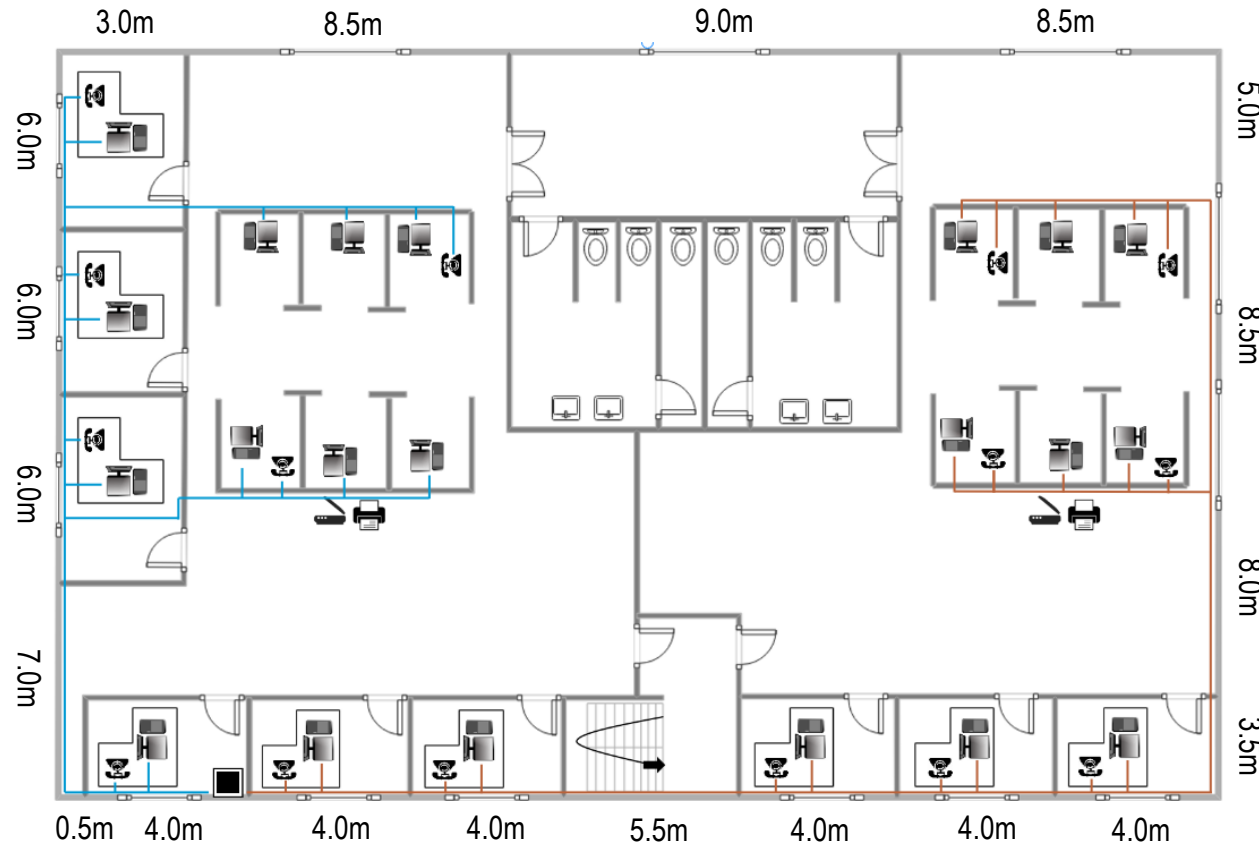
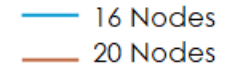
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THIRD YEAR**

**DATA AND DIGITAL
COMMUNICATION**

LEGEND:



FOR UTP TRACKING:



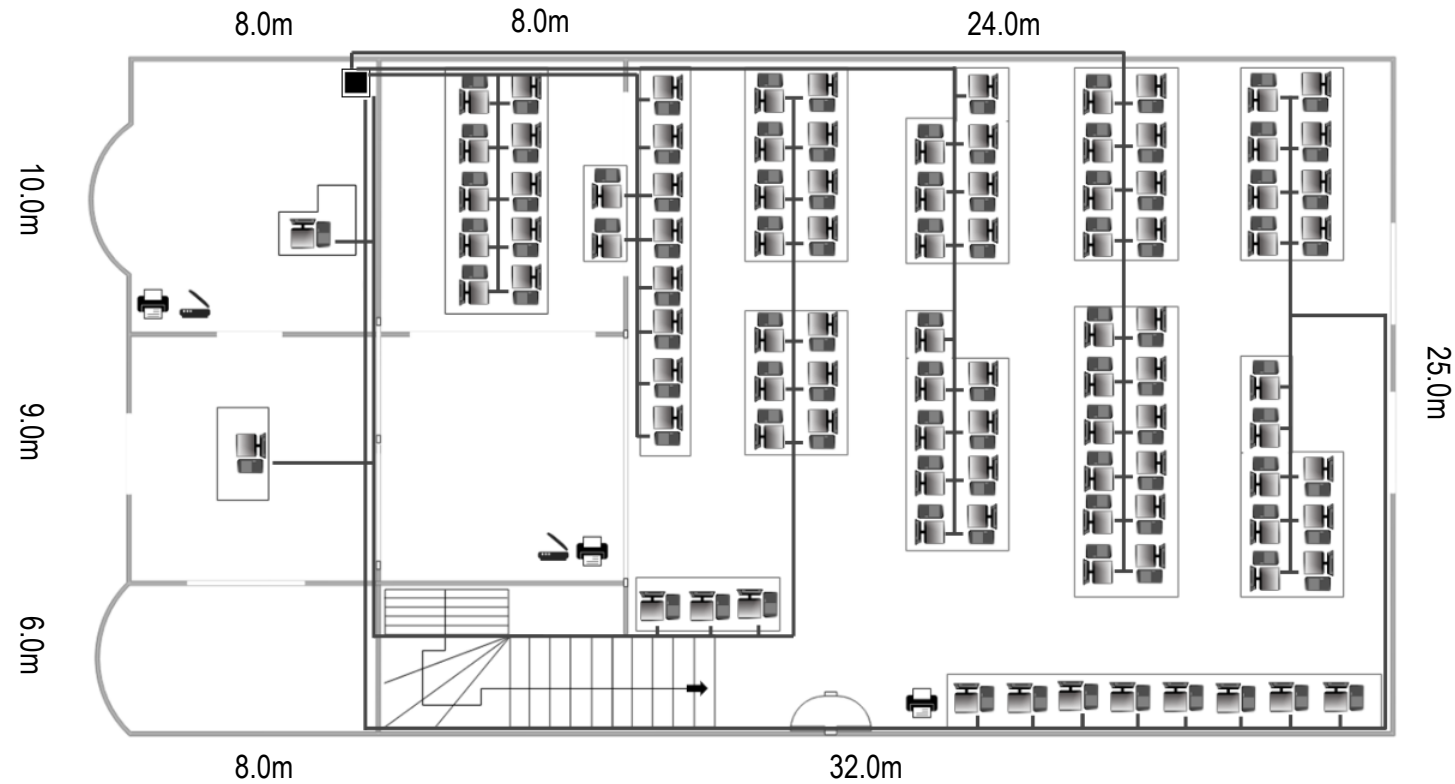
SECOND FLOOR

GAFFUD, ERICA D.
MARUQUIN, IRENE R.
MARAYAG, JOANA MAE M.
PAGULAYAN, JOANNA MAE C.

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COMMUNICATION**

ENHANCE DESIGN

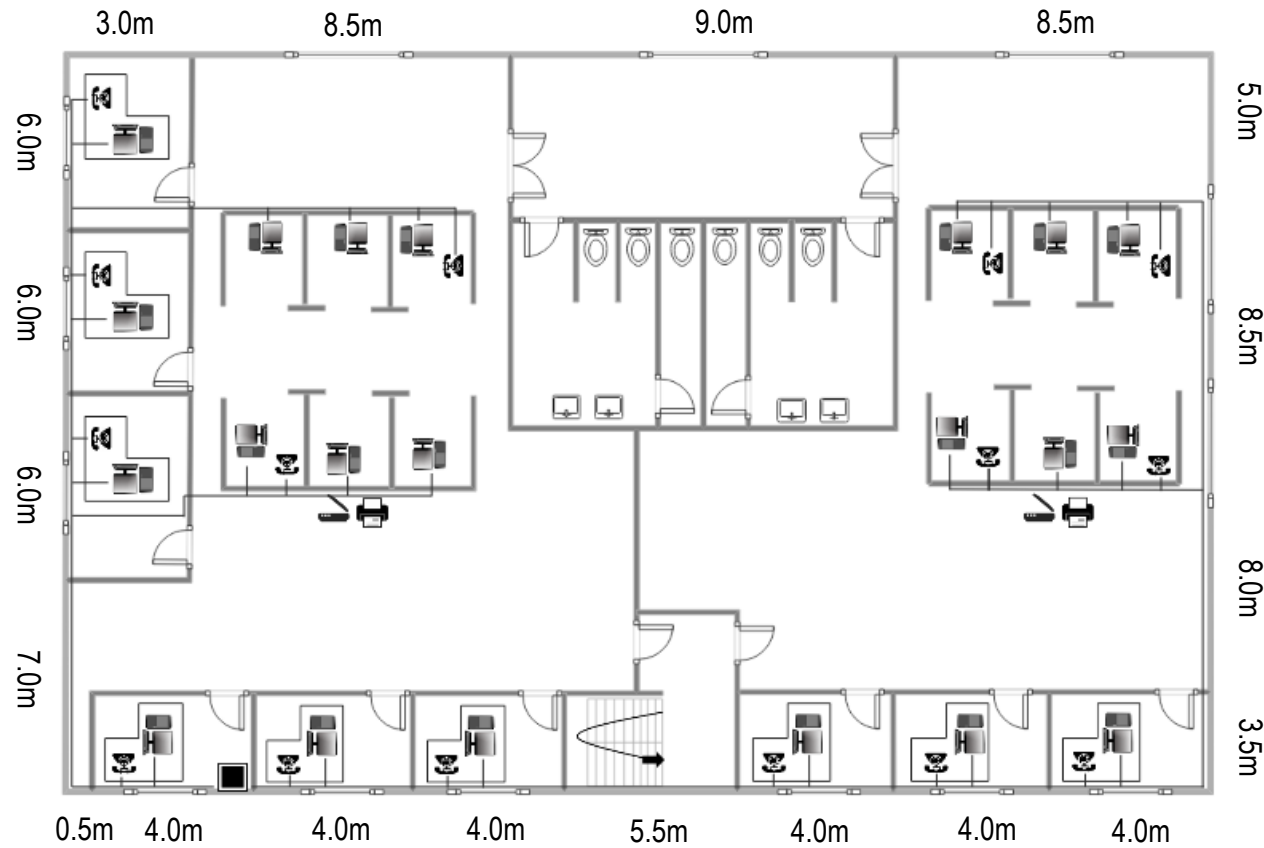


GROUND FLOOR

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SECOND FLOOR

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DATA AND DIGITAL
COMMUNICATION

PRESENT REQUIREMENT

Second Floor		Total
Data		21
Voice		15
		36

Ground Floor		Total
PC		99
Voice		0
		99

SWITCH POSITIONING

SECOND FLOOR



Switch 7



Switch 6



Core Switch



Switch 2



Switch 1



Switch 3

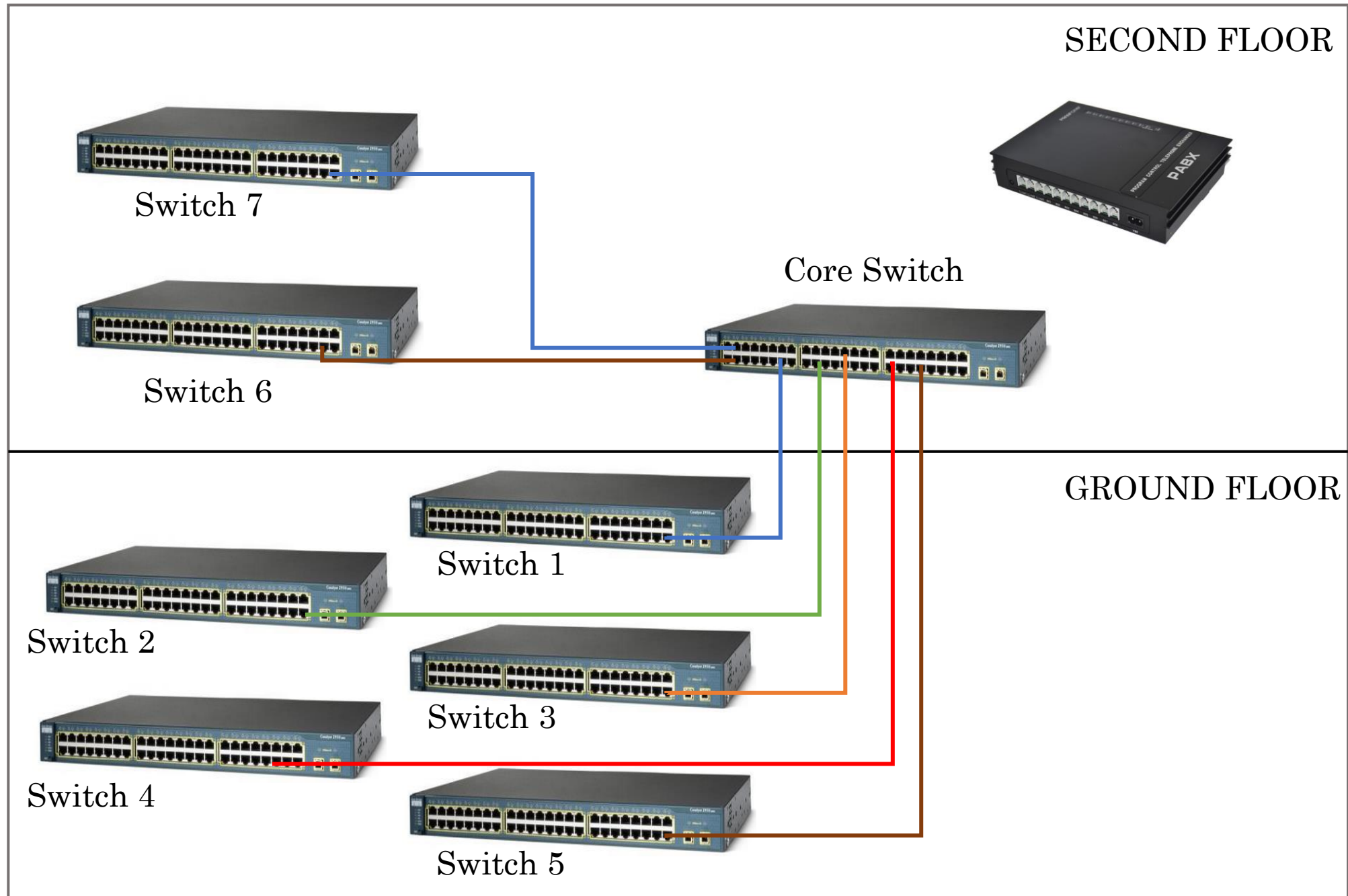


Switch 4



Switch 5

GROUND FLOOR



- Required number of UTP-4 pair boxes

Given:

1 box = 305 meters

Total number of nodes: 135

Required

Total number of UTP-4 pair

Solution:

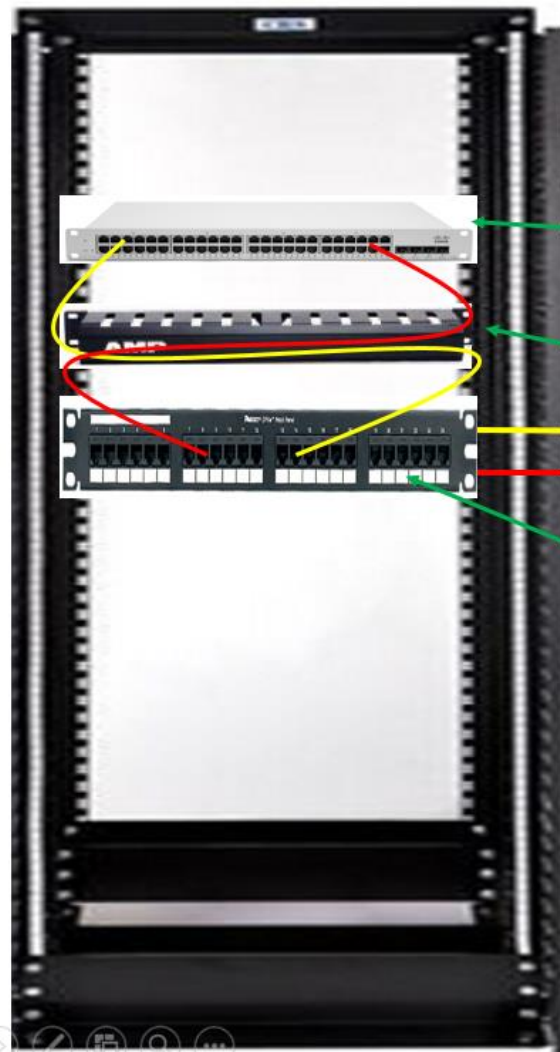
Assumption:

Longest cable run= 87 meters

87 meters x 135 = 11,745 meters

11,745 meters / 305 meters = 38.51 rolls = **39 rolls**

POSITIONING OF COMPONENTS



Open Bay Rack

Switch

Wire manager

Patch Panel

Faceplate



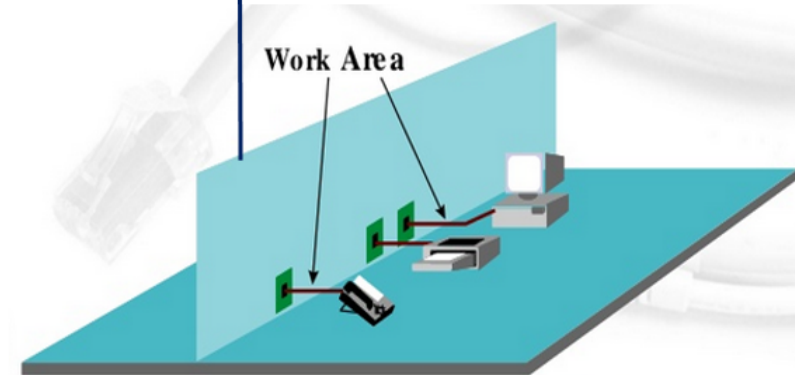
Duplex



Simplex



**Intermediate Distribution
Facility (IDF)**



Work Area

BRAND CONSIDERATION AND SIZES

SWITCH

Sizes:

- Can be a 5-, 8-, 10-, 16-, 24-, 28-, 48- and 52-port configurations

Brand consideration:

Manage

- TP-Link T2600G

The T2600G-28TS from TP-Link is an excellently managed switch, coming in a variety of configurations and offering several ports. This unit has 24 ports, which is usually more than enough for a home or small office deployment, but for the price, it's an affordable, powerful, and capable hub. The Gigabit and four mini-BGIC ports allow for not only computers and laptops to be hooked up, but also printers, IP telephones, other access points, and smaller devices.



SWITCH

Network

➤ TP-Link TL-SG108 (Unmanaged)

When it comes to 8-port network switches for the home or small office network, it's hard to beat the TP-Link TL-SG108. The TL-SG108 also features traffic-prioritizing QoS, full duplex flow control, auto-negotiating ports for choosing transfer speed up to a gigabit, and simple, plug-and-play setup. This best network switch performed at rough parity with other 8-port switches.



PATCH PANEL AND CABLE MANAGER

Patch panel

➤ TRENDnet Patch Panel

This is one of the best patch panels in 2021 because of its high quality and advanced features. The panel can support a connection of 100MHz. At the top of every port, there is a label for easy identification. For SMB and home applications, this is the ideal patch panel on the market.

The product is made to last and you can use CAT6 or CAT5e color for code labeling. Additionally, it has IDC terminal blocks which are compatible with Krone and 110 style connectors. Order this panel today and you will never regret the investment. It will improve and upgrade your home or office network just the way you always wanted.



PATCH PANEL AND CABLE MANAGER

Cable manager

➤ Joto cable management sleeve

These cable-management sleeves from JOTO are made of neoprene, a flexible and stretchy material that can hold from eight to 10 cords. The four-pack of sleeves is simple to use, convenient, and caters to a variety of needs for home or office use.

The sleeves feature zippers that are designed to connect two sleeves together, which widens each sleeve and allows for a larger capacity for thicker or more numerous cables. They are also customizable; you can cut slits directly into the sleeves for cords that are shorter, longer, or need to be separated. Overall, this is an easy-to-use cable-management solution: If you don't need to make modifications, simply place the selected cables inside the sleeves, zip them up, and you're done.



PABX

System

➤ RingCentral Office (An integrated PBX platform)

is a cloud business phone system that provides messaging, video conferencing, and voice calls in one easy-to-use platform for organizations of all shapes, sizes, and industries.

One of the main features offered by RingCentral Office is its business phone system, which lets you ring people with HD audio, use your business phone number across multiple devices, flip live calls between different devices, transfer numbers in the RingCentral app, automatically transcribe voicemails, create local numbers, easily add new users, set up shared lines and extensions, and lots more.



PABX

Phone

➤ NEC PABX | TELEPHONE

NEC has leveraged its adaptive solutions to enable individuals and enterprises across a wide spectrum of industries to achieve more flexible, secure and responsive work environments.

With a suite of highly intuitive desktop telephones, in-building wireless systems and softphones, NEC equips the workplace so that can act quickly whether responding to a call or when reaching out to someone



CABLE

Cable

➤ Mosotech 120 Inch Cable sleeve, flexible cord bundler

If you're looking for a lightweight yet durable solution for containing your cables, these 60-inch cable sleeves from MOSOTECH are ideal for easily adding or removing cables. One sleeve has a diameter of 1.03 inches and can hold eight to 10 cables, depending on the width of each cable. The smaller sleeve is 0.87 inches in diameter and can hold six to eight cables

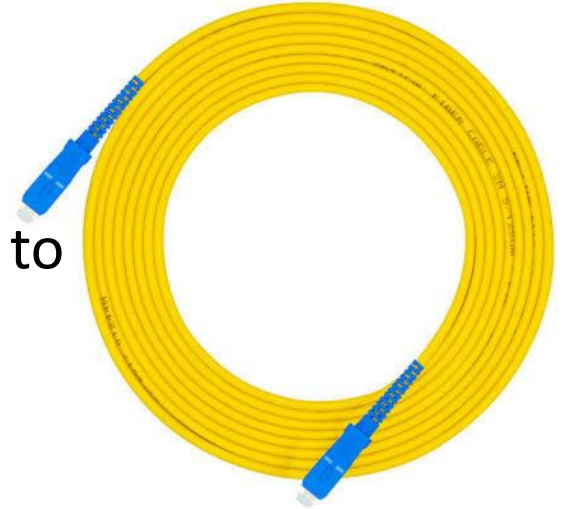
Length: 2 x 60 in



CABLE

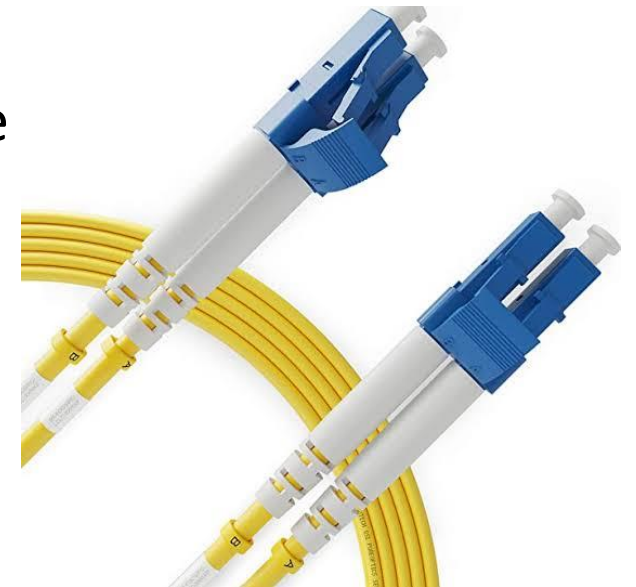
Simplex

15M Singlemode SIMPLEX Fiber Optic Cable (9/125) - SC/APC to SC/APC



Duplex

Dual LC to LC Fiber Patch Cord Jumper Cable SM Duplex Single Mode Optic for Network 15M to 20M



MODULAR CAT. KEYSTONE JACK DATA OUTLET

Rj 45

➤ RJ45 Modular Jack

Electronics catalogs commonly advertise 8P8C modular connectors as RJ45. An installer can wire the jack to any pin-out or use it as part of a generic structured cabling system such as ISO/IEC 15018 or ISO/IEC 11801 using 8P8C patch panels for both phone and data.



GROUNDING AND CONDUITS

Grounding

➤ TCO030

During filling or decanting processes involving potentially explosive liquids or materials, the Eltex Terracompact II automatically identifies faulty, disrupted or defective ground links in the installation. Any disruption in the ground links results in an automatic shutdown of the process. The Terracompact II is a standard enclosure for mounting on DIN 46277 top-hat rails for installation in a control cabinet or a control room.



GROUNDING AND CONDUITS

Conduit

➤ Sealproof 8431 | KIT Conduit Kit

This conduit is a non-metallic material, it isn't susceptible to corrosion. It's designed specifically for rough environments and will protect the electrical wiring inside despite abuse.



IP ADDRESS AND NETWORK

Data Cabinet 1 (Ground Floor)

	SWITCH 1 Network	SWITCH 2 Network	SWITCH 3 Network	SWITCH 4 Network	SWITCH 5 Network
IP Address	192.168.1.0	192.168.2.0	192.168.3.0	192.168.4.0	192.168.5.0
Subnet Mask	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
Default Gateway	192.168.6.1				

IP ADDRESS AND NETWORK

Data Cabinet 2 (Second Floor)

	SWITCH 6 Network	SWITCH 7 Network
IP Address	192.153.10.0	192.153.20.0
Subnet Mask	255.255.255.0	255.255.255.0
Default Gateway	192.153.30.1	

