

INTERNSHIP REPORT
WORKING PROCESS OF NETWORK OPERATION CENTER

BY

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ID: 143-15-4651

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

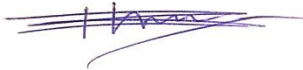
09 SEPTEMBER 2021

APPROVAL

This Project/internship titled **Networking Administration**, submitted by **Md.Nazmul Huda**, ID No: **143-15-4651** 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 **09.09.2021**.

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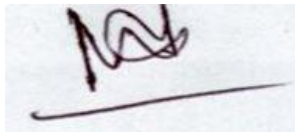
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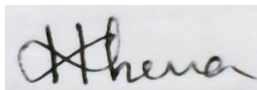


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DECLARATION

I hereby declare that; this project has been done by me under the supervision of **Ms. Afsara Tasneem Misha, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this intern nor any part of this intern has been submitted elsewhere for award of any degree or diploma.

Supervised by:



Ms. Afsara Tasneem Misha

Lecturer
Department of CSE
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Submitted by:



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ACKNOWLEDGEMENT

First, we express our heartiest thanks and gratefulness to almighty ALLAH for His divine blessing makes it possible to complete the final year project/internship successfully.

I am grateful and wish my profound indebtedness to **Ms. Afsara Tasneem Misha, Lecturer**, Department of CSE Daffodil International University. Deep Knowledge & keen interest of our supervisor in the field of “Network System. Her endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts, and correcting them at all stages have made it possible to complete this project.

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

And yet, I would like to thank my colleagues from **Triangle Services Ltd**, who took part in helping me in my internship while completing the coursework (use router, switch and other networking devices make it easy to understand. I was not too familiar with the terms of these physical devices before, so working on the organization and using these devices helped to gain practical experience on how the network is monitored at the corporate level. Finally, I must acknowledge with due respect the constant support and patients of my parents, without them any of my work wouldn't happen.

ABSTRACT

This report is for completing my internship successfully under the supervision of Ms. Afsara Tasneem Misha. To complete my internship, I had various tasks and responsibilities at my Organization. **Triangle Services Ltd** is one of the leaders in providing internet services & systems integration services. . Through their understanding and responsiveness to our customers' needs, as well as their collaborative approach, they ensure successful customer relationships while providing fast, cost-competitive, scalable services that help create competitive advantages for our customers in the world of electronic communication. During my time at Triangle Services Ltd, I worked with the NOC team. The company can benefit from the findings and analysis previously discussed here. In the course of this study, I gained a practical understanding of routers, switches, and how the network system process works within Triangle services Ltd organizations. Further, networking has learned its importance in this study as well. Additionally, reading this report helped me to get a comprehensive understanding of how to grow in my future endeavors. A final point I wish to mention is **Triangle services Ltd's** recruitment process is also the most current and harmonious one I have seen in the industry.

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CHAPTER 1

INTRODUCTION

Introduction

Triangle operates throughout a system that is built on outstanding Metro Ethernet technology and nonparallel communications. The fully redundant, carrier-agnostic backbone architecture enables us to deliver high network up times and network availability to our customers. **Triangle Services Ltd.** has set up a good foundation for itself as a main and promising Internet specialist co-op (ISP) in Bangladesh since 1997 with our POPs ready to help every one of the most recent WAN conventions. For each of our valued residential and business customers, the Company consistently provides fast, solid Internet access and revolutionary Internet solutions.

Motivation

At the point when I began my temporary job in **Triangle Services Ltd** , I was new to the climate. However, I was consistently energetic to find out with regards to new things. As a fresher, I felt difficulties in how this immense measure of information is observed and continued to run. Yet, step by step, I was adjusted and felt self-assured. Subsequently, it was hard and trying for me to adjust to this day by day schedule. Despite the fact that it is continually difficult to learn new things, I believe that I had the option to adapt to these difficulties. Security best practices should be perceived by the organization overseer. Besides, I acquired experience working with specialists in different figuring fields.

Internship Objectives

The core objective of this study is to gain a realistic and practical understanding of the structure and activities of NOC. The broad objective and specific objectives of the study are given below

Broad objective

The broad objective of this study is to be familiar with the working environment of present institutions, know the internal culture of the corporate world, and fulfill the requirements of Computer Science theoretical knowledge gained from the course work of the Computer Science program in a specific field,

Specific objectives

- To gain knowledge about the activities and functions
- To relate the theoretical learning with the real-life situation
- To suggest the way and means for improvement on policy and techniques.
- To study the operational efficiency of Triangle Services Ltd.
- To understand and analyze the overall activities of Triangle Services Ltd.

Introduction to the Company

In its network infrastructure, **Triangle Services Limited** has set the standard of excellence. The metropolitan area network (MAN) is controlled by 8 sections of the country through an optical fiber.



Figure 1. 1: TSL LOGO

Table 1. 1: Organization Info

Name	Triangle Service Ltd.
Address	Wakil Tower, Ta-131, Gulshan Badda Link Road, Dhaka - 1212
Phone	+88-09666-770444
Email	info@triangle.com.bd
Website	http://www.triangle.com.bd/
Type of organization	ISP
Employees	35

Report Layout

Chapter (01) I defined my internship, the incentive of my intern, my willingness to intern, and my workplace.

Chapter (02) I mentioned my organization, what they provide, what they produced.

Chapter (03) Operational Services of Company

Chapter (04) Achievement From Internship

Chapter (05) Conclusion

CHAPTER 2

ORGANIZATION

Introduction

Best internet provider issuer in Bangladesh which offers absolutely dedicated, super-fast, cost-effective, secured net connection. We're dedicated to assembly your desires and turning in industry-main purchaser provider.

Product and Market Situation

Triangle Services Ltd is a main and promising Internet carrier provider (ISP) in Bangladesh, the Company is constantly incomes a popularity for fast, solid Internet get admission to and modern Internet answers for our valued residential and company customers.

- Leased Internet – we offer completely committed and duplex Internet with complete safety through fiber and wi-fi inside the country.
- Day foundation Internet – we will offer any quantity of bandwidth insidea totally brief time for Events, Business Meetings/Conferences, Tele-Broadcasting, and so on with complete safety through fiber inside the country.
- Wi-Fi Hotspot – we offer seamless wifi carrier with excessive quantity of bandwidth for small to excessive variety School/College Event, International fairs, and so on.



Fig 2.1 The Ratio Of Global Capacity

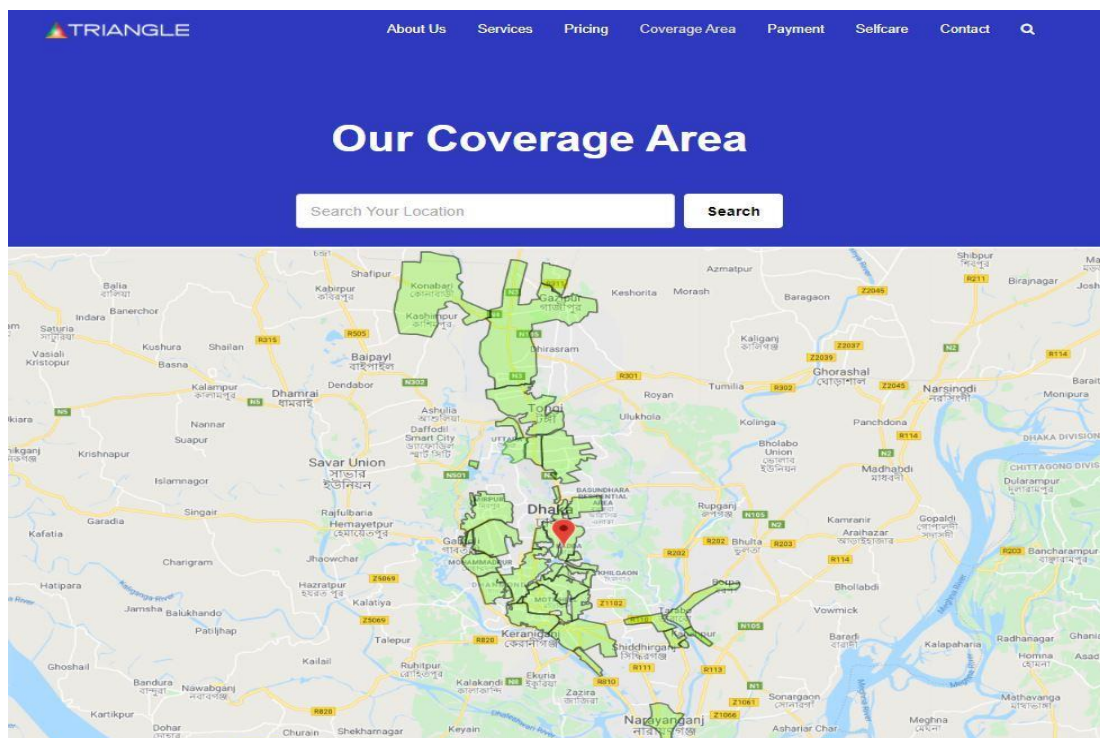
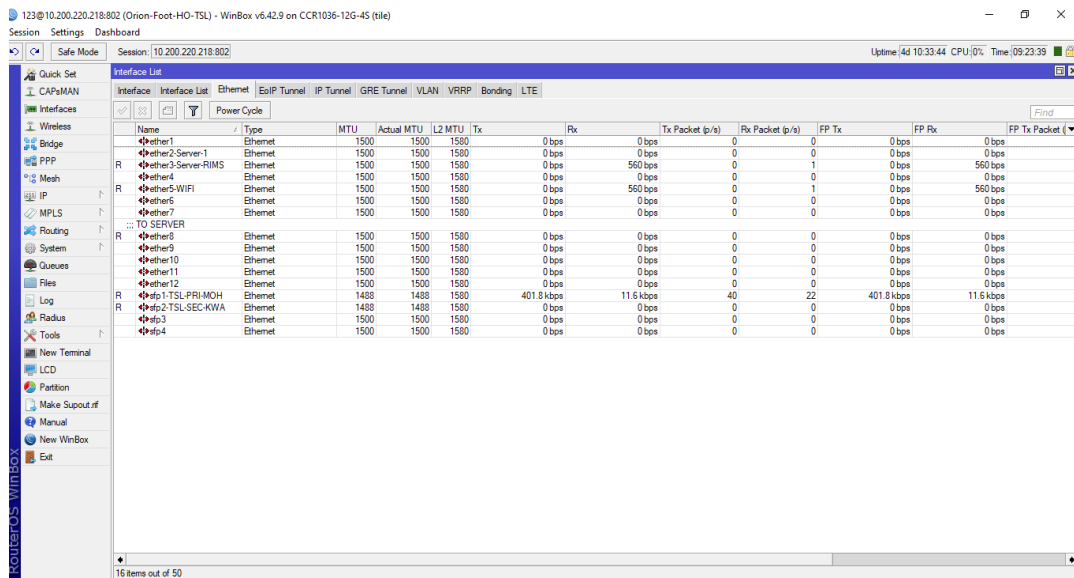


Figure 2. 2: Coverage Area Of Triangle Service Ltd

Target Group

TSL works with the various company given below

- Buydevs
- Infinity Outfit LTD-1
- Techno metrics Ltd.
- Md.ShakhawatHossain(IT manager of UTAH Group)
- M/S Ideal Clipping
- Jhill Trade International
- Powertex Fashions
- Development Design and management
- Gazipur Metropolitan SP



The screenshot shows the WinBox router interface with the 'Interface List' table. The table lists various interfaces and their configurations. The columns include Name, Type, MTU, Actual MTU, L2 MTU, Tx, Rx, Tx Packet (p/s), Rx Packet (p/s), FP Tx, FP Rx, and FP Tx Packet. The table contains 16 rows of data, including interfaces like ether1, ether2-Server-1, ether3-Server-RIMS, ether4, ether5-WiFi, ether6, ether7, ether8, ether9, ether10, ether11, ether12, fsp1-TSL-PRI-MOH, fsp2-TSL-SEC-KWA, fsp3, and fsp4.

Name	Type	MTU	Actual MTU	L2 MTU	Tx	Rx	Tx Packet (p/s)	Rx Packet (p/s)	FP Tx	FP Rx	FP Tx Packet
ether1	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
ether2-Server-1	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
ether3-Server-RIMS	Ethernet	1500	1500	1500	0 bps	560 bps	0	1	0	0	560 bps
ether4	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
ether5-WiFi	Ethernet	1500	1500	1500	0 bps	560 bps	0	1	0	0	560 bps
ether6	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
ether7	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
TO SERVER											
ether8	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
ether9	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
ether10	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
ether11	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
ether12	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
fsp1-TSL-PRI-MOH	Ethernet	1488	1488	1500	401.8 kbps	11.5 kbps	40	22	401.8 kbps	11.5 kbps	4
fsp2-TSL-SEC-KWA	Ethernet	1488	1488	1500	0 bps	0 bps	0	0	0	0	0
fsp3	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0
fsp4	Ethernet	1500	1500	1500	0 bps	0 bps	0	0	0	0	0

Figure 2. 3: Clients Router

I have also worked on this Win box router to manage their network.

SWOT Analysis

An organization's proprietors and chiefs should give exceptional consideration to the security arrangement of their PC network to keep up with their development and prosperity. The security of organization assets and administrations includes shielding them from regular and human-caused debacles. To do this, the security creator should play out an inside and out examination of the organization framework's weakness and foster measures to ensure the organization against fiascos. The way that switch ports are passages to an organization ought to be noted also. Subsequently, it is basic that they stay safe. Checking unused ports routinely and closing them down if important should be finished. Ports that are not being used are incapacitated for this organization. Macintosh address flooding, parodying, and sniffing should not occur on open ports.

Technical Strengths

- Internet backup through multiple IIGs, ITC.
- Multiple NOCs with redundant backbones.
- Protected PoP connectivity through ring network.
- Multipath intercity connectivity through different Telco/NTTN operators.
- High-end core networking devices like Juniper And Mikrotik router.
- Industrial grade bandwidth management and DPI solutions
- Strong power backups with long backup online UPS and generators
- Device/equipment level redundancy at all PoPs.
- Traffic optimization based on data priority for optimum performance

Organizational Structure

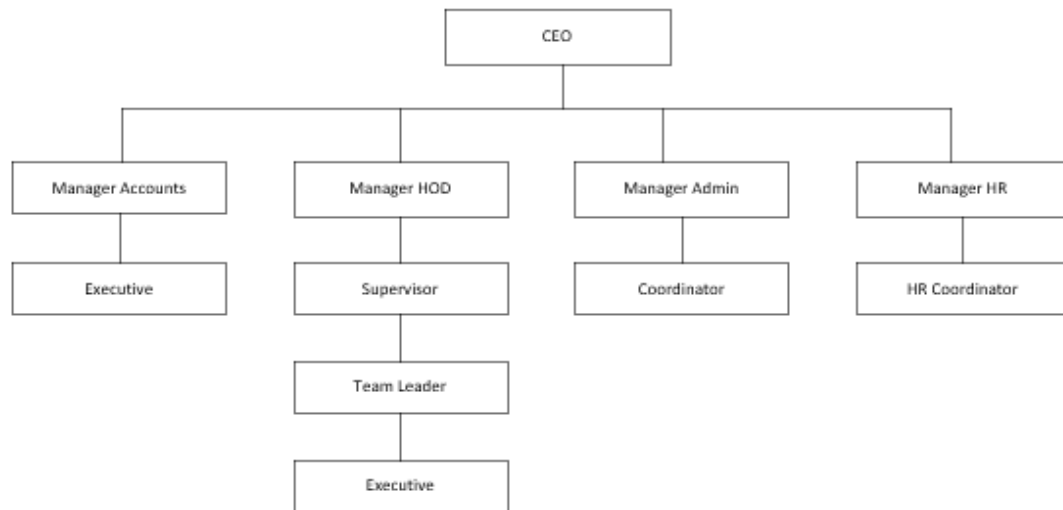


Figure 2. 4: Structure of Organization

CHAPTER 3

TASKS, PROJECTS, AND ACTIVITIES

Daily Task and Activities

I had to complete 48 hours in a week and had to attend 6 days a week at my workplace triangle Service Ltd. I had to start from 9.30 am-5.30 pm and My Daily task was configuring users, configuring Routers, switches, Site surveys, and design of- network structures of Corporate Clients, Clients Router Monitoring. My major responsibility was to monitor daily operational performance. I configured Router in the organization. Numerous utility applications, including against infection, Microsoft Office, Team Viewer, and different choices, were introduced on customers' PCs. Equipment issues I resolve incorporate console substitutions, screen substitutions, hard drive substitutions, smash substitutions, and numerous others. Offer types of assistance identified with web issues, for example, fix strings, re-pleating broken link eliminators (RJ45), substitution of web cards, and supplanting harmed turns on customers' PCs.

Events and Activities

I had to attend many training programs in the process of my internship. Mainly they were related to CCNA, Network security, Cyber security. In that seminar, I learned the basic Network operations center and how to maintain a network server, and how to manage a network system in a company. A fundamental report was given to get an outline of the framework and group conversations were likewise set up to help me to see every one of the terms and subjects of the framework. I had to manage the AAA Server which is used for the remote working system in a company. I also learned how to manage a DHCP Server from our official training and instruction.

Project Task and Activities

Despite the fact that I was doled out to the Systems administration group to have a reasonable comprehension of the IT office seven days long turn program was masterminded. In this pivot period, I had the chance to sit with each and every other group. This empowered me to acquire information on how each and every group is supporting the entire IT division And the Transmission Group. I likewise found out with regards to the usefulness, working strategies, and frameworks utilized by these groups. I partook in this chance of having the option to become familiar with the manners in which each group worked; truly I was astonished by the reality how fundamental each group activity is.

Challenge

This internship was a challenge for me. As I am doing an internship and many of my projects. I was unable to have requested a superior temporary position insight. Working in Triangle administrations Ltd assisted me with investigating genuine occupation life and how a worldwide organization works. This has been by a long shot the most fascinating and value commendable insight of my life. However there were a few issues and issues experienced and recognized during the temporary position program, so I needed to finish my temporary job mindfully. I was trying to do good but still, found myself in a position where my part is hardly appreciated. That was somewhat discouraging. In a professional workspace, it isn't acceptable and managing time was also a problem because of quizzes and other work from university. A harmony between work, scholastics, and individual life additionally appeared to be a test. My co-interns were high-spirited and worked hard. So, it was also challenging for me to do a better performance than them.

CHAPTER 4

COMPETENCES AND SMART PLAN

Competencies Earned

First of all, the internship software enabled me to benefit a few superior information on Computer Networks with Security. Working in an enterprise helped to make routers, switches and different networking gadgets clean to understand. It become now no longer too acquainted with me before, so operating at the enterprise and the use of those gadgets helped to benefit sensible revel in on how a community is monitored at a company level. The internship software additionally helped me to beautify my technical abilities thru the extreme use of the Ticketing System of **Triangle Services Ltd**. I knew it has many applications and can be used for various purposes but never got the opportunity to learn the real-life use of it. So this internship helped me get exposed to the real-life use of excel at a corporate level. Now I am aware that excel can be used to ease our work by using a pivot table to illustrate data in a meaningful way, by using filters and sort for finding and organizing the data quickly, and by using formulas for doing lengthy calculations in a blink of an eye.

Smart Plan

My temporary position at **Triangle Services Ltd** has given me a chance to enhance my scientific abilities. Insightful abilities incorporate both the capacity to utilize great thinking in dissecting a circumstance and furthermore the capacity to tackle issues. I accept my insightful abilities have additionally been improved by dealing with various prophet questions and observing functional execution. My relational abilities were outfitted as I found the opportunity to work in a conventional setting with individuals of various foundations. Through my collaborations with my manager and other senior workers, my relational abilities were improved. I figured out how to speak with bosses and seniors supervisors.

Reflections

My initial openness to proficient life through a temporary position has helped me for the most part in fortifying my abilities. I have created uplifting perspectives, a solid feeling of obligation, being imaginative, ingenious, open, and receptive to changes. It has made in me a premium in long lasting learning. For that, I could never pass up on the opportunity to thank my colleagues. Every one of them are so agreeable and accommodating. They gave me a ton of time to cause me to comprehend the entire IT frameworks work process. Whenever I had a problem relating to my work, they were always there to help. My associates imparted to me various shrewd tidbits of polished methodology about the locale, which was somewhat new to me. For example, Timeliness, welcoming seniors warmly, Grinning, and maintaining good manners in any event, when I'm irritated or vexed.

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CHAPTER 5

CONCLUSION AND FUTURE CAREER

Discussion and Conclusion

Triangle Services Ltd is one of the innovators in giving internet providers and frameworks incorporation administrations. They guarantee that our clients are effective by comprehension and being receptive to their requirements, just as working cooperatively with them to give one-stop quicker, cost-cutthroat, and versatile administrations that make upper hands in the realm of electronic correspondence. I have worked with the NOC group of **Triangle Services Ltd**. Here numerous discoveries and investigations were talked about already where the organization can have the turns of events. Doing this examination I have acquired the commonsense information on how to switch, switch are taken care of, how the organization framework measure works, and educated the significance of systems administration in **Triangle services Ltd** associations. Other than knowing the corporate culture, this report has assisted me with getting an extensive plan to fill in my future undertaking. As the last point, I would say that the enlistment interaction of **Triangle Services Ltd** is likewise contemporary and amicable contrasted with different associations in the business.

Scope for Further Career

Entry-degree positions provide understudies a time of beneficial involvement with the enterprise figuring out with their area of study. This revel in is full-size to understudies as a technique for letting them come upon how their examinations are carried out in reality

Organization

Prior to going to **Triangle Services Ltd**, I didn't have a clue what lucky intends to be. Notwithstanding, I'm very much aware of it now. At **Triangle Services Ltd**, I got so over powering help from my partners that I can always remember. In any case, not every person might be fortunate like me. So I have a solid idea for them that it is you who needs to adapt to the workplace climate and its way of life. By the by, not every person might be fortunate like me. So I have a solid idea for them that it is you who needs to adapt to the workplace climate and its way of life. There should be some plan of sporting time in the workplace. The table tennis I had as an impact of my entertainment consistently siphoned me up for the work I did. It would not have been a charming life in any case. To keep up with wellbeing, everybody needs to take some vacation from their assignments

Academic

Before progressing to **Triangle Services Ltd**, I didn't recognize what lucky means that to be. However, I'm cognizant of it currently. At **Triangle Services Ltd**, I were given overwhelming help from my colleagues that I will constantly don't forget but now no longer every person can also be fortunate like mine. Therefore I actually have a effective proposal for them that it is you who wishes to cope with the administrative center ecosystem and its culture, but now no longer every person can also be fortunate like mine. There should be some arrangement of recreational time in the workplace. I had a nice time taking part in Ping-Pong as the vicinity of my recreation that forever double-gear mine up to figure onerous. Otherwise, life would become monotonous and unwelcoming. Therefore, everybody ought to ascertain it slowly out of his/her add order to possess some refreshment.

Professional

It is likewise useful for assistants since it allows them an opportunity to concentrate on what it resembles to work for a particular organization or on occasion a specific field. A run of the mill assistant's difficulties incorporate using time productively, troublesome tasks, and mentioning the least complex information from the billet. Since the web has become so well known these days, it wears like stones in the Partner in Nursing Sea of information in light of the fact that there are such countless individuals utilizing it. Most of web clients don't see definitively how it functions or couldn't care less. Those not many that do see how it functions either exploit the weakness of others or guarantee their security, or just couldn't care less with regards to the wellbeing of others. To guarantee network security, it is fundamental that it is sealed shut before sending. The generally weak data of the association will be penetrated and assaults will be dispatched. Indeed, even the easiest security application requires an organization chairman to comprehend its substance. For my future vocation, I discovered how to work with experts across various spaces of figuring

APPENDIX

APPENDIX A: Internship Reflection

Temporary jobs are extremely helpful to assistants themselves as they offer the opportunity to discover what works for a specific organization, or inside a specific industry, resemble. There are some normal difficulties that assistants ordinarily face, for example, - using time effectively is a test. Whatever the issue, take the best information from the temporary job. An internship provides a great opportunity for prospective employees to gain experience in a particular field or industry. Involvement in these projects also taught me how to handle and cope up with big projects, how to manage everything easily, how to maintain project timelines and schedules. The internship added me to numerous new gear and technology to paintings in a group environment, a totally green manner for a speedy understanding network. At the end of my internship and internship experience, I learned to take a professional opinion through a different measure and manage everything right, which will be very helpful in my future workplace.

APPENDIX B: Company Details



TRIANGLE SERVICE LIMITED (TSL)

Wakil Tower (7th Floor Ta, 131 Gulshan
BaddaLink Road, Dhaka 1212
+88009666-770444

<https://www.triangle.com.bd>

REFERENCES

1. <https://www.triangle.com.b>

Recommendation letter



07 September 2021

TO WHOM IT MAY CONCERN

This is to certify that Md Nazmul Huda has served as an Intern at the Network Operation Center (NOC) of Triangle Services Ltd from 7th June 2021 to 7th September 2021. His performance and attendance were regular and satisfactory. During this period he adhered to all the rules and regulations of Triangle Services Ltd and did not take part in any non-disciplinary activities to my knowledge.

I wish him every success in his life.

Sincerely,

A handwritten signature in black ink, appearing to read "Sajib Nandi", with a horizontal line underneath.

Sajib Nandi
Sr. Network Engineer
Triangle Services Limited | ASN45766

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