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Student Name: Ahmed Dashty Yassin

Fourth stage at software engineering department

**My experience and skills that I learned during 3 months of internship
in Lucid Source company**

1-Summarize:

A networking firm called Lucid Source provides a range of security products and services. It was established in 2016 with an emphasis on offering cutting-edge technological solutions. Wavy Avenue Towers, Quatro Towers, Start Towers, Lalav City, Pavilion, Sky View, and Sun Tower are just a few of the notable projects on which the company has worked.

I had the chance to learn about and contribute to numerous elements of Lucid Source's operations while working there as an intern. They were involved in setting up networks, watching CCTV, running network operations centers, and setting up the internet. Configuring gadgets like switches, routers, IP phones, access points, and security cameras gave them hands-on experience.

To enable network traffic routing and device connectivity, switch configuration required configuring variables including VLANs, port settings, and security measures. Routers were set up to create connections between various networks, specify addressing and routing protocols, and put security controls in place. IP phones were set up for network communication, including voice quality of service, assigning IP addresses, and establishing VLAN membership. Wireless communication was established via access points, and HIK Vision cameras were set up for security monitoring.

In order to improve security, spot unwanted behavior, and offer information in case of an event, monitoring tasks entailed actively watching video feeds from CCTV cameras. The HIK Vision system was used to playback, clip, save video, monitor camera status, and simultaneously monitor several cameras.

As a network administrator in the network operation center, I was in charge of keeping an eye on network traffic, hardware, and performance as well as diagnosing network problems and assisting end users.

In order to provide internet connectivity in buildings, the intern also received expertise wiring apartments to the control center, marking wires for organization, and setting up home routers to access the internet.

Overall, the internship at Lucid Source gave me important experience in networking operations, gave me the chance to work with seasoned professionals, learn about the most recent technological advancements, and help me build useful skills for my future job.

2-Introduction:

networking Companies are organization that focuses on creating, installing, managing, and maintaining computer networks. In order to facilitate communication, data exchange, and resource access inside an organization or across different locations, these networks are essential for tying devices, systems, and people together. As a consequence, companies in this sector are constantly searching for fresh talent to assist them in keeping up with the most recent trends and advancements.

Lucid Source was founded in 2016 by a group of young people who had ambitions to serve pure local state-of-the-art services aiming to make a change in the region's technology industry. I got the chance to communicate with team members, learn from seasoned experts, and develop real-world networking and IT skills while working as an intern. I also got to learn about new technology, go to training sessions, and take advantage of chances for professional growth. and I also have practical experience to match my academic knowledge, as well as a strong foundation in networking principles, tools, and practices that will be valuable in my future career in this field.

Lucid Source company offers a wide range of security systems, including but not limited to Fire Alarm systems, CCTV, Intercom solutions, and Sound systems to protect properties include full supply and installation, maintenance and monitoring, and reliable service. Its one of the best companies in Erbil in networking industry and have been working in big projects like

- Wavy avenue Towers
- Quatro Towers
- Start Towers
- Lalav City
- Pavilion
- Sky view
- Sun tower

3-Duties and accomplishments:

I was given a variety of roles as a software engineering intern at Lucid Source to assist me learn and contribute to the business' operations. Here are a few instances:

3.1 Design and Configure new network:

A new network's design and configuration is a complicated process that needs careful planning and close attention to detail. It starts by compiling the organization's requirements, comprehending their objectives, and establishing precise goals. Following the definition of the requirements, the network architecture is chosen while taking size, redundancy, and scalability into account. Then, great consideration goes into IP addressing and subnetting to enable effective network segmentation and communication. It is essential to choose network equipment while taking compatibility, security, and throughput needs into mind. By logically segmenting the network, virtual local area networks (VLANs) improve management and security. Configurations for routing and switching are made to provide communication between various networks and guarantee high availability. The network infrastructure and data are protected by strong security mechanisms, such as firewalls, access control regulations, and encryption methods. Wireless access points are set up with the correct security standards and in the best locations if wireless connectivity is needed. In order to track performance, solve problems, and guarantee smooth network operation, network monitoring and management tools are finally implemented. An effective and secure network infrastructure must be maintained at all times, and frequent updates and documentation are essential.

3.2CCTV and Monitoring:

I was tasked to operate and work in the act of actively studying and evaluating the video feeds from CCTV cameras is referred to as monitoring in the context of CCTV. It entails keeping a close check on recorded or live video footage to spot any shady or unauthorized activity. Monitoring is meant to improve security, stop illegal activity, and give information in the event of an incident.

3.3 Network operation center

I worked in Network operation center as a network administrator and my job was to make sure the network components are working properly and error free and Continuous monitoring of network performance, availability, and security. This involves tracking network devices, servers, links, and services to identify any anomalies or issues.

3.4 Internet maintain and establishment:

I worked with lucids internet team members a well and high organized team of internet they were professionals at their work and our job was to establish internet for apartments and maintain the errors and also making sure they perform very well.

Overall, the variety of jobs and responsibilities I was given during my internship at Lucid Source enabled me to get important expertise in networking operations. I had the chance to collaborate with seasoned professionals, learn about the most recent technological advancements and business trends, and hone practical skills that would be useful in my future job.

4-Skills learned:

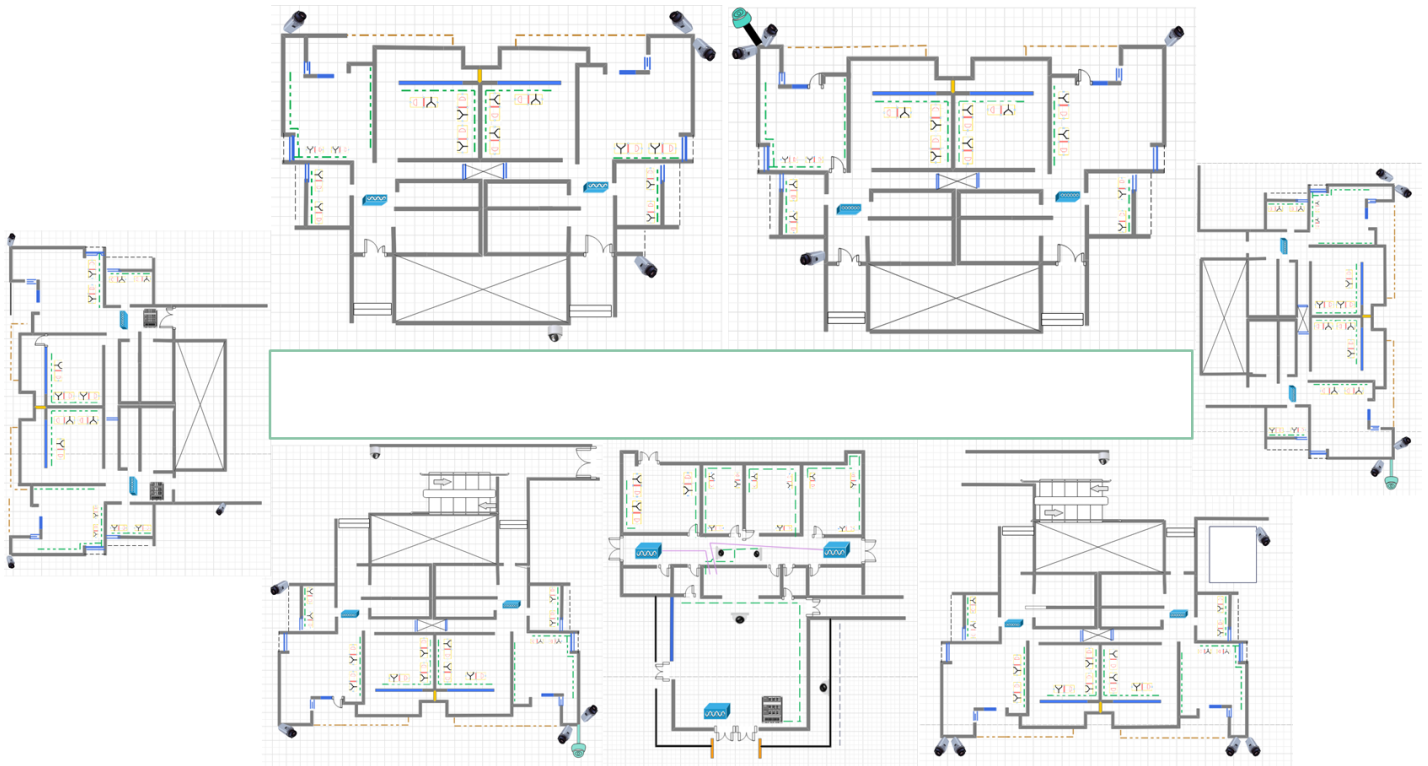
I visited every nodes of lucid companies that have been working on and I lerned a lot of skills and I will talk about them:

4.1 Designing networks

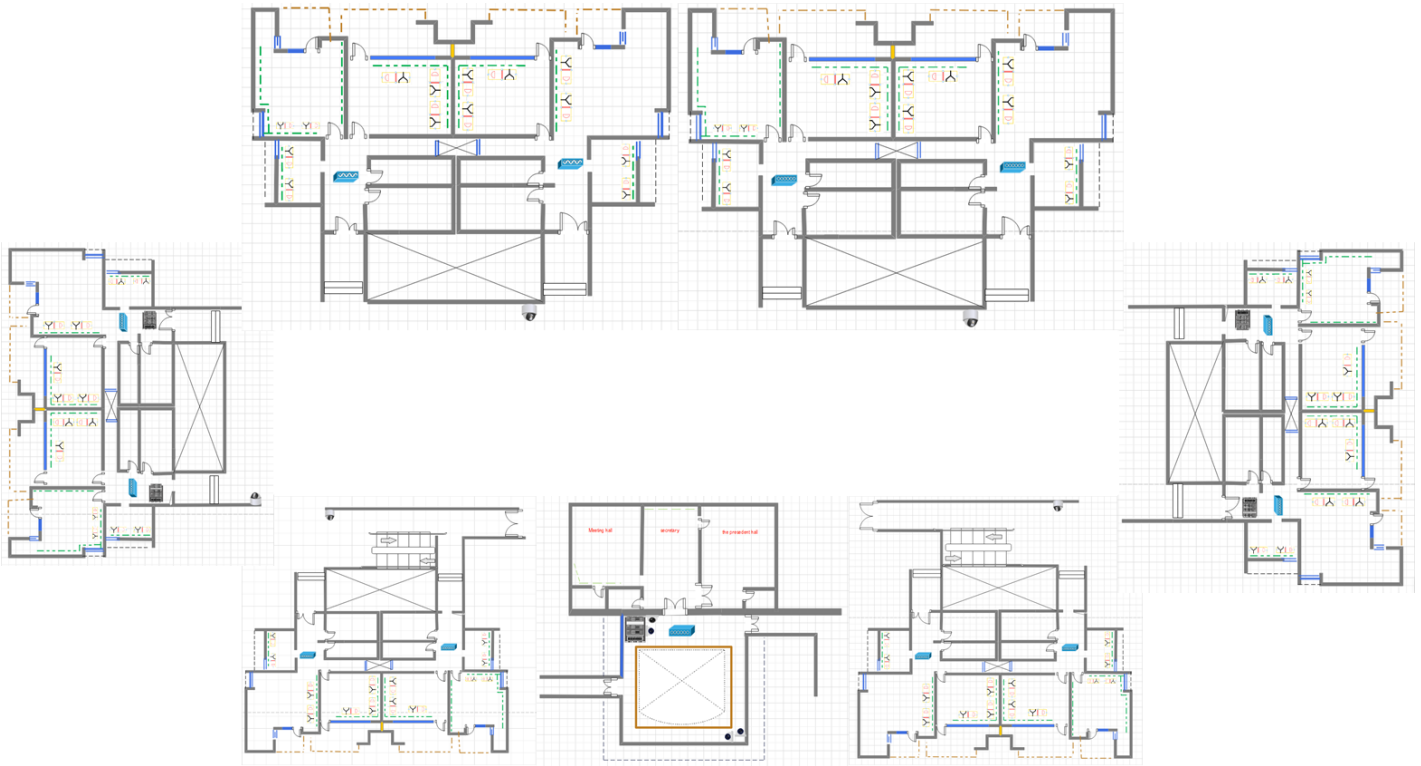
While I was in lucid I created a project. and the project was about two of the buildings that lucid has created the network for them they were the new building of sallahaddin Presidency and cultural center. The process was by these steps:

- 1- **Gather Requirements:** It's critical to have a thorough understanding of the demands and objectives of the organization throughout the requirements gathering phase. Discussions with department officials, IT personnel, and stakeholders are necessary for this. The quantity of users, the different kinds of devices (computers, phones, printers, etc.), the anticipated network traffic volume (data transfer, video streaming, etc.), the security requirements (data protection, access controls), and the future scalability plans (anticipated growth, new applications) are just a few examples of the variables to consider. The future design choices will be influenced by these needs. For the project I was taking notes and analyzing the requirements for the network and discussing with my supervisor for clarifying the requirements.

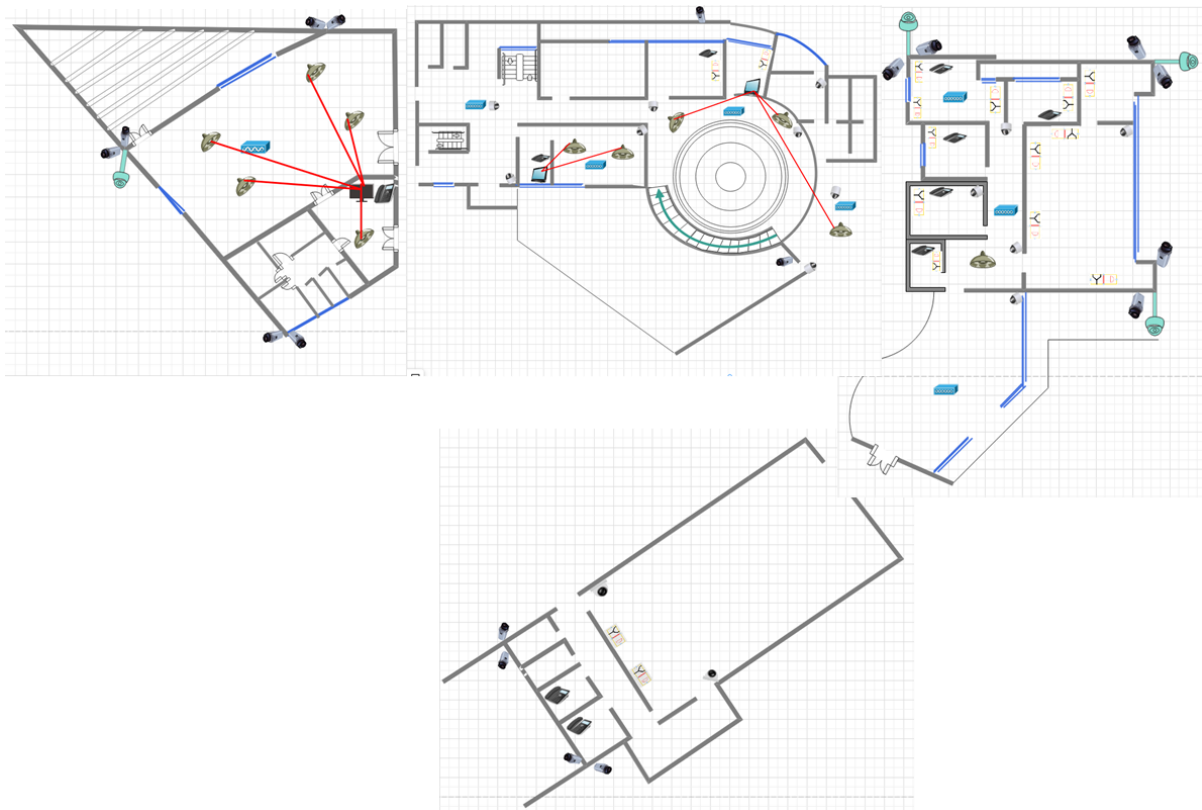
This is the ground floor of sallahaddin Presidency



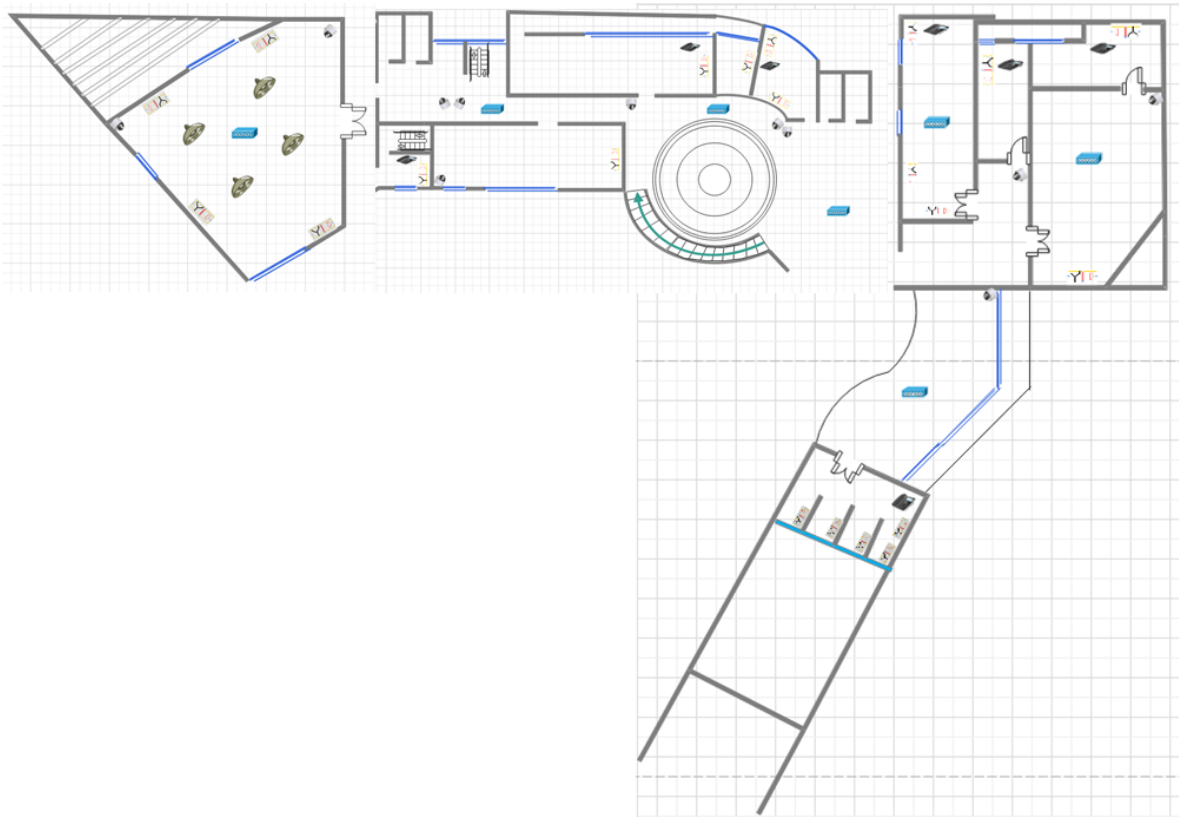
Also this is the first floor:



Also for the cultural center I have designed the network this is the ground floor:



And this is the first floor:



The design contains routers, two types of switches (Distributive and multilayer), Access Points, Security cameras (indoor and PTZ), and nodes that contain Ethernet cables that can be connected to pc s and ip phones, Sound Systems.

- 3- **Network Equipment Choice:** Making the right network equipment choices is essential to creating a dependable and expandable network. Network speed needs, the number of ports required, compatibility with existing infrastructure, support for future technologies (like Power over Ethernet), and security features (like intrusion prevention systems and VPN capabilities) are a few examples of the variables to consider. Select reliable suppliers, and if necessary, seek advice from experts in network equipment. For the selection I chose the devices by searching and gaining information on them for example I chose **2811 model** for the routers because of the **(telephone service)** it's the only router that has this service which is for configuring ip phones. And I also I used the multilayer switch as core switch because of the high speed of performance and so on for other devices.

Network configuration is the process of establishing connectivity and enabling effective communication within a computer network by configuring network devices, protocols, and services. It entails specifying a number of parameters and settings that control how network devices and services behave and function. The configuration that I made was by using **Cisco Packet Tracer Tool**.

- 4- **IP Addressing and Subnetting:** Setting up an IP addressing scheme entails giving each device a different IP address and segmenting the network into subnets. This procedure guarantees effective communication and aids in network segmentation for management and security reasons. To maximize the use of IP addresses, choose between IPv4 and IPv6 addressing, assign IP address ranges to various departments or network segments, and use subnetting. For convenience of use in troubleshooting and future reference, record the IP addressing scheme. For the IP Addressing I configured the network by separate them into two address 10.1.0.0 for left side and 10.2.0.0 for right side. This will be better for maintaining and error detection.

- 5- **VLAN Design:** Even within a shared physical infrastructure, Virtual Local Area Networks (VLANs) enable the logical segmentation of a network. Benefits of VLANs include increased security, easier network administration, and greater bandwidth consumption. Based on departmental requirements, security concerns, and traffic patterns, plan the VLAN structure. If necessary, configure VLAN trunks between switches and assign the proper VLAN tags to the switch ports. For the vlans I designed them by devices and types of connection for example I created 5 vlans on each switch vlan (10, 20, 30, 31, 40). Each vlan is designed for specific task vlan 10 Is for cameras, vlan 20 is for WI-FI, vlan 30 is for pc and data , vlan 31 is for ip phones , vlan 40 is for transition.

```
SWCORE1#sh vlan
```

VLAN	Name	Status	Ports
1	default	active	
10	camera	active	Fa0/18, Fa0/19, Fa0/20, Fa0/21 Fa0/22, Fa0/23, Fa0/24
20	wifi	active	Fa0/15, Fa0/16, Fa0/17
30	lan	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14
31	voice	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14
40	switch	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

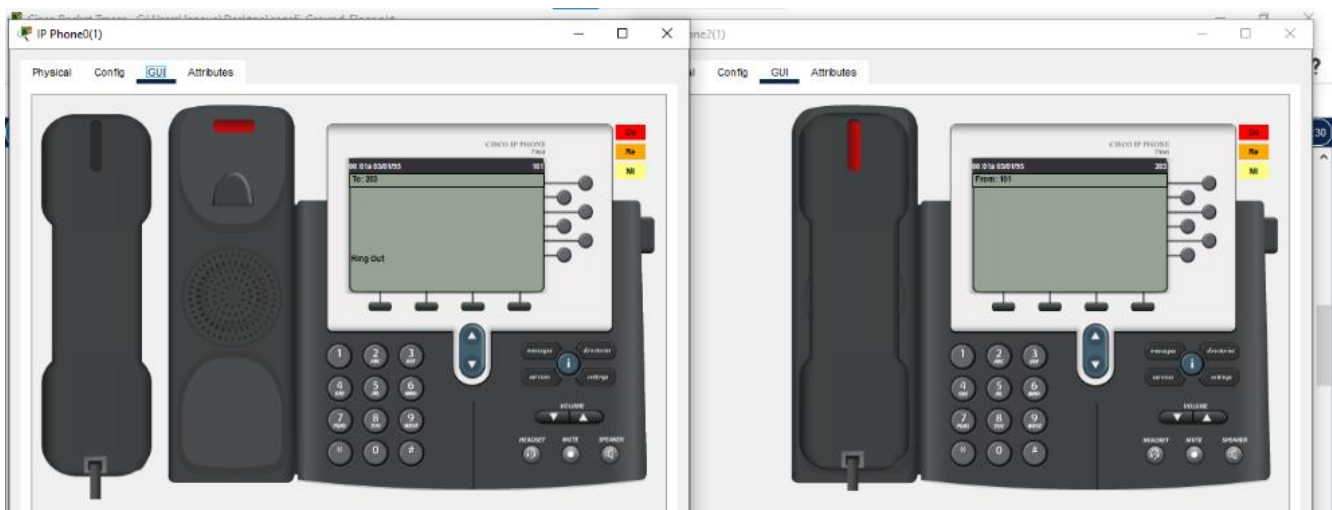
- 6- **Routing and switching configuration:** Set up the routers and switches in accordance with the needs and network topology. This includes setting up features like Quality of Service (QoS) for prioritizing traffic, implementing VLANs and trunks, configuring routing protocols (such as OSPF or BGP) for connecting various networks, and setting up redundancy protocols like Virtual Router Redundancy Protocol (VRRP) or Hot Standby Router Protocol (HSRP) for high availability. Each router and switch is configured very well and have several protocols on them for example I configured OSPF on the routers to route between the two networks and also I have created telnet on the routers so the pcs can remotely connect and configure the router I also created ACL s on both to have an secure and organized networks for example not every pc can do telnet use http protocol. These are the configurations of ACL s and OSPF:

```
Router#sh ip route ospf
      10.0.0.0/8 is variably subnetted, 12 subnets, 2 masks
O       10.1.0.0 [110/65] via 13.0.0.1, 00:07:00, Serial0/3/0
O       10.1.10.0 [110/65] via 13.0.0.1, 00:07:00, Serial0/3/0
O       10.1.30.0 [110/65] via 13.0.0.1, 00:07:00, Serial0/3/0
O       10.1.31.0 [110/65] via 13.0.0.1, 00:07:00, Serial0/3/0
O      11.0.0.0 [110/128] via 12.0.0.2, 00:07:00, Serial0/2/0
          [110/128] via 13.0.0.1, 00:07:00, Serial0/3/0
```

```
Router#sh access-lists
Standard IP access list 10
  10 permit 0.0.0.0 255.255.0.0
  20 permit host 10.2.30.4
  30 deny 10.2.30.0 0.0.0.255 (29 match(es))
```

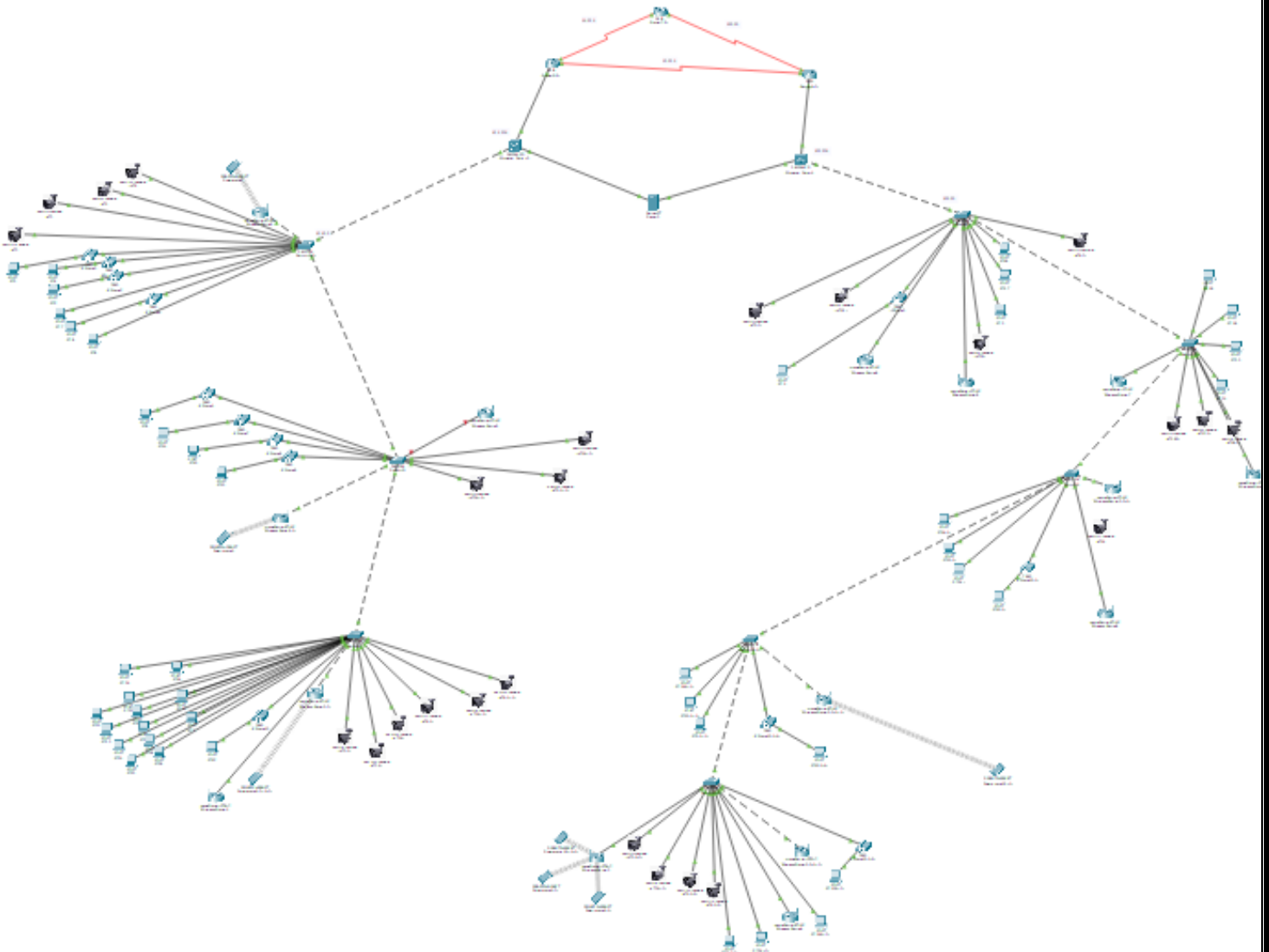
```
SWCORE1#sh access-lists
Extended IP access list 101
  10 permit tcp host 10.2.30.4 0.0.0.0 10.1.30.2 eq www
  20 deny tcp 10.2.30.0 0.0.0.255 host 10.1.30.2 eq www
  30 permit tcp host 10.2.30.4 0.0.0.0 10.2.30.1 eq telnet
  40 deny tcp 10.2.30.0 0.0.0.255 host 10.2.30.1 eq telnet
```

7- **Ip phones and pc configurations** Careful consideration must be paid to IP phone and PC configurations in a network project to guarantee proper functionality and interoperability. VoIP (Voice over Internet Protocol) phones, usually referred to as IP phones, need particular configurations in order to establish communication over the network. This include giving the IP phones their respective IP addresses, subnet masks, default gateways, and DNS settings. In addition, Quality of Service (QoS) settings can be adjusted to give audio traffic priority and guarantee crystal-clear, uninterrupted voice connections. Each computer must be correctly connected to the network and set up to interact successfully in terms of PC setups. This include giving the PCs their respective IP addresses, subnet masks, default gateways, and DNS settings. Depending on the network infrastructure, network communication may be created through Ethernet cables or wireless connections. Each PC should also have security tools like firewalls and antivirus software installed and set up in order to guard against potential threats. For the pc s and ip phones I have created dhcp pools for them to dynamically giving them ip address. For pc s I have created the pool on my servers and giving them via vlan 30. And for ip phones I have created DHCP pool on the router and the addressing will be via vlan 31. I also created dial peer protocol for the ip phones in both networks by this protocol both networks can communicate. In dial peer I also separated the numbers on both networks for example in network 10.1.31.0 the phone numbers will start from 100 and in network 10.2.31.0 the numbers will start from 200. That's how the phones work it will show the phone number that is calling



8- **Testing phase:** The successful construction and upkeep of a network infrastructure depends on testing and documentation. It is essential to carry out rigorous testing after the network's architecture and configurations have been put in place to make sure the network works as planned.

The network must have its many components analyzed throughout the testing process. As part of this, devices must be tested for connectivity, network protocols and services must be operational, data transmission speeds must be evaluated, and any potential bottlenecks or performance problems must be looked for. To validate the network's performance under various scenarios, testing may involve sending test packets across the network, evaluating response times, running stress tests, and running realistic simulations. And that's the whole network in packet tracer:



During my time I also worked in all buildings and nodes that lucid has worked for them and I also worked on configuring devices for them and these are the devices:

Switches:

One of the most important parts of setting up a computer network is configuring switches and routers. A local area network (LAN) uses switches to route network traffic and connect devices together. Administrators specify variables including VLANs, port settings, and security measures while configuring switches. Network segmentation is made possible by VLANs, which enhances network performance and security by separating traffic. A port's speed and duplex settings enable the best connectivity and data transfer speeds. By restricting access to switch ports and screening network traffic, security features like port security and access control lists (ACLs) contribute to the network's security. Administrators can build a reliable and effective network architecture specific to the needs of their firm by carefully configuring switches.



Routers:

On the other hand, routers are in charge of establishing connections between various networks and managing data traffic between them. Network addressing, routing protocols, and access control policies are all defined during router configuration. On router interfaces, administrators configure IP addresses and subnet masks to allow communication between various networks. It is configured for routing protocols like OSPF or BGP to choose the most efficient routes for data forwarding between networks. Access control lists (ACLs) are used to manage traffic flow by admitting or rejecting particular packets in accordance with predefined rules. In order to safeguard the network from illegal access and potential dangers, administrators also put up security tools like firewalls and virtual private network (VPN) settings. Administrators maintain effective and secure network connectivity by correctly configuring routers.



In lucid I used PUTTY for configuring switches and routers

PuTTY is a versatile and widely used tool for remotely accessing and managing systems using various protocols, with SSH being the most common. System administrators, network engineers, and anybody else who needs to securely connect to remote systems are choosing it because of its simplicity, dependability, and wide compatibility.

IP Phones:

Setting up the required network and telephony configurations for Internet Protocol (IP) network communication is part of configuring IP phones. The following are the main steps in configuring IP phones:

1. Make that the IP phone is linked to the network via an Ethernet wire or a Wi-Fi connection. Check to make sure the network connection is reliable and has access to the required services and resources.
2. IP address assignment: In order to communicate across the network, IP phones need an IP address. DHCP (Dynamic Host Configuration Protocol) or manually configuring the IP address can be used to allocate this statically or dynamically.
3. Configure the IP phone to be a member of the appropriate VLAN if your network uses virtual LANs (VLANs). Voice quality of service is maintained for voice communications by using VLANs to separate voice and data traffic.
4. Test and troubleshoot: Run tests on the IP phones after configuration to make sure connectivity and functionality are working properly. Check that voice calls, phone transfers, voicemail, and other functions operate as intended by testing them. Investigate any potential difficulties, such as network connectivity issues or incorrect settings.

In lucid we used PBX for DHCP.

Private Branch Exchange is a PBX. It is a telephone system that is employed within a company or organization to facilitate both internal and external telephone connections. A PBX system offers a number of functions like call routing, call transferring, voicemail, and conference calling while enabling users to share a specific number of external phone lines. It serves as a central switching system,

regulating the flow of incoming and outgoing calls and routing calls to the proper extensions within the company. PBX systems come in two different forms: software-based IP-PBX, which employs internet protocol (IP) to transfer voice conversations via data networks, or hardware-based PBX systems. PBX systems enable seamless internal and external telephone communication, which increases communication productivity and efficiency inside a business.

Access point:

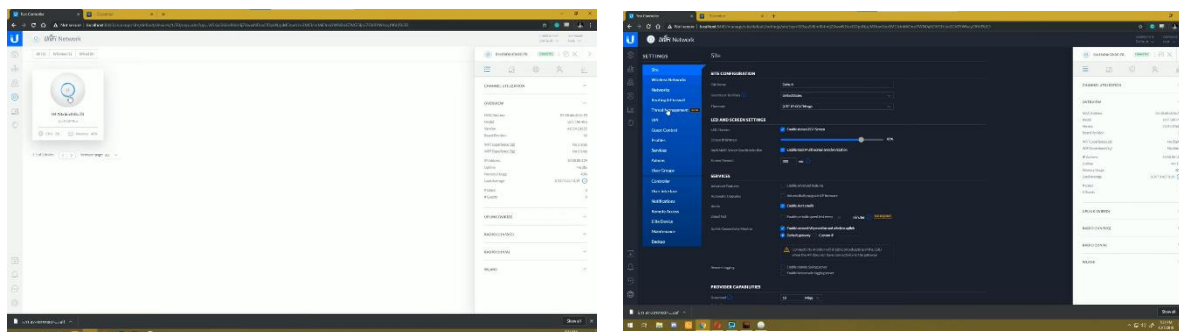
An Access Point (AP) is a networking device that facilitates the connection of wireless devices to a wired network. It acts as a central hub for wireless communication, linking wireless devices like laptops, smartphones, and tablets to the underlying wired network infrastructure. In lucid the access points are from Unify company.

The primary purpose of an access point is to establish a wireless local area network (WLAN) by transmitting and receiving wireless signals. By converting data between wired Ethernet connections and radio signals, the access point enables wireless connectivity. Access points are designed to operate on specific frequencies and support various wireless standards, including Wi-Fi 4 (802.11n), Wi-Fi 5 (802.11ac), and Wi-Fi 6 (802.11ax), each offering distinct speeds and features.

Access points are commonly deployed in homes, offices, public spaces, and other environments where wireless connectivity is essential, there most of the time we deployed it in apartments. They are typically connected to a wired network and can be managed either centrally or individually. In addition to providing wireless connectivity, access points often incorporate security measures, support multiple SSIDs (Service Set Identifiers) for network segregation, facilitate VLAN (Virtual LAN) functionality, and offer guest network capabilities.

In Lucid we used an Application named Unifi Networks it was specified for Unifi Devices we used it only for Access Points. It has GUI and we configured it by GUI not commands like setting the ip range and its frequencies and name here is an example of the application:





A security camera, sometimes referred to as a surveillance camera or CCTV (Closed-Circuit Television) camera, is a tool used to observe and document activity in a particular area for the purposes of security and surveillance. These cameras are frequently used to improve security measures and discourage potential threats in a variety of contexts, including residences, businesses, public spaces, and organizations.

Security cameras are made to record video of the environment around them and send or store it for subsequent review or analysis. They can be directly connected to a computer or server for real-time monitoring and recording, or to a recording device, such as a digital video recorder (DVR) or network video recorder (NVR).

Depending on the specific needs and requirements, security cameras come in different types and offer various features. Some common types include:

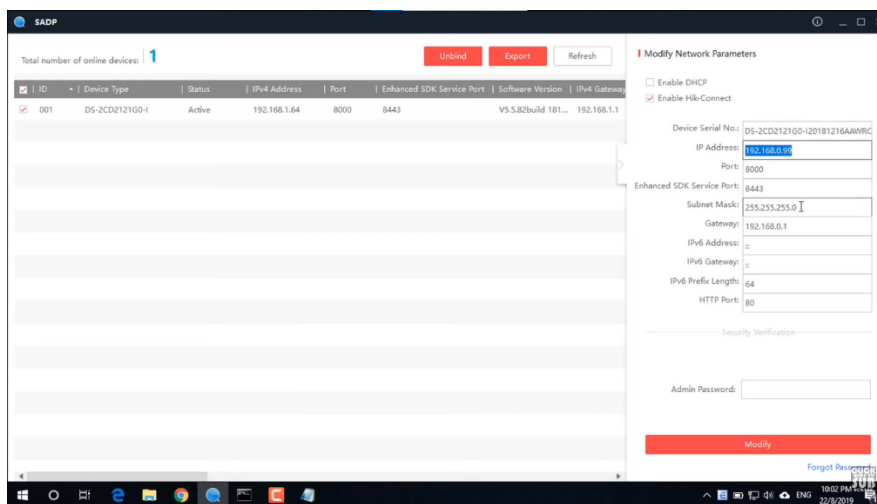
1. **Dome cameras:** These dome-shaped cameras are frequently employed inside. They have a large field of view and are covert.
2. **Bullet cameras** are cylindrical surveillance devices that are frequently utilized outside. They are prominent and serve as a deterrent because of their presence.
3. **Motorized cameras** that can pan, tilt, and zoom to give flexible coverage of a wide area are known as PTZ (Pan-Tilt-Zoom) cameras. They can be directed to focus on particular areas of interest remotely.
4. A specialized security camera called an **LPR** (License Plate Recognition) camera is made to collect and scan license plates on moving cars. The license plate letters are automatically detected, recognized, and translated using cutting-edge optical character recognition (OCR) technology, which also extracts pertinent information including alphanumeric characters, colors, and symbols.

So lucid uses HIK Visions cameras for all type of security cameras and for configuring these cameras HIK Vision provides a system. In the system you will be able to configure the cameras and give them range of ips and maintain them also have an eye of the live status of cameras.

The system is very easy to use for a new camera to configure

- connect the camera to the pc that have the system.
- Give the camera its ip address.
- The default getaway and subnet of the network.
- Also, the port that you use to transmit.

And that's it the camera is installed.



4.2 CCTV and Monitoring:

Another task that I had in lucid was monitoring CCTV for a period of time

CCTV stands for closed-circuit television and describes a network of monitors and video cameras used for monitoring and surveillance. CCTV cameras record video of particular locations or points of interest, which is then sent to monitors or recording equipment for immediate viewing or later review. CCTV systems are commonly utilized to increase security and monitor activity in a variety of situations, including homes, companies, public spaces, and organizations.

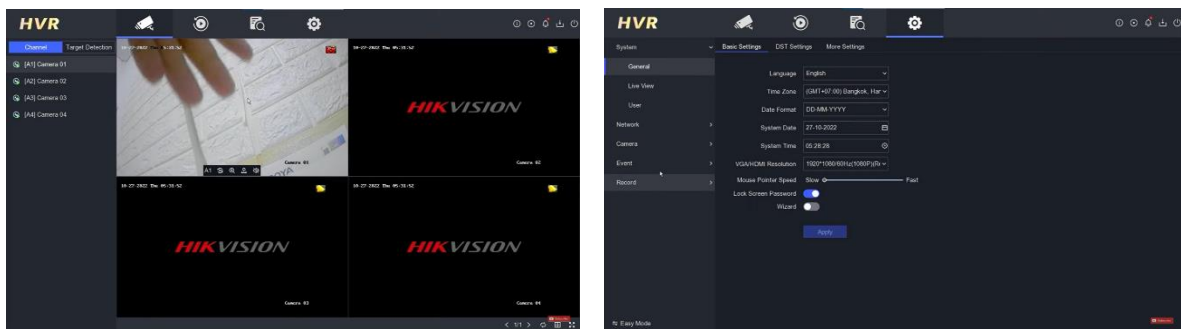
I have worked in multiple towers as a Surveillance Operator like:

- 1- Star Towers
- 2- MRF Quatro
- 3- Wavy Avenue

For the monitoring we also used HIK Vision System which have several features like:

- Opening multiple cameras live to keep an eye on them in one tab.
- Play backing multiple cameras.
- Clipping and saving live footage.
- Back upping and saving the footage over 30 days.
- A tab that contain all camera statuses to know which camera is not connected or have an error.

I also worked on several cases that needed live monitoring and play backing and clipping the footage for safety reasons.



4.3 Network Operation Center:

In my intern I also was network administrator in star towers network operation center.

Network administrators and technicians can monitor, administer, and maintain a company's network infrastructure in a Network Operations Center (NOC), which is a centralized location. A NOC's main duties include ensuring the network's efficient operation and performance, quickly identifying and fixing any problems with the network, and offering help to end users.

In a NOC, network administrators and technicians track network performance, keep an eye on network hardware including routers, switches, and servers, and examine network traffic using a variety of tools and monitoring systems. They closely monitor the state of the network, bandwidth usage, security risks, and any potential disruptions or anomalies.

A NOC manages incident management and troubleshooting in addition to monitoring. When network problems occur, NOC staff members work to isolate the

underlying cause, start the appropriate corrective steps, and inform stakeholders of updates and remedies. To solve complicated problems and make sure the network runs smoothly, they might work along with other teams like network engineers, security teams, and service providers.

In there I was responsible for several tasks which was:

- ensure the smooth operation and performance of the network
- promptly detect and resolve any network issues
- provide support to end-users
- keep a close eye on network health, bandwidth, Security.
- Adding and rearranging internet users.

4.4 Internet Maintain and Establishment:

Another services that lucid provides was internet services and its an important thing because its important and its necessary so I worked with the internet team for a period of time and I learned and gained lot of information and skills.

Establishing a dependable and effective network infrastructure inside the building is a necessary step in providing internet connectivity for buildings so that residents can access the internet.

In the buildings and towers the have control room that has multiple racks which contain switches and routers first they need to connect and configure the switches and routers. Then they have cabling phase which they have to connect every apartment at least with one node to the control room and this contain node establishment and also cable labeling.

Labeling is very important because which labeling the cables the operation will be much faster and more organized for example if we have a building witch 4 floors and 40 apartments so we have at least 40 cables and if we don't label these cables then the operation takes more time and it will be a mess. So, the labeling will be like this for example the cable is form floor 2 apartment 3 the labels on the Cabell will be (F2A3). Also the cables that are used to connect apartment nodes to control room is fiber cables.

Another phase is connecting home router to internet to connect the home routers in every apartment there was a node that has a adapter that convert fiber to RJ cables.

So first you have to ensure that in the control room this cable is connected to switches if its not then you have to connect the fiber cable and its multiple steps :

Remove the Cable Jacket: At end of the fiber cable, remove the outer jacket to reveal the individual fibers with fiber cable cutter which have several sizes. When removing the cable jacket, adhere to the manufacturer's instructions while taking care not to harm the inner fibers.



Clean and check the fiber ends with alcohol: To get rid of any debris, dust, or pollutants, clean the fiber ends with lint-free wipes and a fiber optic cleaning solution. Make sure the fiber ends are clean and defect-free by checking them with a microscope or other visual inspection equipment.

Terminate the Fiber Ends: Use the proper connectors or splices to finish the fiber ends, depending on the manner of termination. Fusion splicing or mechanical connectors might be used for this. For the particular termination technique and connector type being utilized, adhere to the manufacturer's guidelines. We used Fusin splicing method which is a device that connect to end of fiber glasses vis laser and also tells you the db of the splicing.

and after that we connected the fiber cable to switch then we have do the same step in the apartments node to connect it to the home router. After that we have to configure

- the router for example setting the type of Wi-Fi 4G or 5G
- also setting the name and password for the Wi-Fi.
- Then setting the remote port for the network operation center in case we wanted to control the home router remotely.



I also learned how to set up RJ cables.

RJ45 is a standardized connector used for Ethernet networking, connecting twisted pair cables to devices such as computers, routers, switches, and network devices. It has eight pins that align with eight conductors inside an Ethernet cable, reducing electromagnetic interference. It is widely used in residential and commercial environments.

Steps to setup:

1. Using a cable stripper, remove the outer jacket of the cable about 2 inches (5cm) from the end. Take care not to harm the inner wires.
2. Untwist and place the inner wires correctly. Ethernet cable color codes are as follows:
(Orange Stripe>>Orange>>Green Stripe>>Blue>>Blue Stripe >>Green>>Brown Stripe>>Brown).
3. Trim the wire ends to make them even.
4. Connect the wires in the correct order to the RJ45 connector. Check that the wires go all the way into the connector and are correctly seated.
5. Crimp the connector onto the cable with a crimping tool. Follow the directions that came with your crimping tool.

5- Conclusion:

In conclusion, Lucid Source is a networking company that specializes in creating, installing, managing, and maintaining computer networks. They offer a wide range of security systems, including fire alarm systems, CCTV, intercom solutions, and sound systems. The company has been involved in major projects and is considered one of the best in the networking industry in Erbil.

I developed real-world expertise in a variety of networking roles and responsibilities while I was working at Lucid Source. I worked on setting up and maintaining the internet as well as monitoring CCTV, network operations center jobs, and networking setup. I gained useful knowledge about setting up switches, routers, IP phones, and access points. Additionally, I configured and monitored security cameras utilizing HIK Vision systems. Additionally, I took part in the development of internet services and developed my network administration skills in a network operation center.

Overall, my internship at Lucid Source gave me significant networking operations expertise. I got the chance to collaborate with seasoned professionals, learn about the most recent technological developments, and hone practical skills that would be useful in my future job in the networking industry.

6- Acknowledgments:

I would like to express my sincere gratitude for the opportunity to work as an intern at Lucid Source. My time with the company has been invaluable in terms of personal and professional growth, and I would like to extend my appreciation to the entire Human Resource team for their support throughout my internship journey.

From the moment I joined Lucid Source, the HR department played a crucial role in ensuring a smooth onboarding process. They provided me with all the necessary information, resources, and guidance to make my transition into the company seamless. Their responsiveness, professionalism, and warm welcome made me feel valued and encouraged me to give my best from day one.

I would also like to express my heartfelt thanks to my supervisor Mr. Mohammed Nazim at Lucid Source. His mentorship, guidance, and trust in my abilities have been instrumental in my development during the internship. He provided me with challenging tasks and opportunities to grow, while always being available to answer my questions and provide valuable feedback. His leadership and expertise in the networking industry have been truly inspiring, and I am grateful for the knowledge and skills I have gained under his guidance.

Furthermore, I want to express my appreciation for the entire Lucid Source team. Everyone I had the pleasure of working with, from colleagues to senior professionals, treated me with respect and made me feel like a valued member of the team. The collaborative environment and positive work culture at Lucid Source have contributed significantly to my learning experience and have shaped me both personally and professionally.

I am grateful for the exposure to cutting-edge technology, the hands-on experience with networking configurations, and the opportunity to work on significant projects such as Wavy Avenue Towers, Quatro Towers, and Star Towers. These experiences have equipped me with practical skills and knowledge that will undoubtedly benefit my future career in the networking industry. I am honored to have been a part of Lucid Source, and I look forward to staying connected with the company and its amazing team.