Network Design proposal for Internet Café

A COURSE PROJECT REPORT

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BONAFIDE CERTIFICATE

Certified that this mini project report **Network Design proposal for Internet Café** is the Bonafide work of

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ABSTRACT

A network design proposal needs to be prepared for an Internet cafe. The following are the requirements. The cafe is to support 30 users and requires a web filtering device or software to filter websites based on content.

The users need to share one ADSL internet connection. The cafe has to be managed with a billing software.

A network for the same was designed using Cisco Packet Tracer version 8.0.0. The requirements were emulated and tested for connectivity. A server was setup, which is accessible only on port 443 with HTTPS connectivity. Internally, department routers are interconnected for unfiltered access to the server.

The cafe router has NAT to translate public IP address to private device IP addresses. Switches are used to ensure optimal number of devices can be used with both the cafe network aswell as the broadband network.

Pings were used to check the connectivity and the reachability of the systems from all the network.

ACKNOWLEDGEMENT

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1. INTRODUCTION

1.1 Scenario Description

The Internet Cafe is a cafe or shop open to the public, where a computer can be hired for periods of half hour to access the Internet or play a game. Internet cafes are located world-wide, and many people use them when traveling to access webmail and instant messengers to keep in touch with family and friends. Some of them, especially LAN Gaming Centers, are also used for multiplayer gaming, having several computer stations connected on a LAN. In this case, the computers are specially assembled for gameplay, supporting popular multiplayer games. This is reducing the need of video arcades and arcade games, and many are being closed down or are being merged into Internet cafés.

The Internet Cafe can act as a gateway or portal between a local community, represented by individuals and formal and informal groups, and on-line communities and individuals. A network design proposal needs to be prepared for an Internet cafe. The following are the requirements. The cafe is to support 30 users and requires a web filtering device or software to filter websites based on content. The users need to share one ADSL internet connection. The cafe has to be managed with a billing software.

2. LITERATURE SURVEY

The first paper: Free Internet in the Lands of the Pharaohs by Kamel S and Abdel Ghaffar H, published in Management Association International Conference, Philadelphia, Pennsylvania, USA, 19-21 May 2003. The second paper: A Study of a developing nation on a mission to narrow its digital divide by Davis F D and Venkatesh V, published on: the 28th Annual Hawaii International Conference on System Sciences. The Advantage is: Assessment of Possible Method Biases. The third paper: Internet Cafés: A New Model of Information Access in Turkey, by H.F. Odabasi published on 2003, Society for Information Technology Teacher Education International Conference Annual. The Advantage is: A New Model of Information Access.

3. REQUIREMENTS

3.1 Requirement Analysis

From the given scenario, we draw the following requirements:

1. All the users should share the internet connection.
2. The laptop should have secure wireless access to the internet.
3. The desktop users should be able to access internet through the LAN.
4. The users should be transparent to the IP addressing system and should not be required to configure the same manually.
5. One of the desktops at home needs to be accessed from office.
6. All the users should be able to use the printer.

We need to configure a network design keeping the following requirements in mind.

3.2 Hardware Requirement

From the given scenario, we draw the following requirements:

For Company XYZ (Private Network):

Hardware Required:

1x Router (For address 10.0.2.1): 1841 Router

1x Switches:

2950-24 Switch

3x End Devices:

1x PCs for Connection Representation

1x PCs for Connectionless Representation

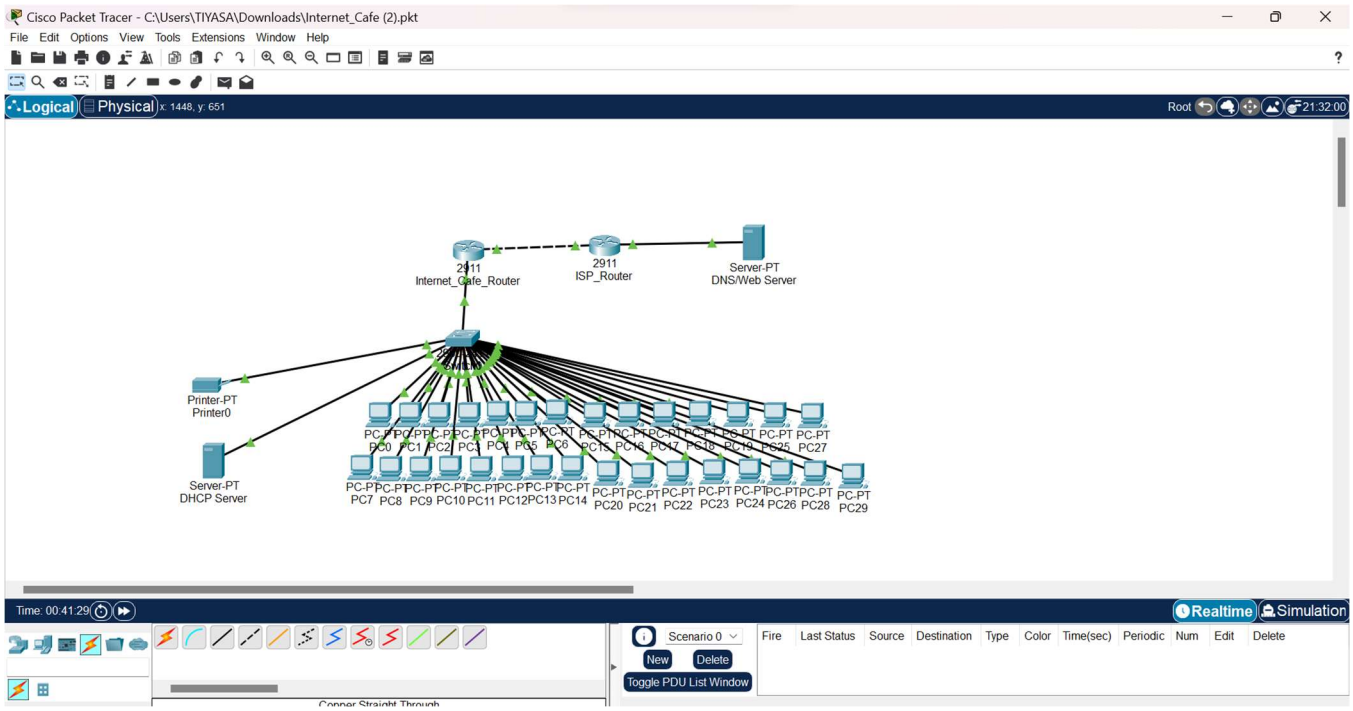
1xAccess Device

1xAccess Point PT

4. ARCHITECTURE AND DESIGN

4.1 Network Architecture

The network architecture is as follows:



The architecture consists of two major networks:

- Internet_Cafe_Router 2911
- Printer
- DHCP Server
- ISP_Router 2911
- DNS/Web Server
- 30 PCs

5. IMPLEMENTATION

5.1 Address Table

The address table is as follows:

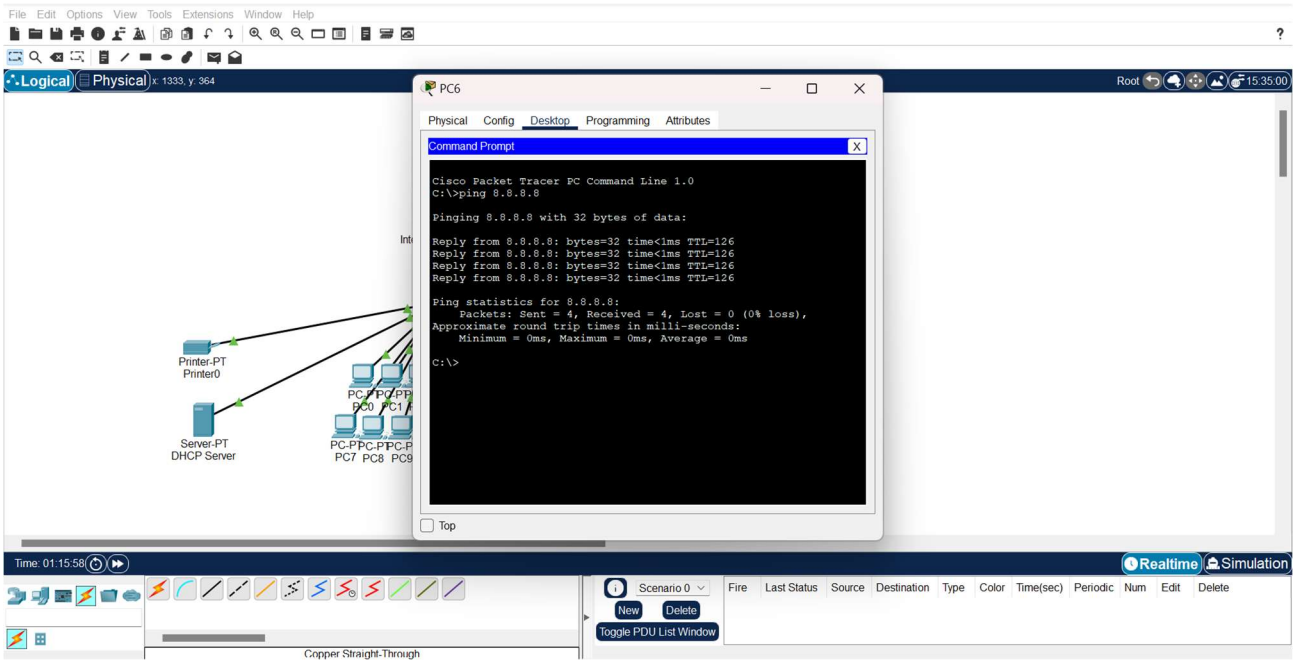
Device	Interface	Address
Router	Gb0/0 (Internet_Cafe_Router)	192.168.1.1
	Gb0/0 (ISP_Router)	1.1.1.2
	Fa0/0 (PC0)	192.168.1.1
PC	Fa0/0 (PC2)	192.168.1.2
PC	Fa0/0 (PC3)	192.168.1.3
PC	Fa0/0 (PC4)	192.168.1.4
PC	Fa0/0 (PC5)	192.168.1.5
PC	Fa0/0 (PC6)	192.168.1.6
PC	Fa0/0 (PC7)	192.168.1.7
PC	Fa0/0 (PC8)	192.168.1.8
PC	Fa0/0 (PC9)	192.168.1.9
PC	Fa0/0 (PC10)	192.168.1.10
PC	Fa0/0 (PC11)	192.168.1.11
PC	Fa0/0 (PC12)	192.168.1.12
PC	Fa0/0 (PC13)	192.168.1.13
PC	Fa0/0 (PC14)	192.168.1.14
PC	Fa0/0 (PC15)	192.168.1.15
PC	Fa0/0 (PC16)	192.168.1.16
PC	Fa0/0 (PC17)	192.168.1.17

PC	Fa0/0 (PC18)	192.168.1.18
PC	Fa0/0 (PC19)	192.168.1.19
PC	Fa0/0 (PC20)	192.168.1.20
PC	Fa0/0 (PC21)	192.168.1.21
PC	Fa0/0 (PC22)	192.168.1.22
PC	Fa0/0 (PC23)	192.168.1.23
PC	Fa0/0 (PC24)	192.168.1.24
PC	Fa0/0 (PC25)	192.168.1.25
PC	Fa0/0 (PC26)	192.168.1.26
PC	Fa0/0 (PC27)	192.168.1.27
PC	Fa0/0 (PC28)	192.168.1.28
PC	Fa0/0 (PC29)	192.168.1.29
Server	Fa0/0 (DNS/Web Server)	8.8.8.8
Server	Fa0/0 (DHCP Server)	192.168.1.30
Printer	Fa0/0	192.168.1.31

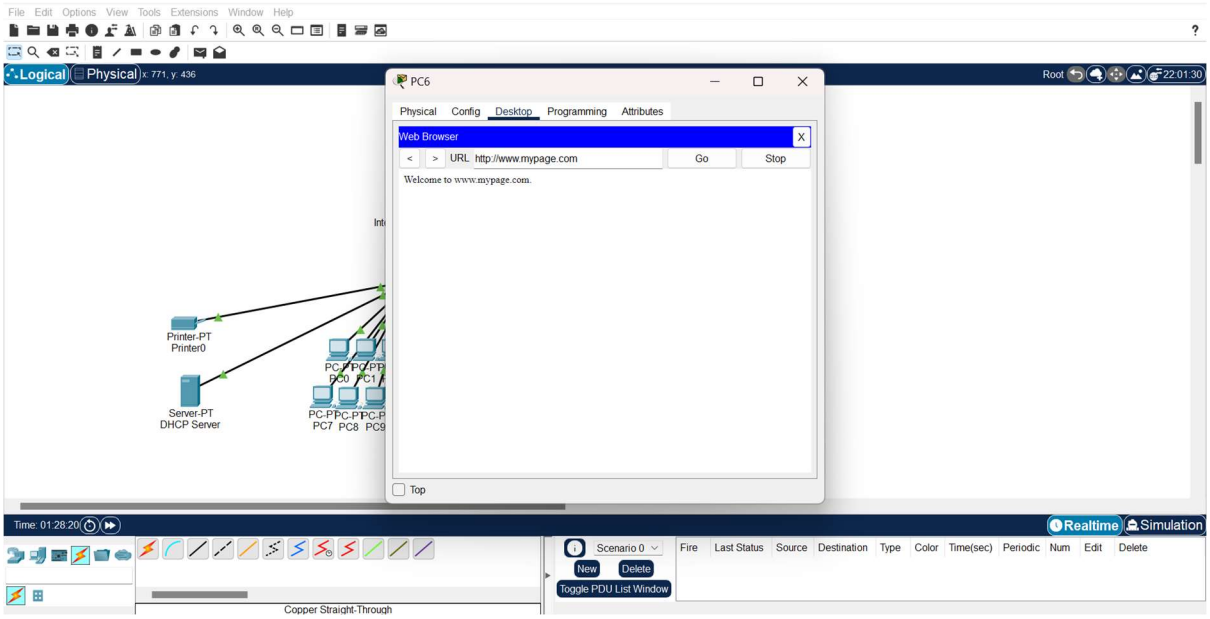
6. RESULTS AND DISCUSSION

6.1 Connection Check

The network connections were checked by ping requests:



A PC pinging the Web Server via ping command.



A PC accessing the web page from the web server.

7. CONCLUSION

In conclusion, In education, the Internet will encourage a more educated society that will contain the most skilled and financially rewarded workforce in the country. The results suggest that ICT policies be instituted and computers and the Internet be part of the school curriculum to equip Ugandans with the necessary skills so as to enjoy the proven benefits of these technologies. In particular, the government should lay strategies to electrify all the country as well as to improve the infrastructure in all schools. It will in turn enhance the quality of education in Uganda by providing for access to geographically distributed information sources via the Internet.

Increasingly, employers are relying on technology to handle many aspects of jobs, and use of the Internet is a fast-growing area. It will not matter that the specific technology in use today will be obsolete in a decade (or even a year). The skills your children acquire now and in the future will help them learn whatever new technology emerges. For example, knowing how to type is already a big advantage when learning how to use a word processor. Similarly, knowing how to use one electronic mail program will make learning to use a second or third one much easier, should it become necessary.

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