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| Photo displaying partial image of two pie charts on a canvas-textured page |
| Clear Thinking Clinic  Presented by SWAN HTET PHYO |
| |  |  |  | | --- | --- | --- | | NVL Institute |  | Computer Networks | |



**NCC Education**

**LEVEL 4 DIPLOMA IN COMPUTING**

**COMPUTER NETWORKS**

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| Centre Name : NVL INSTITUTE  Assignment Title :CLEAR THINKING CLINIC  Exam Cycle : DECEMBER 2018  Candidate Name : SWAN HTET PHYO  NCC Education ID No :XXXXXX  Submission Date :31.Oct.2018 |
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# INTRODUCTION

My name is Swan Htet Phyo. I am university student and attending school is NVL institute. The assignment enables us to suggest our knowledge and understanding of computer networks. This we are required to produce a substantial document that totals 3000 words.

# ACKNOWLEDGEMENT

Thank you…………..

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TASK-1

# Task1: Network Infrastructure and Protocols

## (a)

## (b) OSI 7-layer Model

Network architecture is frequently described in terms of the OSI 7-layer model. The purpose of each of the 7 layers.

The OSI Seven Layer Model

* Physical
* Data Link
* Network
* Transport
* Session
* Presentation
* Application

**Physical Layer**

The physical layer is also called as the layer 1. There are the basal functional of the physical layer;

* Hardware layer of the OSI layer
* Devices like repeater ,hub, cables, Ethernet work on this layer

**Data Link Layer**

The data link layer is also called as the layer2 of the OSI model. There are he basal function of the Data link layer;

* Responsible for encoding and decoding of the electrical signals into bits
* Manages data errors from the physical layer

**Network Layer**

The network layer is called as the layer 3 of the OSI model. There are the basal functionalities of the network layer;

* Switching and routing technologies work here
* Routes the data packet to destination

**Transport Layer**

The transport layer is also called as the layer 4 of the OSI model. There are the basal functionalities of the Transport Layer;

* Responsible for complete for complete data transfer
* Responsible for end –to- end error recovery and flow control

**Session Layer**

The session layer is also called as the layer 5 of the OSI model. There are the basal functionalities of the Session Layer;

* It deals with session and connection coordination
* Protocols like NFS, NetBIOS name, RPC,SOL work at this layer

**Presentation Layer**

The presentation layer is called as the layer 6 of the OSI model. There are the basal functionalities of the Presentation layer;

* Responsible for data representation on your screen
* Data semantics and syntax

**Application Layer**

The application layer is called as the layer 7 of the OSI model. There are the basal functionalities of the Application Layer;

* Quality of service
* Protocols like Telnet, FIP, and HTTP work on this layer.

**(c) Seven Protocol**

Some common protocols are,

* HTTP
* UDP
* IP
* SMTP
* FTP
* POP3
* DHCP

**HTTP (Data link layer)**

Hypertext Transfer Protocol is an application protocol .HTTP is the foundation of data communication for World Wide Web. This protocol is hyperlinks to other resources that the user can easily access. HTTP functions as a request response protocol in the client server computing model. It protocol is provide a general framework for access control and authentication.

**UDP (Transport Layer)**

User Datagram Protocol is the internet protocol. This is part of programs running on different computers on a network. This protocol is carries layer communication protocol. The protocol assumes that error-checking and correction is not required. UDP is broadness used in video conferencing and real-time computer games.

**IP (Network layer)**

Internet Protocol is the primary protocol in the Internet Layer of the Internet Protocol Suite, which is set of communications protocols. It contain to used local network and internetworking .The connectionless protocol is means that the circuit to the receiver does not require be set up before transmission. This is the dominant protocol of the Internet.

**SMTP (Physical layer)**

Simple mail transfer protocol is part the application layer of the IP protocol. This protocol moves your email on and across networks. It works intimate with something named the Mail Transfer and MTA to transfer your communication to the aright computer and email inbox. SMTP is limited in its capability to queue mail at the end of receiving.

**FTP (Application layer)**

File transfer protocol is client-server protocol that relies on two communications channels between client and server. Clients start conversations with servers by claiming to download a file. This protocol is used to transfer files between a client and server on computer network. Web browsers can also serve as FTP clients.

**POP3 (Application layer)**

Post Office Protocol is the most soon version of a standard protocol for receiving e-mail. This standard protocol is built into most celebrity e-mail products. POP3 can be thought of as a store and forward service. This protocol allows email client to download and mail form mail server.

**DHCP (Application Layer)**

Dynamic Host Configuration Protocol is a network management protocol made to dynamically assign an IP address to any new node enters the network and the network administrators would be forced to assign IP address manually for every node in a network. They have two type of set Dynamic and static each connected devices.

## (d) Hub, Switch, Wireless Access Point, Router

+ TASK-2

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# Task 2: Addressing

## (a)Network Address and Host Address

## (b)Private IPV4 and Public IPV4 Address

**Public IPV4 Address**

A public IP address is an address that is assigned to a device that is connected to the internet. A public IP address could be assigned to a web server, an email server, or even an individual’s personal computer. It connects to allow another nodes and devices to locate it and establish a connection. Public IP addresses will be large scale and permission initially via ICANN (Internet Corporation for Assigned Names and Numbers). A statics public IP address does not change and it is used chiefly for hosting WebPages or services on the internet.

**Private IPV4 Address**

A private IP address is assigned to a device within a closed network and it is not true get to found for on the internet. IPV4 address is easy to understand a private IP address by explaining an actual scenario. Address you will use is assigned to the router. The devices on your network will communicate with each other using their private IP address. The private IP network is connected to the Internet. The number that you see against “192. 168.1.1 or 192.168.1.2. Unlike the public IP, there are always static in nature.

## (c)DHCP

Dynamic Host Configuration Protocol (DHCP) is a network management protocol. It is used to dynamically assign an IP address to any new node entering the network. DHCP is allowed a node to be configured automatically. DHCP means that are manages the provision all the nodes added from the network, maintains the require IP address of the host using a DHCP server, it sends a request to the DHCP server when a client, which is configured to work with DHCP, connects to a network.

## (d)Difference between IPV4 & IPV6

IPV4 is means Internet Protocol Version 4. It is used to identify devices on a network through an addressing system. The internet protocol is design for use in interconnected systems of packet-switched computer communication networks. IPV4 is the much widely start internet protocol used to connect things to the internet. With the develop of the internet it is await that the number of unused IPV4 addresses will run out because other device include game, smart phones, computers etc. That connects to the Internet needs an address. A new internet addressing system Internet protocol IPV6 is being start to full the required for more internet addresses. IPv6 is the successor to the internet protocol version IPv4. It was designed as an evolutionary upgrade to the internet, IPv6 is allow the internet to develop steadily and it both in terms of the number of host connected and it total many amount of data transmit.

## (e)Gateway

A gateway to the host network and provides remote network connectivity to a data communications device. A gateway device to a remote network or host network nodes that are out of bounds for a self-administered system communication load. Gateway Network serve as the entry and exit points, or outwardly loses all data first, and in order to use the routing path through the gateway to communicate with them. Generally, a router, a computer configured to operate as a network gateway device.

## (f)Subnet mask

A subnet mask, the number of components in a 32 or 128-bit is already in a TCP IP address. The network IP address representing the binary bits represented by the subnet mask 1 and lead the host representation -bits 0 sec. Using a subnet mask of having to deal with the entire 32-bit address to save Router; It is simply through the mask can be selected -bits.

## (g)IP Routing

IP to route data from its source to its destination, in order to travel across multiple networks to determine the path that follows a set of protocols that umbrella term. Through a series of routers and data across multiple networks is routed from its source to its destination. The coming of IP routing protocols are associated with addresses -hop last visit to enable the router to build a forwarding table.

TASK-3

# Task 3: Security

## (a)Three Main Security concepts

The three main security concepts are

1. Privacy
2. Integrity
3. Availability

Privacy- network privacy is network security; it is ability that only authorized users can access network services. Privacy is the can able of group and an individual themselves, information themselves, and express themselves selectively. Network privacy is transmitted data and do not can be accessed by unauthorised user and is unintelligible to unauthorised users. This have may also take the form of bodily integrity. There are results if privacy is breached. Network privacy has embarrassment, financial loss, company secrets. Integrity- network integrity is network security, that data transmitted on the network and this is not lost, modified, corrupted. Network integrity is the best of starting honest and strong. It is in the context of computer systems. Data integrity is an information security need. Integrity is a major IA component, therefore users can able to trust information. It is the leader in the network infrastructure security. Network integrity systems is specified develop for private and government. Availability- Network availability is network security; it is a system resource in a time manner. In computer hardware and software have specific feature of the system. Availability has always been an important character.

## (b)

## (c)

## (d)

## (e)

TASK-4

# Task 4: Diagram and Explanation

## (a)Logical Network Diagram



## (b)

## (c)Chosen the Particular hardware components and our have connected theme together in that way

These have connected together many devices. Hospital building is of brick construction externally, with some brick and some stub-partition internal walling. The internet is connected ISP and other device. We could use four switch device, that is connected many places. The building hospital have places a patients lounge (ground floor), reception and storage room, surgical consulting rooms. Every room is connected by maiming four switches; one switch gave other switch in the internet connection. The storage room for switch is give of network exchange server and database server. The consulting room for switch is give four computers and printer. The main switch is given wireless access point, this next device is connected. The reception room for switch is connected reception printer, reception pc1, reception pc2. We used devices are switch, printer, IP, wireless access point, payment device, computer.

## (d)Local Price and Specification of Hardware and Software

Switch

****

Prices-$180.39

Style- 8-port Gigabit

Limited lifetime Waiianty

Eight (8) 10/100/1000 M bps Ports

Supports IEEE 802.1p Quos traffic prioritization

Printer

TASK-5

# Task 5: Telephony

## (a)What is VOIP?

## (b)

## (c)

# CONCLUSION

In conclusion

# REFERENCE