Internship of Computer Networking

BY

Md. Maruful Islam
ID: 201-15-13775

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

Supervised By

Most. Hasna Hena
Assistant Professor
Department of CSE
Daffodil International University

Co-Supervised By

Ms. Nishat Sultana
Lecturer
Department of CSE
Daffodil International University

DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

JANUARY 2023

APPROVAL

This Project titled **Internship of Computer Networking**, submitted by **MD Maruful 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 it's style and contents. The presentation has been held on 19th January 2023
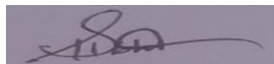
BOARD OF EXAMINERS

Dr. Touhid Bhuiyan   **Chairman**
Professor and Head
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Subhenur Latif   **Internal Examiner**
Assistant Professor
Department of Computer Science and Engineering
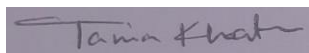Faculty of Science & Information Technology
Daffodil International University

Tania Khatun   **Internal Examiner**
Assistant Professor
Department of Computer Science and Engineering
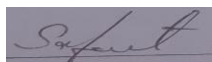Faculty of Science & Information Technology
Daffodil International University

Md. Safayet Hossain   **External Examiner**
Assistant Professor & Head
Department of Computer Science and Engineering
City University
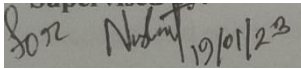
DECLARATION

I hereby declare that, this internship report has been done by **MD. Maruful Islam** ID No: 201-15-13775 to the department of Computer Science and Engineering, Daffodil International University. Under the supervision of **Most. Hasna Hena**, **Assistant Professor Department of CSE**, Daffodil International University.
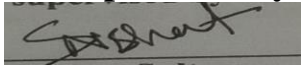
I also declare that neither this internship report nor any part of this internship report has been submitted elsewhere for award of any degree or diploma. And also I declare that, I collect Shell Technology, Data Center, Books and Internet.
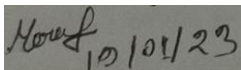
Supervised by:

Most. Hasna Hena
Assistant Professor
Department of CSE
Daffodil International University

Co-Supervised By

Ms. Nishat Sultana
Lecturer
Department of CSE
Daffodil International University

Submitted by:

MD Maruful Islam
ID: 201-15-13775
Department of CSE
Daffodil International University

ACKNOWLEDGEMENT

In the first place I express heartiest thanks and thankfulness to Allah for His celestial gift makes us deducible to finish the Final year internship effectively. I am appreciative to **Shatabdi Chanda,** General Manager Shell Technology. Without his constant help I can't precede with my Internship in the organization. Different individuals from the organization helped me immensely to do my Internship.

I really grateful and wish our profound our indebtedness to **Ms. Most. Hasna Hena**, **Assistant Professor**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of IT and Network Administration 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 extend my heartfelt thanks to **Dr. Touhid Bhuiyan**, **Professor and Head of the CSE Department**, for his kind support in completing my internship, as well as to other faculty members and staff of the 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 would like to express my gratitude and respect my presents who have helped me come this far and protected me from all dangers.

ABSTRACT

First of all I want to thank Allah, I learned a lots of things of this internship, In this reports, I show what I did and what I learned one by one internship. How on a computer use network do work I also learned. In this internship, I have been designed and implemented a strong secured computer network. For a company. I have used Static routing, RIPv1, RIPv2, EIGRP, OSPF, VLSM, VLAN, cisco routers and switches and firewalls to implement and configured the network. I have been studied the types of threats a computer network may face and their implication on the performance of a computer network. I configure the firewalls with access control list (ACL) such that unauthorized access to the network can be minimized. I have used cisco packet tracer to simulate the design and the configurations of the network.

TABLE OF CONTENTS

List of Figure   **Page No**

CHAPTER 1

Introduction

1.1 Introduction

Networking is the single medium through which we can send data and communicate from one device to another. Networking connect computers electronically for the Sharing as file information. The advantage of networking have some terms of security, efficiency and cost effectiveness between user and networking.Network have some component computer, routers, hub, switches and some other important device to connect one device to other device. There have 3 type of computer networking. We use out industry, office, university etc. most 2 common network are LAN (Local area network), WAN (Wide area network). LAN normally use for short distance like home, school, college at office etc. Man use wide area than LAN, like cities to cities, one area to other area. LAN can connect together to form a WAN. A lots of computer and device connect to network and we ensure data collision does not happened.

1.2 Motivation

Computer networking is the biggest means of network data communication in this modern world. The internship taught me how to work with networks in any office or other sector. This internship has perfected me to work with computer networking and networking with other corporate sectors.This internship is teaching me to work 6 to 7 hours and is a great experience for me to work 6 to 7 hours. It is a big achievement at the end of my studies. Internship is a kind of work, we can work there like other employees The 3 month's internship taught me a great opportunity for my next job in life and will benefit me a lot.

1.3 Internship Objectives

Listed below are interesting training resume skills:

- ➢ It help me to build up like a professional employer.
- ➢ This makes me a perfect leader of any team.
- ➢ I get the best knowledge about IT and networking.
- ➢ I get more knowledge how to network work in the any corporate office.
- ➢ I also get the way how to implement my professional skill in my work life.
- ➢ Now , I know what is my responsibilities are in the IT section of any office

1.4 Introduction to the Company

My internship company name is Shell Technologies. Shell Technologies works with the Department of Urban Development, Govt. The work of the Department of UrbanDevelopment is to make master plans for the development of different regions of Bangladesh. The Department of Urban Development is responsible for all development structures and master plans of any city in Bangladesh. This department supervises the activities of other departments of the city. Coordinates work with departments particularly involved in urban development. The Department of Urban Development was established on 17 July 1965, the development project was taken up, then in July 1983, there was the Department of Urban Development and finally in 1983, Urban Development was established under the leadership of Brigadier General Enamul Haque Khan. [5]

1.5 Report Layout

- ➢ **In the chapter (1)** Include chapter 1 introduction, motivation, internship object and introduction to the company

- ➢ **In the chapter (2)** Add in chapter 2 the company introduction, Services and Market Situation, SWOT Analysis and Organizational Structure.

- ➢ **In the chapter (3)** Showed chapter 3 how to exercises, Events and work of internship

- ➢ **In the chapter (4)** Include chapter 4 Competencies Earned, Smart Plan, and Reflections

- ➢ **In the chapter (5)** Chapter 5 Conclusion , Future Scope , reference and appendix

CHAPTER 2
Internship Organization

2.1 Company Introduction

My internship company shell technology is consultant farm. My company work with different govt department that is PWB, UDD, and HBRI. I did my internship in Urban Development department as a shell technology employee. The Department of Urban Development was established on 17 July 1965, the development project was taken up, then in July 1983, there was the Department of Urban Development and finally in 1983, Urban Development was established under the leadership of Brigadier General Enamul Haque Khan.[5] The Department of Urban Development is responsible for all development structures and master plans of any city in Bangladesh.

This department supervises the activities of other departments of the city. Coordinates work with departments particularly involved in urban development. However, the Department of Urban Development does not have the authority to take action if any department works in defiance of this department.

2.2 Services and Market Situation

The department of Urban Development carries out many types of development work for development of urban areas. Some of the major works are mentioned below:

- ➢ Taking charge of all development structures and master plans of cities
- ➢ The department supervises the activities of other departments of the city
- ➢ Coordinating work with departments involved in urban development
- ➢ In order to involve the general public in building a planned city in Bangladesh, taking the initiative of mass promotion and dissemination including exchange of views with people of different classes and professions of the city.

- ➢ Develop hydrology master plan by test hydrology of the city.
- ➢ Develop geology master plan by test geology of the city.
- ➢ Doing data survey in that rural area before make structure plan.
- ➢ Go to the area and talk to the people there and make a master plan of what they need.

2.3 SWOT Analysis

Like others organization there have some own strengths, weaknesses and opportunities. This is discussed in details in the table below:

Strengths, weaknesses and opportunities

Strengths	Weaknesses	Opportunities
• This organization Develop rural areas of the country • The department supervises the activities of other departments of the city • Development is to make master plans for the development of different regions of Bangladesh	• Urban development plans but not implemented • Not being able to create an up-to-date urban development plan • Failure to sometimes take steps at the right time to beautify a city	• Ensuring proper development of human settlements. • Creates water and urban infrastructure • Includes transportation system, service management etc

2.4 Organizational Structure

In below fig 2.4 show the Organizational Structure of Urban Development Directorate.
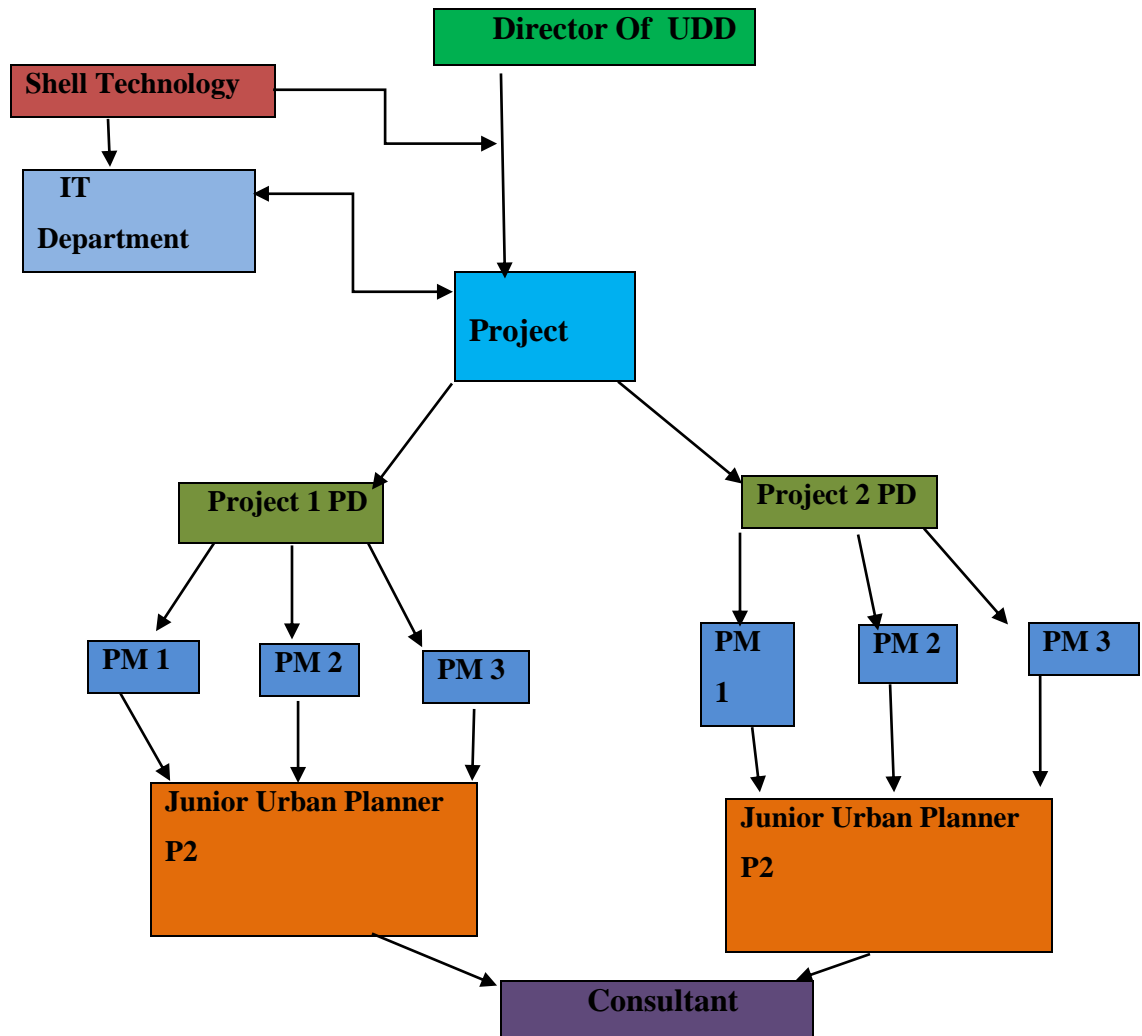
Figure: 2.4 Organizational Structure of Urban development Directorate.

They also develop the other project web page and provide all organization it instrument what the organization need.

2.5 Target Group

By moving quickly converting the world, all corporation and organization need to grow
Computer they need talent to stay aggressive and successful. Shell technology
Worked out a special mixing of abilities sets that are requested most in the present
Business market. To meet their targets shell technology moving forward with the
Right initiatives. Shell technology core business focus/segments:

- ➢ Solution the organization it problem.
- ➢ IT System Integration according to corporates requirements.
- ➢ Distribution of IT products.

CHAPTER 3

Internship Tasks and Activities

3.1 Daily Task and Activities

3.1.1 Static routing

A static route is a routing protocol in which each route must be manually declared   a route in the routing table. If you ever want to change the user network, you have to change all the routing data again. In case of static routing, the routing does not change automatically.

Design of Static Routing

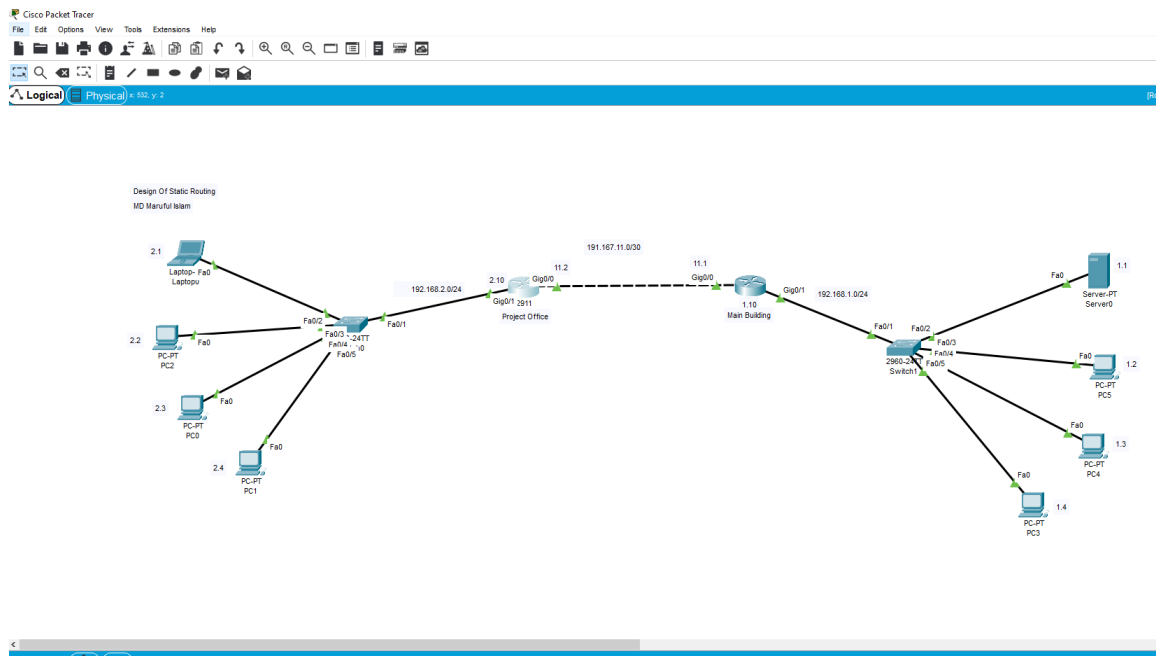In below fig 3.1.1 show the design of static routing

Fig: 3.1.1 static routing

Cisco command for static routing

For Router 1 (Main building) configuration command

Router1>enable

Router1#configuration t

Router1 (configuration)#hostna mainduilding

Mainbuilding(configuration)# inte gig0/1

Mainbuilding(configuration -interface)# Ip address 192.168.1.1 255.255.255.0

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration)# inte gig0/0

Mainbuilding(configuration -interface)# Ip address 192.167.11.1 255.255.255.252

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration -interface)# exit

Mainbuilding(configuration)# ip route 192.168.1.0 255.255.255.0 191.167.11.2

For Router 2 (Project Office) configuration command

Router1>enable

Router1# configuration t

Router1 (configuration)#hostna projectoffice

Projectoffice (configuration)# inte gig0/1

Projectoffice (configuration -interface)# Ip address 192.168.2.1 255.255.255.0

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration)# inte gig0/0

Projectoffice (configuration -interface)# Ip address 192.167.11.1 255.255.255.252

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration -interface)# exit

Projectoffice (configuration)# ip route 192.168.2.0 255.255.255.0 191.167.11.1

3.1.2 RIPv1 Routing

RIPv1 is a Distant-vector-routing protocol. RIPv1 is a class full protocol. The class full routing protocol only supports networks that are not subnetted. IP addresses that are not actually subnetted are called class full network. Like /8, /16/ and /24 are used.

Design of RIPv1 Routing

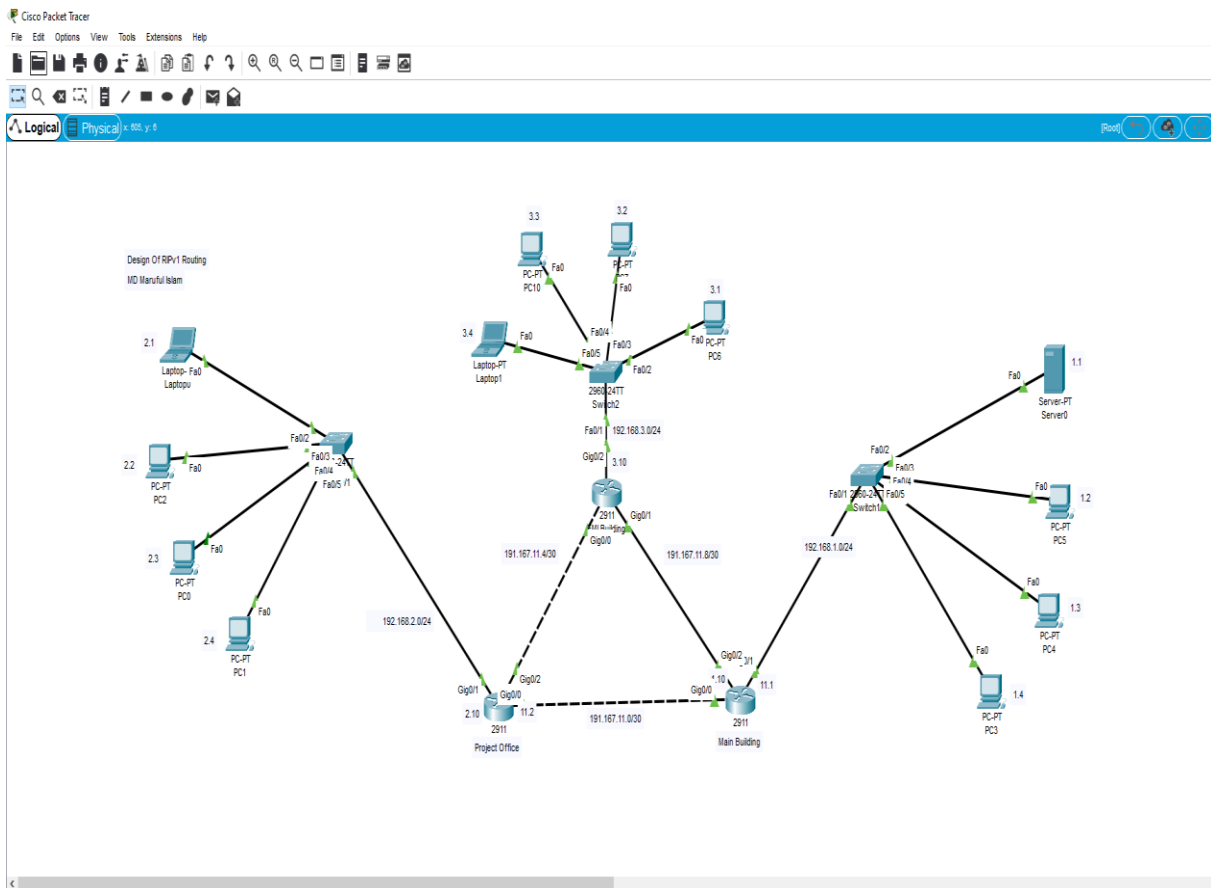In below fig 3.1.2 show the design of RIPv1 routing

Fig: 3.1.2 RIPv1 routing

Cisco command for RIPv1 routing

For Router 1 (Main building) configuration command

Router1>enable

Router1# configuration t

Router1 (configuration)#hostna mainduilding

Mainbuilding(configuration)# inte gig0/1

Mainbuilding(configuration -interface)# Ip address 192.168.1.1 255.255.255.0

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration)# inte gig0/0

Mainbuilding(configuration -interface)# Ip address 192.167.11.1 255.255.255.252

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration -interface)# exit

Mainbuilding(configuration)# inte gig0/2

Mainbuilding(configuration -interface)# Ip address 192.167.11.10 255.255.255.252

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration)# router rip v1

Mainbuilding(configuration - router)# network 192.168.1.0

Mainbuilding(configuration - router)# network 192.167.11.8

Mainbuilding(configuration - router)# network 192.167.11.0

For Router 2 (Project Office) configuration command

Router1>enable

Router1# configuration t

Router1 (configuration)#hostname projectoffice

Projectoffice (configuration)# inte gig0/1

Projectoffice (configuration -interface)# Ip address 192.168.2.10 255.255.255.0

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration)# inte gig0/0

Projectoffice (configuration -interface)# Ip address 192.167.11.2 255.255.255.252

Projectoffice (configuration -if)# no shutdown

Projectoffice (configuration)# inte gig0/2

Projectoffice (configuration -interface)# Ip address 192.167.11.15 255.255.255.252

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration -interface)# exit

Projectoffice (configuration)# router rip v1

Projectoffice (configuration - router)# network 192.168.2.0

Projectoffice (configuration - router)# network 192.167.11.0

Mainbuilding(configuration - router)# network 192.167.11.4

For Router 3 (EMI building) configuration command

Router1>enable

Router1# configuration t

Router1 (configuration)#hostna EMIbuilding

EMIbuilding (configuration)# inte gig0/1

EMIbuilding (configuration –interface)# Ip address 192.167.11.9 255.255.255.252

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration)# inte gig0/0

EMIbuilding (configuration -interface)# Ip address 192.167.11.6 255.255.255.252

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration)# inte gig0/2

EMIbuilding (configuration -interface)# Ip address 192.168.3.10 255.255.255.0

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration -interface)# exit

EMIbuilding (configuration)# router rip v1

EMIbuilding (configuration - router)# network 192.168.3.0

EMIbuilding (configuration - router)# network 192.167.11.4

EMIbuilding (configuration - router)# network 192.167.11.8

3.1.3 RIPv2 Routing

RIPv2 is a class full and class less both protocol. The class full and class less both routing protocol supports networks that are not subnetted and subnetted network. IP addresses that are actually subnetted are called class less network Like /25, /18/ and /27 are used.

Design of RIPv2 Routing

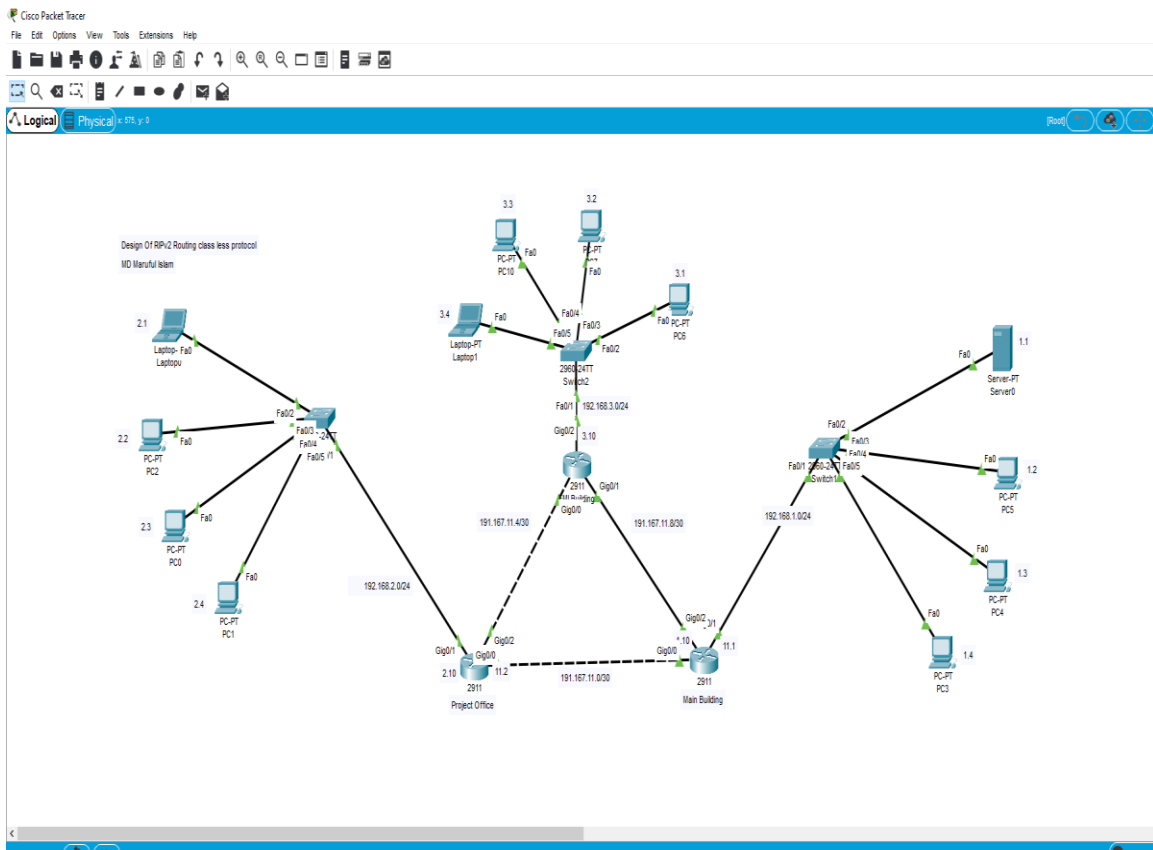In below fig 3.1.3 show the design of RIPv2 routing.

Fig: 3.1.3 RIPv2 routing

Cisco command for RIPv2 routing

For Router 1 (Main building) configuration command

Router1>enable

Router1# configuration t

Router1 (configuration)#hostna mainduilding

Mainbuilding(configuration)# inte gig0/1

Mainbuilding(configuration -interface)# Ip address 192.168.1.1 255.255.255.0

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration)# inte gig0/0

Mainbuilding(configuration -interface)# Ip address 192.167.11.1 255.255.255.252

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration -interface)# exit

Mainbuilding(configuration)# inte gig0/2

Mainbuilding(configuration -interface)# Ip address 192.167.11.10 255.255.255.252

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration)# router rip v2

Mainbuilding(configuration - router)# network 192.168.1.0

Mainbuilding(configuration - router)# network 192.167.11.8

Mainbuilding(configuration - router)# network 192.167.11.0

For Router 2 (Project Office) configuration command

Router2>enable

Router2# configuration t

Router2 (configuration)#hostna projectoffice

Projectoffice (configuration)# inte gig0/1

Projectoffice (configuration -interface)# Ip address 192.168.2.10 255.255.255.0

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration)# inte gig0/0

Projectoffice (configuration -interface)# Ip address 192.167.11.2 255.255.255.252

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration)# inte gig0/2

Projectoffice (configuration -interface)# Ip address 192.167.11.15 255.255.255.252

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration -interface)# exit

Projectoffice (configuration)# router rip v2

Projectoffice (configuration - router)# network 192.168.2.0

Projectoffice (configuration - router)# network 192.167.11.0

Projectoffice (configuration - router)# network 192.167.11.4

For Router 3 (EMI building) configuration command

Router3>enable

Router3# configuration t

Router3 (configuration)#hostna EMIbuilding

EMIbuilding (configuration)# inte gig0/1

EMIbuilding (configuration -interface)# Ip address 192.167.11.9 255.255.255.252

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration)# inte gig0/0

EMIbuilding (configuration -interface)# Ip address 192.167.11.6 255.255.255.252

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration)# inte gig0/2

EMIbuilding (configuration -interface)# Ip address 192.168.3.10 255.255.255.0

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration -interface)# exit

EMIbuilding (configuration)# router rip v2

EMIbuilding (configuration - router)# network 192.168.3.0

EMIbuilding (configuration - router)# network 192.167.11.4

EMIbuilding (configuration - router)# network 192.167.11.8

3.1.4 EIGRP Routing

EIGRP is the full form of Enhanced Interior Gateway Routing Protocol.

This is a protocol that actually carries the characteristics of a link state routing protocol and It again has many features of distance vector routing protocol. All in all we can call EIGRP a hybrid routing protocol. EIGRP protocol count minimum 100 hop and maximum 255 hop.

Design of EIGRP Routing

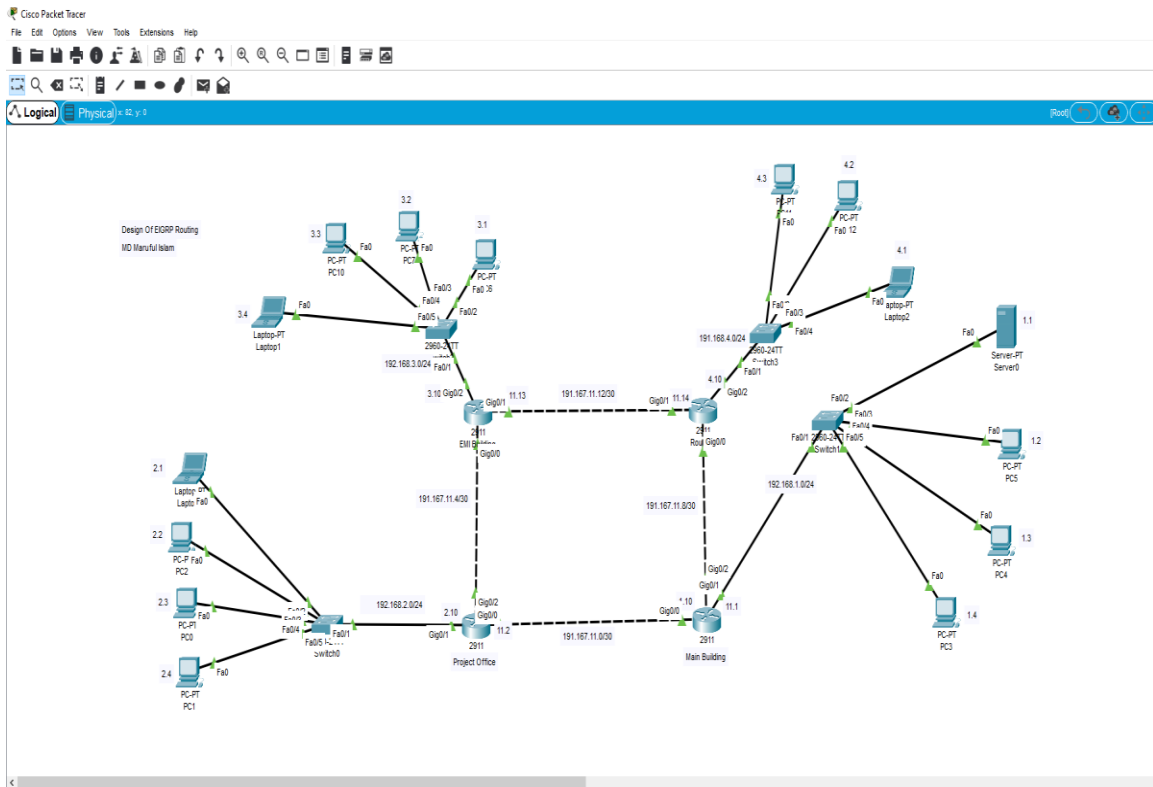In below fig 3.1.4 show the design of EIGRP routing.

Fig: 3.1.4 EIGRP routing

Cisco command for EIGRP routing

For Router 1 (Main building) configuration command

Router1>enable

Router1# configuration t

Router1 (configuration)#hostna mainduilding

Mainbuilding(configuration)# inte gig0/1

Mainbuilding(configuration -interface)# Ip address 192.167.11.9 255.255.255.252

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration)# inte gig0/0

Mainbuilding(configuration -interface)# Ip address 192.167.11.2 255.255.255.252

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration -interface)# exit

Mainbuilding(configuration)# inte gig0/2

Mainbuilding(configuration -interface)# Ip address 192.168.1.1 255.255.255.0

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration)# router eigrp 10

Mainbuilding(configuration -router)# network 192.168.1.0

Mainbuilding(configuration - router)# network 192.167.11.0

Mainbuilding(configuration - router)# network 192.167.11.8

For Router 2 (Project Office) configuration command

Router2>enable

Router2# configuration t

Router2 (configuration)#hostna projectoffice

Projectoffice (configuration)# inte gig0/1

Projectoffice (configuration -interface)# Ip address 192.168.2.10 255.255.255.0

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration)# interface gig0/0

Projectoffice (configuration -interface)# Ip address 192.167.11.2 255.255.255.252

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration)# inte gig0/2

Projectoffice (configuration -interface)# Ip address 192.167.11.15 255.255.255.252

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration -interface)# exit

Projectoffice (configuration)# router eigrp 20

Projectoffice (configuration - router)# network 192.168.2.0

Projectoffice (configuration - router)# network 192.167.11.0

Projectoffice (configuration - router)# network 192.167.11.4

For Router 3 (EMI building) configuration command

Router3>enable

Router3# configuration t

Router3 (configuration)#hostna EMIbuilding

EMIbuilding (configuration)# inte gig0/1

EMIbuilding (configuration -interface)# Ip address 192.167.11.9 255.255.255.252

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration)# inte gig0/0

EMIbuilding (configuration -interface)# Ip address 192.167.11.6 255.255.255.252

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration)# inte gig0/2

EMIbuilding (configuration -interface)# Ip address 192.168.3.10 255.255.255.0

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration -interface)# exit

EMIbuilding (configuration)# router eigrp 30

EMIbuilding (configuration - router)# network 192.168.3.0

EMIbuilding (configuration - router)# network 192.167.11.4

EMIbuilding (configuration - router)# network 192.167.11.8

For Router 4 (PURTA building) configuration command

Router4>enable

Router4# configuration t

Router4 (configuration)#hostna EMIbuilding

PURTAbuilding (configuration)# inte gig0/1

PURTAbuilding (configuration -interface)# Ip address 192.167.11.14 255.255.255.252

PURTAbuilding (configuration -interface)# no shut

PURTAbuilding (configuration)# inte gig0/0

PURTAbuilding (configuration -interface)# Ip address 192.167.11.10 255.255.255.252

PURTAbuilding (configuration -interface)# no shut

PURTAbuilding (configuration)# inte gig0/2

PURTAbuilding (configuration -interface)# Ip address 192.168.4.10 255.255.255.0

PURTAbuilding (configuration -interface)# no shut

PURTAbuilding (configuration -interface)# exit

PURTAbuilding (configuration)# router eigrp 40

PURTAbuilding (configuration - router)# network 192.168.4.0

PURTAbuilding (configuration - router)# network 192.167.11.12

PURTAbuilding (configuration - router)# network 192.167.11.8

3.1.5 OSPF Routing

OSPF full form open shortest path first. OSPF's proprietary Short Path First is a link state routing protocol based on open numbers based on browser pendency. It gives unlimited hope count. This routing is widely used.

Design of OSPF Routing

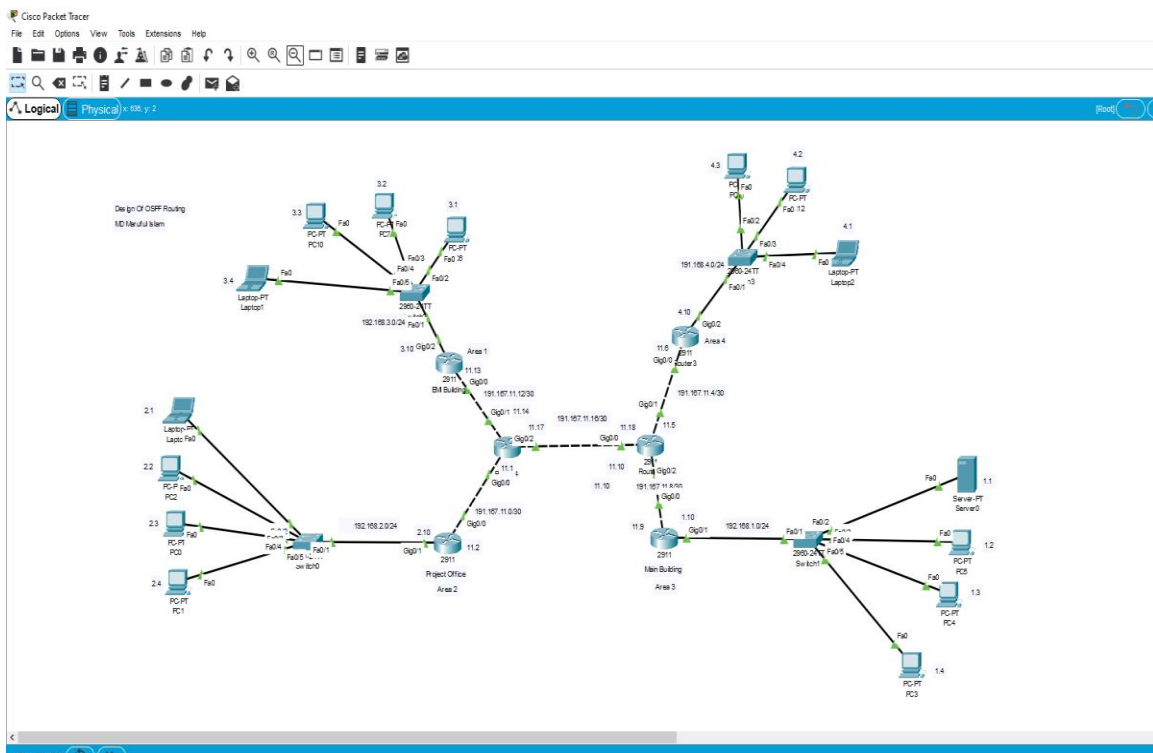In below fig 3.1.5 show the design of OSPF routing.

Fig: 3.1.5 OSPF routing

Cisco command for OSPF routing

For Router 1 (Main building) configuration command

Router1>enable

Router1# configuration t

Router1 (configuration)#hostna mainduilding

Mainbuilding(configuration)# inte gig0/0

Mainbuilding(configuration -interface)# Ip address 192.167.11.9 255.255.255.252

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration -interface)# exit

Mainbuilding(configuration)# inte gig0/1

Mainbuilding(configuration -interface)# Ip address 192.168.1.1 255.255.255.0

Mainbuilding(configuration -interface)# no shut

Mainbuilding(configuration)# router ospf 1

Mainbuilding(configuration -router)# network 192.168.1.0 0.0.0.255 area 3

Mainbuilding(configuration - router)# network 192.167.11.8 0.0.0.3 area 3

For Router 2 (Project Office) configuration command

Router2>enable

Router2# configuration t

Router2 (configuration)#hostna projectoffice

Projectoffice (configuration)# inte gig0/1

Projectoffice (configuration -interface)# Ip address 192.168.2.10 255.255.255.0

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration)# inte gig0/0

Projectoffice (configuration -interface)# Ip address 192.167.11.1 255.255.255.252

Projectoffice (configuration -interface)# no shut

Projectoffice (configuration -interface)# exit

Projectoffice (configuration)# router ospf 2

Projectoffice (configuration - router)# network 192.168.2.0 0.0.0.255 area 2

Projectoffice (configuration - router)# network 192.167.11.0 0.0.0.3 area 2

For Router 3 (EMI building) configuration command

Router3>enable

Router3# configuration t

Router3 (configuration)#hostna EMIbuilding

EMIbuilding (configuration)# inte gig0/0

EMIbuilding (configuration -interface)# Ip address 192.167.11.13 255.255.255.252

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration)# inte gig0/2

EMIbuilding (configuration -interface)# Ip address 192.168.3.10 255.255.255.0

EMIbuilding (configuration -interface)# no shut

EMIbuilding (configuration -interface)# exit

EMIbuilding (configuration)# router ospf 3

EMIbuilding (configuration - router)# network 192.168.3.0 0.0.0.255 area 1

EMIbuilding (configuration - router)# network 192.167.11.12 0.0.0.3 area 1

For Router 4 (PURTA building) configuration command

Router4>enable

Router4# configuration t

Router4 (configuration)#hostna EMIbuilding

PURTAbuilding (configuration)# inte gig0/0

PURTAbuilding (configuration -interface)# Ip address 192.167.11.6 255.255.255.252

PURTAbuilding (configuration -interface)# no shut

PURTAbuilding (configuration)# inte gig0/2

PURTAbuilding (configuration -interface)# Ip address 192.168.4.10 255.255.255.0

PURTAbuilding (configuration -interface)# no shut

©Daffodil International University   30

PURTAbuilding (configuration -interface)# exit

PURTAbuilding (configuration)# router ospf 4

PURTAbuilding (configuration - router)# network 192.168.4.0 0.0.0.255 area 4

PURTAbuilding (configuration - router)# network 192.167.11.4 0.0.0.3 area 4

For Router 5 (ISP) configuration command

Router5>enable

Router5# configuration t

Router5 (configuration)#hostna isp

ISP (configuration)# inte gig0/0

ISP (configuration -interface)# Ip address 192.167.11.1 255.255.255.252

ISP (configuration -interface)# no shut

ISP (configuration -interface)# exit

ISP (configuration)# inte gig0/1

ISP (configuration -interface)# Ip address 192.167.11.14 255.255.255.252

ISP (configuration -interface)# no shut

ISP (configuration)# inte gig0/2

ISP (configuration -interface)# Ip address 192.167.11.17 255.255.255.252

ISP (configuration -interface)# no shut

ISP (configuration)# router ospf 5

ISP (configuration -router)# network 192.167.11.0 0.0.0.3 area 2

ISP (configuration - router)# network 192.167.11.12 0.0.0.3 area 1

ISP (configuration - router)# network 192.167.11.16 0.0.0.3 area 6

For Router 6 (ISP) configuration command

Router6>enable

Router6# configuration t

Router6 (configuration)#hostna isp

ISP (configuration)# inte gig0/0

ISP (configuration -interface)# Ip address 192.167.11.18 255.255.255.252

ISP (configuration -interface)# no shut

ISP (configuration -if)# exit

ISP (configuration)# inte gig0/1

ISP (configuration -interface)# Ip address 192.167.11.5 255.255.255.252

ISP (configuration -if)# no shut

ISP (configuration)# inte gig0/2

ISP (configuration -interface)# Ip address 192.167.11.10 255.255.255.252

ISP (configuration -interface)# no shut

ISP (configuration)# router ospf 5

ISP (configuration -router)# network 192.167.11.16 0.0.0.3 area 5

ISP (configuration - router)# network 192.167.11.8 0.0.0.3 area 3

ISP (configuration - router)# network 192.167.11.4 0.0.0.3 area 4

3.1.6 VLAN

VLAN full form Virtual local area network.VLAN is a type of technology that allows computers connected to a switch to be logically divided into multiple groups and treated as separate LANs. That means physically there will be only one switch but logically it will act as multiple switches.
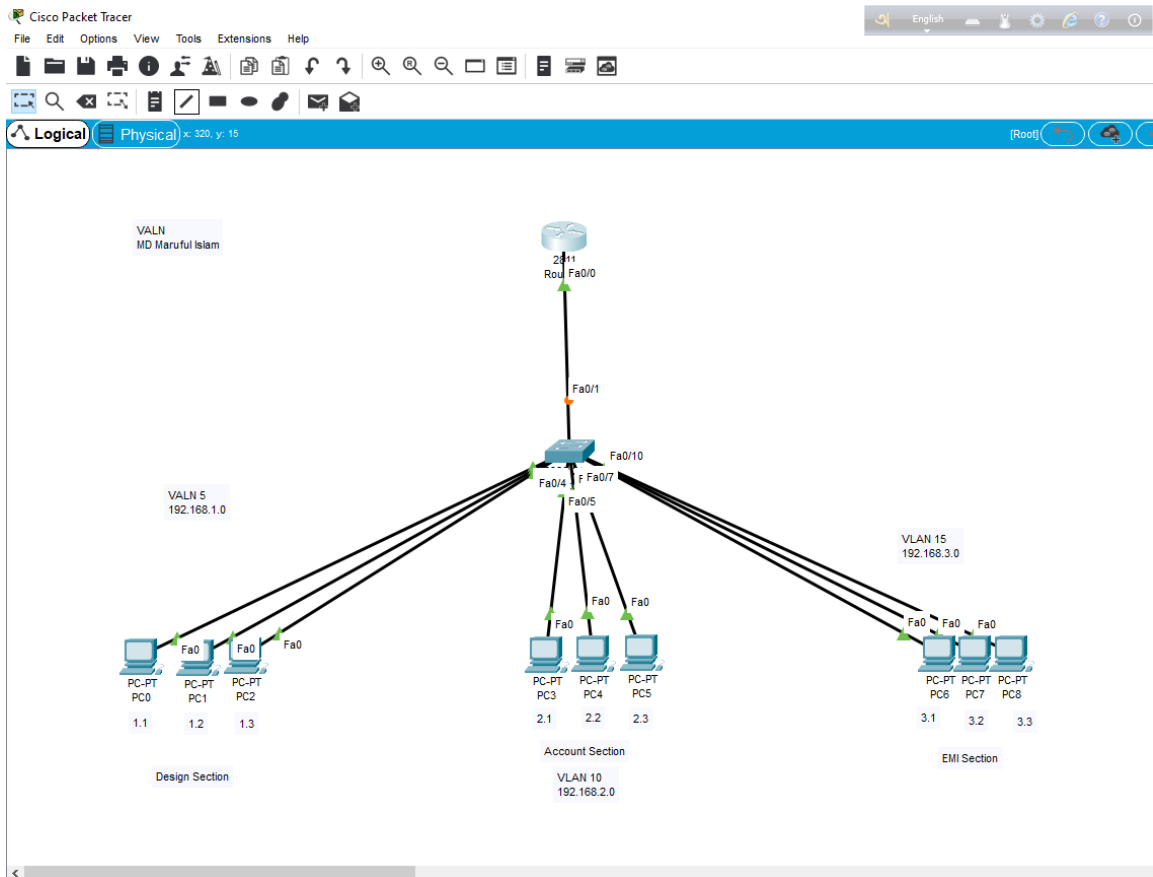
In below fig 3.1.6 show the design of VLAN

Fig: 3.1.6 VLAN

Command of VALN configuration

Switch configuration Command

Switch>enable

Switch# configuration t

Switch(configuration)#vlan 5

Switch(configuration -vlan)# name designSection

Switch(configuration -vlan)#exit

Switch(configuration)#vlan 10

Switch(configuration -vlan)# name accountSection

Switch(configuration -vlan)#exit

Switch(configuration)#vlan 15

Switch(configuration -vlan)# name emiSection

Switch(configuration -vlan)#exit

Switch(configuration)# int fa0/2

Switch(configuration -vlan)# switport access vlan 5

Switch(configuration -vlan)#exit

Switch(configuration)# int fa0/3

Switch(configuration -vlan)# switport access vlan 5

Switch(configuration -vlan)#exit

Switch(configuration)# int fa0/4

Switch(configuration -vlan)# switport access vlan 5

Switch(configuration -vlan)#exit

Switch(configuration)# int fa0/5

Switch(configuration -vlan)# switport access vlan 10

Switch(configuration -vlan)#exit

Switch(configuration)# int fa0/6

Switch(configuration -vlan)#switport access vlan 10

Switch(configuration -vlan)#exit

Switch(config)# int fa0/7

Switch(configuration -vlan)#switport access vlan 10

Switch(configuration -vlan)#exit

Switch(configuration)# int fa0/8

Switch(configuration -vlan)#switport access vlan 15

Switch(configuration -vlan)#exit

Switch(configuration)# int fa0/9

Switch(configuration -vlan)#switport access vlan 15

Switch(configuration -vlan)#exit

Switch(configuration)# int fa0/10

Switch(configuration -vlan)#switport access vlan 15

Switch(configuration -vlan)#exit

Switch(configuration)# int fa0/1

Switch(configuration -vlan)#switport mode trunk

Switch(configuration -vlan)#exit

Switch(configuration)# int range 2-4

Switch(configuration -vlan)#switport mode access

Switch(configuration -vlan)#exit

Switch(configuration)# int range 5-7

Switch(configuration -vlan)#switport mode access

Switch(configuration -vlan)#exit

Switch(configuration)# int range 8-10

Switch(configuration -vlan)#switport mode access

Switch(configuration -vlan)#do wr

CHAPTER 4

Competencies and Smart Plan

4.1 Competencies Earned

I have learn lots skills throughout the intern ship at Shell Technologies. I knew some before and learned some during this time. Notable skills are configuring routers, configuring networks and computer programming routers and finally configuring network operating systems under the mentorship of sales technology experts. The most important for me was router configuring and LAN and WAN connection in this internship.

4.2 Smart Plan

Shell technology works much planned manner in their networking. To provide excellent Service to the customers has created excellent networking service Throughout the process of their include government office. All organization should focus on their networking service As it helps an organization to become more efficient in their entire organization.

4.3 Reflections

Shell technology work with ministry of public works and housing. Shell technology a service provider for the ministry all office include Urban development directorate and commerce facilities in the ministry. As ours is developing country we have a lot of government office and those ventures need support. While providing services to these different office t needs excellent network configuration and maintenance of the service. Urban Development directorate provides service to the most reputed organizations in the country and has earned reputation in this sector. The Urban development directorate entire system maintained shell technology with corporate network.

CHAPTER 5

Conclusion and Future Career

5.1 Discussion and Conclusion

In this internship process I learn that passion for the work makes the learning faster than the time we put in the work. If we love the work or we have the passion to work in networking the time we put for the work will not be the hindrance for the amount of learning. I worked 8 hours a day in urban development directorate as a shell technology guy. I enjoyed working in the IT department. They are very amiable and the work environment in this office is very friendly. In such a short period of time I learned a lots of things.

5.2 Scope for Further Career

Career opportunity are massive in this networking under Linux programming. As our country is mobbing towards the digital era and it is super helpful for us as CSE students because career openings are wide. We can join in the IT departments of any organization for our wide learnings in this field

References

Websites:

[1]. Shell technology information available at << https://shelltechnologiesbd.com/>> at access 1-8-2022 at 11:00 am

[2] Packet tracer download software Cisco Packet tracer-networking simulation tool<<(https://www.netacad.com/)>> last access 7-11-2022 at 12:15 pm

[3] Learn about subnetting, available at <<https://www.techopedia.com/definition/28328/subnetting/>>, last access 7-9- 2022 at 12:05 PM.

[4] Switch concept << (https://www.geeksforgeeks.org/)>> last access 11-10-2022 at 2:20 pm

[5] Component of networking instrument << (http://www.udd.gov.bd/)>> last access 19-10-2022 at 9:30 am

[6] Configure analysis << (https://members.ipcert.it/forum/routing/3178-laboratorio-ospf-8-2-4-5.html)>> access 22-10-2022 at 11:23 am

Appendices

APPENDIX

A: Internship Reflection: It's easy for me to find the internship as a learning experience. However, more work will be need to find the positive and negative things of the experience. Understanding my workplace preferences clarifies what I want more and what I want to ignore next time, and my chances of identify out what is next are importance higher. One way to explain an internship is first to break it down into its key components. Then consider each element's value.

Appendix B: Company Details

Shell Technologies

Address: 100, Alishan Complex, Elephant Road, Elephant Rd, Dhaka 1205[1]

Operating hours: Saturday to Thursday, from 9 AM to 8 PM (Day Off: Friday)

Corporate Office: Segunbagicha 83, PCJ4+F43, Dhaka 1205, Bangladesh.[5]

Operating hours: Sunday to Thursday, from 9 AM to 4 PM (Day Off: Friday and Saturday)

Phone: +8801882-581470 [1]

Email: info@shelltecnologiesbd.com [1]

Turnitin Originality Report

Processed on: 10-Jan-2023 09:59 +06
ID: 1990558090
Word Count: 3734
Submitted: 1

report_maruf By Hasna Hena

4% match (Internet from 13-Feb-2014)

Similarity Index	Similarity by Source	
26%	Internet Sources:	24%
	Publications:	15%
	Student Papers:	9%

http://www.coursehero.com/file/6079244/71356-Instructor-Edition-CCNA2/

2% match (Internet from 22-Oct-2020)
http://dspace.daffodilvarsity.edu.bd:8080/handle/123456789/4012?show=full

2% match (Internet from 20-Nov-2022)
https://www.cisco.com/c/nl_nl/support/docs/security/asa-5500-x-series-next-generation-firewalls/113305-asa83-mailserver-outside.pdf

2% match (Internet from 16-Nov-2022)
https://ebin.pub/cisco-ccip-mpls-study-guide-0-7821-4096-3.html

2% match (student papers from 30-Mar-2020)
Submitted to University of Western Macedonia on 2020-03-30

2% match (student papers from 19-May-2018)
Submitted to Victoria University on 2018-05-19

1% match (Internet from 20-Nov-2022)
http://dspace.daffodilvarsity.edu.bd:8080/bitstream/handle/123456789/5367/172-15-10029%20%2819%25%29.pdf?isAllowed=y&sequence=1

1% match (student papers from 22-Apr-2022)
Submitted to Daffodil International University on 2022-04-22

1% match (student papers from 02-Apr-2019)
Submitted to Daffodil International University on 2019-04-02

1% match (Internet from 11-Mar-2020)
https://members.ipcert.it/forum/routing/3178-laboratorio-ospf-8-2-4-5.html

1% match (Internet from 03-Nov-2012)
http://www.happyboy.net.cn/article.asp?id=124

1% match (Internet from 17-Dec-2022)
https://networkengineering.stackexchange.com/questions/33328/firewall-to-network-connection-inside-outside?rq=1

1% match (Internet from 12-Dec-2022)
https://community.cisco.com/t5/switching/modify-priority-of-a-packet-tcp-for-a-given-ip/td-p/1948826

1% match (Internet from 23-Jul-2022)
https://www.slideserve.com/mahola/multi-area-ospf

< 1% match (Internet from 27-Dec-2022)
http://dspace.daffodilvarsity.edu.bd:8080/bitstream/handle/123456789/3903/P14334%20%2823_%29.pd
isAllowed=y&sequence=1

< 1% match (Internet from 20-Nov-2022)
http://dspace.daffodilvarsity.edu.bd:8080/bitstream/handle/123456789/5472/172-15-10127%20%2824%25%29.pdf?isAllowed=y&sequence=1

file:///C:/Users/88018/Desktop/New folder/Turnitin_Originality_Report_Maruf.html