**INTERNSHIP ON IT SUPPORT & NETWORKING REPORT**


**BY**

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering


Supervised By
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**DAFFODIL INTERNATIONAL UNIVERSITY**
**DHAKA, BANGLADESH**
**DECEMBER 2021**

## APPROVAL

This Project titled "**IT Support & Networking**", submitted by Rashedul Islam to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on September 2021.
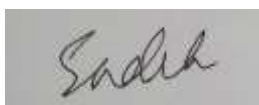
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# DECLARATION

I hereby declare that, this internship report has been done by us under the supervision of **Md Abbas Ali Khan, Sr. Lecturer, Department of CSE** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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# ACKNOWLEDGEMENT

First I express our heartiest thanks and gratefulness to almighty God for His divine blessing makes me possible to complete the final year internship successfully.

I really grateful and wish our profound our indebtedness to **Md. Abbas Ali Khan** , Sr. **Lecturer**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of "*IT Support & Networking*" to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting them at all stage have made it possible to complete this project.

I would like to express our heartiest gratitude to Professor Dr. Touhid Bhuiyan, Professor, and Head**,** Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

I would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, I must acknowledge with due respect the constant support and patients of our parents.

# ABSTRACT

I was involved in "IT & Network Support" work in an organization called Information Network Service(ISN). During the internship, I was assigned various jobs and responsibilities. My training focuses on various topics, including operating system troubleshooting, system and network management. What I did during the training included setting up the router and setting up the LAN connection. The hardest part is talking to professionals for the first time and learning new things from them. After a while, it became more comfortable for me. I think I am fortunate to be able to accept guidance in this field. They showed me the right way to be as successful as possible in the future. During this internship, I was able to work in various settings, learn new skills, and quickly complete paperwork.

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# CHAPTER 1
# INTRODUCTION

## 1.1 Introduction

In today's environment, data and network communication is the fastest growing technology in the world. Almost all businesses and industries around us use computers and computer networks. And now the latest network technology is wireless, the data transfer rate is huge.

Bangladesh, as a developing country, lags significantly behind developed countries in terms of technological progress. The main factors could be the lack of qualified personnel and the unexpected actions of the government. Either way, Bangladesh still has a long way to go in a short period of time before it can reap the benefits of the Information Age. This will only be possible if there is political will to improve IT infrastructure, intranets, national domains, and above all to link high-speed fiber to the information superhighway. By identifying these factors I can be sure of a revolutionary change in our IT business which is why I chose to expand my network knowledge. and started a network internship at ISN . During my time working at ISN, I have gained many experiences that will be useful for me in the future.

## 1.2 Motivation

People need motivation to achieve their goals. Any private company, NGO, government organization, hospital, bank, educational institute, etc. are now managed by a large number of IT equipment and IT systems. Computer systems are used by everyone. A computer with network capabilities is the most important aspect of creating a workplace with multiple computer systems.

I will realize how important it is to collect accurate information. It is very difficult to survive in any industry without actual expertise. Practical knowledge contributes to a broader understanding of academic knowledge. During my internship, I encountered various problems. When I am faced with a situation, I will do everything in my power to deal with it. I think this is a great way to learn. In the future, I want to create my service provider as a network engineer.

**1.3 Internship Objectives**

The internship was designed to help me develop my career in IT and networking support. In this situation, troubleshooting and network-related tasks such as network design and maintenance inspired me during my internship with the organization. The goal is to learn more about network functions, implementations, problems and solutions, and identify and resolve software, operating system, and management software problems. office management.

**1.4 Introduction to the Company**

ISNis a privately held software company providing a wide range of quality assured IT services, such as software development, web development, web design, UI / UX design, graphic design and e-commerce solutions. . They are hardworking, ambitious, ethical and work hard for their members and their products.

**1.5 Report Layout**

Chapter 1: has been described as with the aim of the place, the motivation of the place and the introduction of the company.

Chapter 2: I wrote about the purpose of the internship, the motivation of the internship and the approach of the company.

Chapter 3: I wrote an event, an event and a challenge for my internship, as well as regular responsibilities and practices, as well as activities, events and challenges during my internship.

Chapter 4: I have been described for experts, smart plans and reflections.

Chapter 5: Conclusions on the future career plan and where you like to put my sight in the future.

# CHAPTER 2
# INTERNSHIP ENTERPRISE

## 2.1 Introduction

Information Service Network(ISN) is one of the ISPs/ASPs in Bangladesh, providing one-stop integrated services and solutions. They have their own fiber optic and wireless link WAN infrastructure to serve corporate and individual customers. ISN online has built a reputation for collaborating with many national projects and international organizations. We use the latest technology and upgrade our services as needed. At the heart of the

Enterprise Network Solutions, we can provide highly efficient technical experts for advanced network and telecommunication solutions. Recognized, highly qualified professional engineers and management teams with connections to Cisco, Microsoft, Linux and oracle, and participating in the world's leading computing associations, including IEEE, ACM, ACS, BCS, and PMI. Corporate Social Responsibility in Communities, Workstations, Places and Markets. Through its programs and services, DOL drives three major platforms: national building, education, and environment.

## 2.2 Product market Situation

Information Service Network(ISN). One of the leading Internet Service Providers (ISPs) in Bangladesh. It is the oldest and most experienced company in the ICT field, and its basic business is long-term relationships with customers. When they see growth over the past decade, they are very proud of what they have achieved ISN online provides various types of IT services and provides professional training services.

## 2.3 SWOT analysis

SWOT analysis is a very important and useful way to understand weaknesses and strengths and to characterize the kinds of threats the opportunities are facing.

Strengths:

• Communication between people away from the street.

• Telecommuters.

• Preparation of online business.

• Gathering of information

Weaknesses:

- It takes a lot of money to start a business.

- Competition for Differential Distributors.

- Many price rates and service options.  Opportunities:

- Changes in demographic structure.

- The number of households is increasing.

- Introduction of simpler rates.

- Modification of order system.  Threat:

- Economic crisis The stock market for broadband subscriptions lacks confidence in the digital communications market for landlords.

- We must set aside how the client can be persuaded to accept access to the Internet.
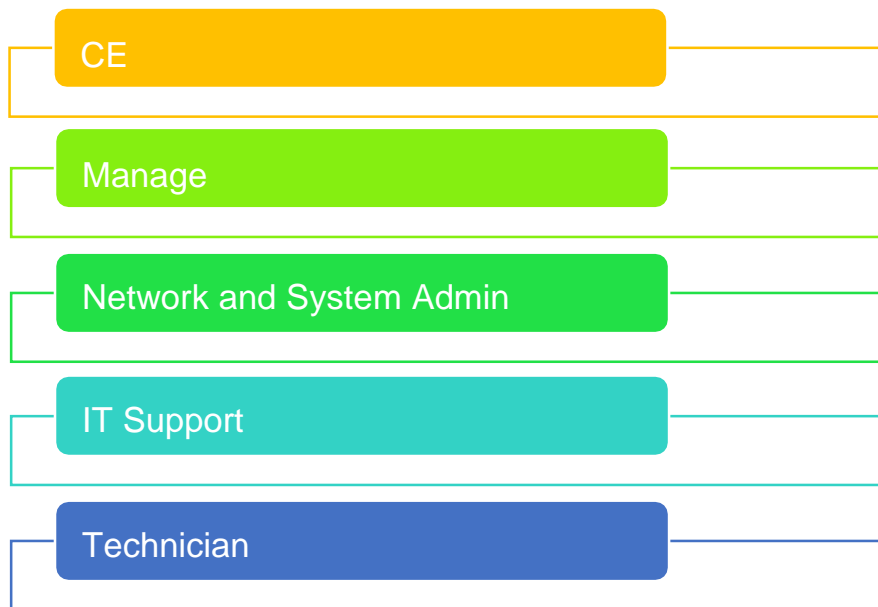
## 2.4 Organizational Structure



CE

Manage

Network and System Admin

IT Support

Technician

Figure:2.4 Organizational Structure

# CHAPTER 3
## EXERCISE, EVENTS AND ACTIVITY

### 3.1 Networking

A network connection with one or more computing devices required to share files and data. The combination of computer and networking components creates a network. Networks are not just computers. Other devices such as web cameras, access control, satellites, network printers, cell phones, and radios can connect to computers on the network.

### 3.1.2 Types of Network

i) LAN  ii)
MAN   iii)
WAN

### 3.2 Local Area Networking

A local area network is a network of computers located in the same building. The data transfer rate of this network is 10 Mbps. Devices used in this network are repeaters, hubs, network interfaces, etc.
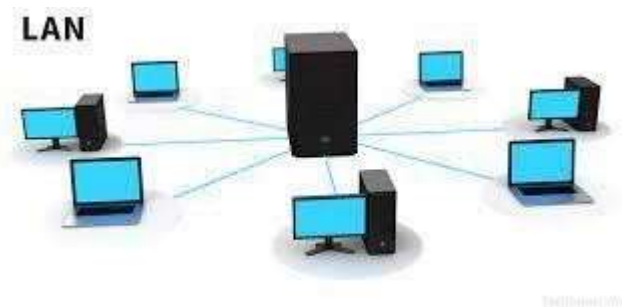


Figure 3.2:  Local area Network.

### 3.2.1 Metropolitan Area Network

The interconnected interface of a few lanes in the same city is called Metropolitan Area Network. This type of network can extend up to 50-75 miles. This network's data transfer speed is Gigabit cross seconds. The devices used in this type of network are router, switches, microwave antennas etc.

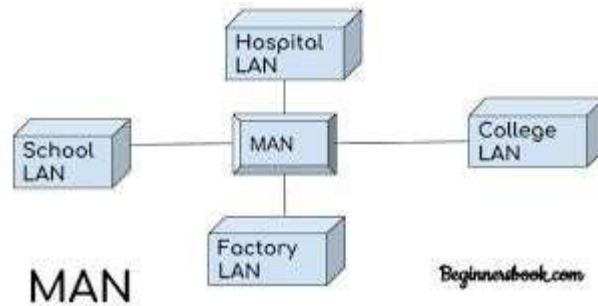Figure 3.3: Metropolitan area Network.

### 3.2.2 Wide Area Network

The network developed with remote lanes is called wide area network. Data transfer speeds of this type of network are 56 Kbps to 1.544 Mbps. The speed of the wans is slowly changing. The devices used in this type of network are router, modem, wan switches etc.
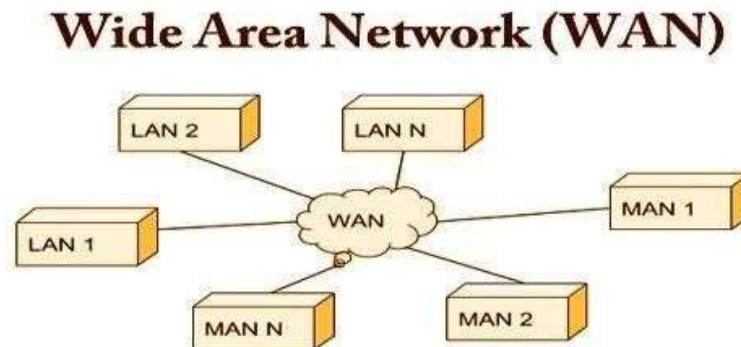


Figure 3.4: Wide area Network.

### 3.3 Types of Network Topology

a) Bus topology

b) Star topology

c) Ring topology

d) Hybrid topology

### 3.3.1 Bus Topology

All computer connected to the network are connected to bus topology by a single cable. Generally, this topology uses co-axial cables as network media. A device wanting to communicate with another device on the network sends broadcast message onto the wire that all other devices see, but only the intended recipient actually accepts and process the message.
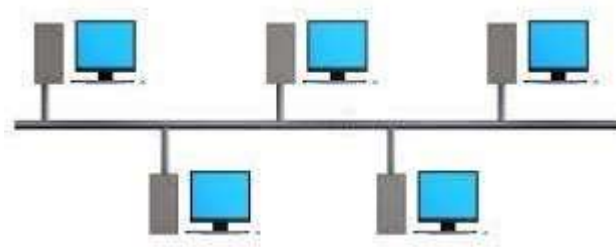


Figure 3.5: Bus topology.

### 3.3.2 Star Topology

Star topology develop a central switch / hub in Star topology. This | If there is no computer on the network, then there will be no impact on the entire network. Through the server computer, other client computers interact with each other. If the switch or hub is closed in star topology, then the entire network will be closed. Because of communicating with the PC as a switch. It should be remembered that you have to use Straight-through Cable from PC to switch. Because switch and PC is a different device Normal switch does not have any type of configuration.
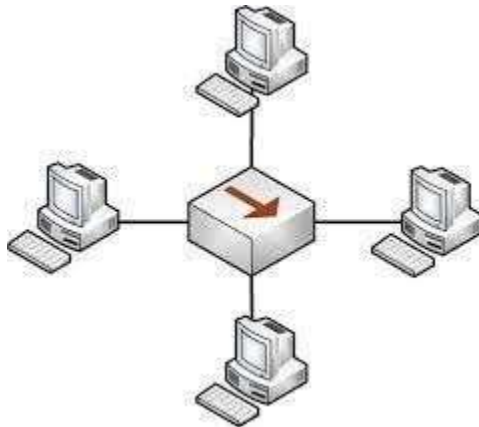
Figure 3.6: Star Topology.

### 3.3.3 Ring Topology

All computer networks in the ring topology are connected by a uniform cable to each other in the ring shape. If there is a breakdown of the cable or a computer that is networked in the network, then the entire network becomes idle. To overcome this problem, the secondary ring-cable system is placed in the ring topology.



Figure 3.7: Ring Topology

### 3.3.4 Hybrid Topology

Generally, a mixture of star, ring, bus etc. is made up of topology very large and complex in the shape. The network is called hybrid or hybrid topology. For example, the networks of WAN, Internet etc. are usually developed in hybrid topology**.**

9
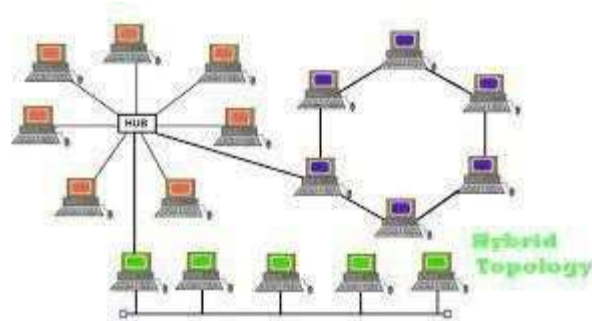
Figure 3.8: Hybrid Topology.

## 3.4 Creating Ethernet Cables

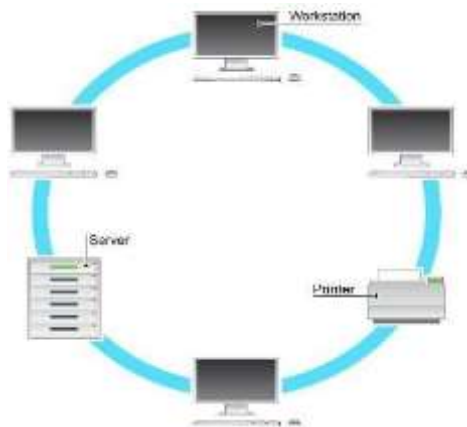At first, you need a cat cable 5 and remove the cover of the cat cable 5 and place it from orange, orange, white green, blue, bluewhite, green, brownwhite, brown. Then, , then cut the control and insert it carefully into the RJ45 connector.

Now put the connector in the RJ45 clipping tool using the RJ45 clipping tool. Now, carefully press the tool, the hotfix will be completed. Figure 3.15 below



Figure 3.9: Patching Cat5 cable.

## 3.5 Hub & Switch

A small device that can connect multiple computers in a single network forming a local area network is called a hub or switch. It works pretty much the same, but the switch is better and more powerful at iterating through sent or received data and identifying each packet. Hubs and switches, Shown below in Fig 3.16.

Fig 3.10: Hub & Switch

## 3.6 Router

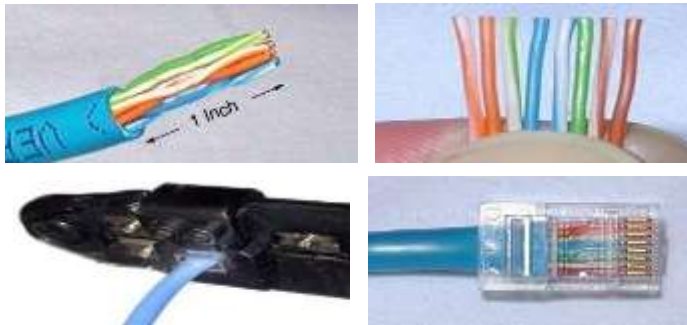To connect WAN and LAN or share ISP network on two or more devices, the necessary device is a router. It must first be configured to create an ISP provided network in the local network. It acts as a gateway connecting multiple devices to the network. Router, Shown below in Fig 3.17.



Fig 3.11: Router

## 3.7 Configuring the Switch Management Interface

### 3.7.1 Addressing table

| Device | Interface | IP Address | Subnet Musk |
|--------|-----------|------------|-------------|
| S1 | VLAN 1 | 192.168.1.252 | 255.255.255.0 |
| S2 | VLAN 2 | 192.168.1.254 | 255.255.255.0 |
| PC1 | NIC | 192.168.1.1 | 255.255.255.0 |
| PC2 | NIC | 198.168.1.2 | 255.255.255.0 |

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**Configure the Switch Management Interface  Step:1**

Commands to configure S1 with an IP address:

S1# configure terminal

S1(config) # interface vlan 1

S1(config) # ip address 192.168.1.253.255.255.0

S1(cong-if) # no shutdown

%LINEPROTO-5-updown; Line Protocol on Interface Vlan1, changed state to up

S1(config-if) #

S1(confi g-if) # exit

S1#

**Step:2**

Commands to configure S2 with an Ip Address:

S2# configure terminal

S2(config) # interface vlan 1

S2(config) # ip address 192.168.1.255.255.255.0

S2(cong-if) # no shutdown

%LINEPROTO-5-updown; Line Protocol on Interface Vlan1, changed state to up

S2(config-if) #

S2(confi g-if) # exit

S2#

**Step:3**

Use **Show running-config** command for ip address configuration on S1 and S2

**Step:4**

Use Copy running-config startup-config

**Step 5**

Use **Ping** command

a) Click Pc1 and then click the Desktop Tab

b) Click Command Prompt

c) Ping the IP Address for PC2

d) Ping the IP Address for S1

e) Ping the IP Address for S2

## 3.8 Events and Activities

- Monitoring all Computer Systems and solving basic problems.

- Building new computers by installing OS with the necessary software.

- Creating and connecting user accounts under a domain, changing passport and permission.

- Diagnose the root problem of computers and networks.

- Designing (Sketch) and installing a LAN.

- Configuring A LAN network for sharing files.

- Cabling with RJ45 connector.

- Configuring various types of router from different brands.

- Connecting computers to a domain.

- Remote support via various remote-control software.

- Configuring network devices like Printer, CCTV and Access control.

- Fixing network faults.

- Updating and upgrading software and applications.

- User Support by phone or Physically to troubleshoot the problem.

## 3.9 Project Task and Activities

## 3.9.1 Hardware Analysis

Hardware, in a computer system, means the physical parts or equipment that are used to build a system. There are various types of parts that may use inside of a CPU. Computer-related hardware, old or new are tested for smoothness operative and this relies on various factors. The RAM (Random Access Memory units) have to be checked if they're working fine. In server computer power up at the most times. In such cases, we usually

check for a RAM or an influence supply or a motherboard burnout. Step by step, we target

the particular part that we'd suspect and troubleshoot accordingly. The spoilt parts are usually replaced with new available fixed ones.

A monitor that's not working is typically sent to the vendor for repairs and that we try and claim its warranty if it's remaining. The same goes for a printer after having checked the Toner and cartridges, the printing head and therefore the rollers. As for the out of order not working scanners and other devices, they are sent back to the vendors for repairs. In Microsoft Windows, Device

Manager ware hardware & device resources are managed. **[2]**

Many types of components are usually find in a contemporary case of computer. Those are, Shown below in Fig 3.1.



Fig 3.12: Components of CPU

Some components are directly connected to the Motherboard (Mobo) of computer, those parts or components, Shown below in Fig 3.12.
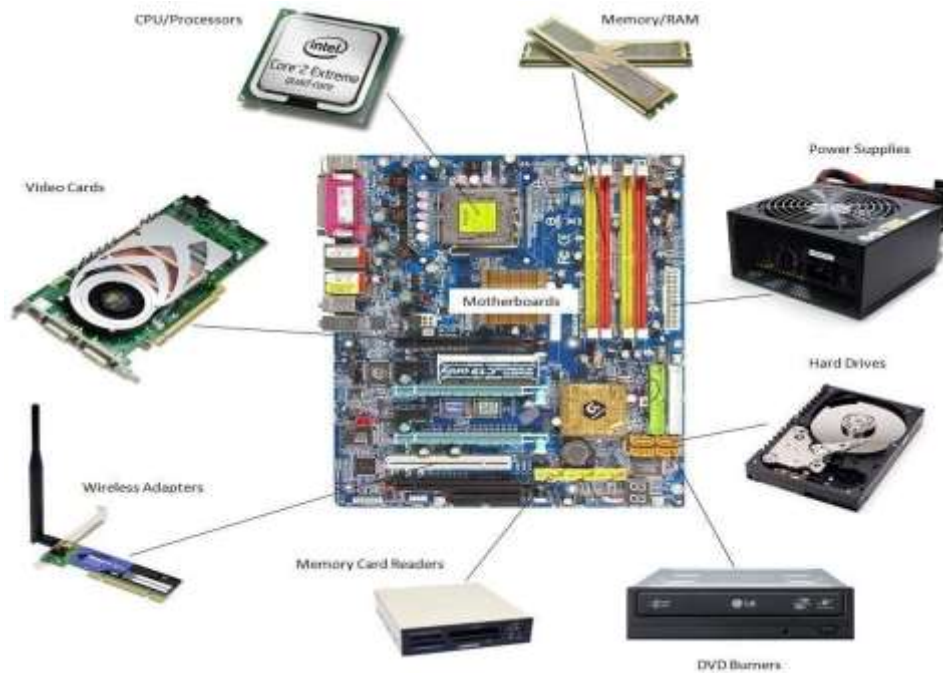
Fig 3.13: Connected parts with Motherboard

## 3.9.2 Hardware troubleshooting & maintenance Problem Identification

• Computer startup problems.

• No power to the monitor.

• Computer takes time to boot.

• A problem occurred when shutting down the computer.

• Driver installation problem.

• Software installation error.

• The printer does not work.

• The mouse does not move at all.

• Restart the PC.

• Internet speed is slow.

• The router may not work.

Inside view of the CPU, Shown below in Fig 3.3.

Fig 3.14: Inside view of CPU case.

## Problem solutions

- If your RAM is weak or low, you can restart your PC. Next, you need to replace or increase the RAM memory.

- Therefore, if the RAM is not working properly, the display will not start. Than to remove dust from the RAM and reinsert the RAM into the slot. Or the RAM needs to be replaced.

- Does not operate normally when RAM resources are exhausted during a virus attack.

- The driver CD / DVD is corrupted or does not work properly and does not match the connected computer.

- The mouse sensor does not work properly.

- If the operating system crashes, you need to install a new operating system.

- The required application needs to reinstall the window.

- Use the latest antivirus scan to put your PC together

# CHAPTER 4 COMPETENCIES & SMART PLAN

## 4.1 Competencies Earned

The obtained insight or learning result is an assertion of what the understudy hopes to know, as a comprehension of the aftereffect of the learning system. Raising money for the Office of the Student Association and temporary position learning results data gathered and coordinated in the undertaking Description-Participated in the upgrade. Learning Outcomes Software establishment and overhaul, programming arrangement and organization business administration testing. The site boss will give direction on the association's strategies and techniques.

## 4.2 Smart Plan

A decent arranging chief is constantly known to be a savvy individual, however once in a while a keen individual commits error when arranging. I have taken in a great deal and had the chance to work with me and have rich experience. Since I've taken an ideal action into the organization, I'll buckle down for it. I have a few designs for the future, yet my principle plan is to put in a couple of more years and give a valiant effort to foster my abilities.

## 4.3 Reflections

Work is difficult for the work environment, particularly on the off chance that I have no insight. A fruitful entry level position can assist me with acquiring work insight. My temporary position was thusly a triumph. Think about a smart thought, similar to a future work or a great job. I trust that these temporary positions can be acquired through a wide range of callings. Presently I can without much of a stretch say that I have a decent opportunity to flaunt my abilities and difficult work. I additionally had the chance to show my devotion and discover what I will do later on and construct my vocation. The motivation behind the temporary job is network engineers, network heads, territorial help architects and IT designers of an association.

# CHAPTER 5 CONCLUSION & FUTURE CAREER

## 5.1 Discussion and Conclusion

The temporary position was a magnificent and improving involvement with my life. I will assist me with continueing to speak with many individuals and I will see it once more. The primary concern is that I have acquired time usage abilities just as selfinspiration and a great deal of work insight. At the point when I began my entry level position, it was a test for me. Eight hours per day and six days seven days will actually want to sit at a work area. This is the reason I keep up with time. I have figured out how to inspire myself. Numerous sorts of recommendations and thoughts went to the Society and searched it out. I love my work and need to continue buckling down for my position, becoming familiar with the business and meeting new individuals. This entry level position has been an extraordinary encounter of my life and I think different temporary jobs have taken in a ton from it.

## 5.2 Scope of Further Career

Data innovation and profession openings are accessible in many fields. The IT calling isn't simply data and innovation, it incorporates numerous regions, for example, overseeing and keeping up with all that it contains, giving answers for all IT related issues, get together and dismantling. PC frameworks, printer fix, switch design, centers, neighborhood associations and PC recharging. into the space. Today, any privately owned business, NGO, government office, clinic, bank, instructive establishment, and so forth This is the reason I need my mediator to be an IT and organization engineer.

## APPENDICES
### Appendix A: Internship Reflection

My entrance level position was truly straightforward since I had a ton of inclusion through my ordinary situations at various spots. In any case, I had experience I had taken in various things which can be reflected in my report. I have referred to a part of my revelations and experiences which are favors for me. An individual ought to can do his/her work fittingly and through a passage level position, we can understand what is mastery and how should we use it. I think the data we acquire from accessible experience is especially huge as standard learning. We are ceaselessly looking for straightforward procedures yet we didn't envision that if we endeavor the cycle which is created on the books isn't hard to complete. Out basics have given us much information which is incredibly useful now. My entrance level position told me the best way to execute plans, how to react to bothersome conditions, how to be a genuine person. It similarly showed me different ways to deal with reach and react to issues. I got the opportunity to see through specific issues which were not taught in our courses which is a certifiable experience. Impermanent position is the place where we use our understanding which we obtained for seemingly forever and do those.

### Appendix B: Company Detail



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Web: Bangla.net

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https://www.javatpoint.com/computer-networktutorial?fbclid=IwAR0VqAP6naabz1xuJXVOqqG3lEANktZFiJgpLkUSWnbDqyhSREo5sS409Jg


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