Summarising

Information.

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Contents:

Terms Of Reference.

In this assignment I am working as an information support technician for a company whose main focus is to encourage the use of the Internet as a small and large organisation business tool. I have been asked to write a report that can and will be used as the main teaching tool for a resid ential training programme for other information support technicians.
I am to use attached document entitled 'How internet infrastructure works' as the starting point for my report of which a summary of this must be included in an appendix within the report.
I must supplement the report with additional researched articles and some other appropriate resources.
My tasks are to carryout additional research creating a word processed list of additional supplementary information, for example this could be from th e internet or from articles and books, I must also indicate on this list how useful each one was in aiding the writing of my report.
I must then extract and prepare a word-processed report taken from the document provided and from additional research in no more than 1000 words the focus of this must be to address the training programme for which it is required.
This must then be followed by merging the work from task 1 and 2 and create a final report that contains the following:
Contents Page, Introduction, Terms of reference, Facts and findings, Conclusion, Recommendation, Appendix, Glossary of terms and a Bibliography.

Introduction.

In this report I will be writing about how I went about my research to find other articles about the Internet and how it works. I will also be writing about the following things:

Facts and findings.

In this section I will write about the things, which I found out about the Internet and how they helped me write the report and how they helped me in making my conclusions and recommendations.

Conclusion and recommendation.

In this section I will write about what I thought about the articles I used and why I came to the conclusions I did and will also give recommendations about using the Internet and whether all businesses should use it.

Overall this report will be about the internet first and foremost as this is what the company have asked me to produce the report about.

Facts And Findings.

From my research I was able to find extensive information about the largely growing Internet. It is clear to me that many large businesses already use the internet for transactions and other such things where as small businesses tend to use less technological ways of communicating and transacting with consumers. From my research I have learnt a great deal about the way the Internet works and provides the services to the users online some of what I have learnt is detailed below:
The basic process behind a web server: is that you type in a URL and then you get the page you request, but there's more to it than that because the process is more complex. To begin with your browser brakes down the URL into three parts: the protocol (http), The server name (www.awebsite.com), The file name (web-server.htm) this is when the process begins, your browser communicates with a name server which translates the server name into an IP address which is sent to the server computer and then a GET request is sent by the protocol and the data is then sent back to you in the format of HTML which your browser converts into normal human readable text and graphics for you to view.

What is the Internet: the Internet is basically a giant collection of computers connected to each other through a network this network then allows communication between these computers and allows for these computers to access information from different web servers and view it on their browsers. Many home computers may be linked to the Internet using a phone line modem, DSL or a cable modem which talks to an ISP this in turn sends any data back to your computer for viewing any where in the world.

What are a client and server: all machines connected to the Internet are categorized in two groups servers and clients, Servers are the machines that offer the services where as clients are the computers, which connect and access the data. A server machine can provide one or more services on the Internet e.g. a server machine may be running software to allow it to act as a web server, a ftp server or an e-mail server. Clients then come to the server machine with a specific intent to use one of these server types; they then direct their requests to a specific server this then allows them to use the server they chose such as the web server to view web pages or the e-mail server to view and send e-mails.

What are IP addresses: all machines on the Internet are assigned a unique address known as an IP address. These IP addresses are 32-bit numbers normally expressed as four octets in a dotted decimal number below is a typical IP address:
216.27.61.137
All octets have values between 0 and 255, which are 2 to the power 8 possibilities per octet.

What are name servers: name servers are the way in which each website or IP address is remembered by humans. It is and address of a website which contains the host name for example www.yahoo.com. This is much easier than remembering all those numbers within the IP address. And so these names need a server to run the server known, as verisign is responsible for creating top-level name, which are all unique, and maintains contact with all sites they run.

Conclusion.

Recommendation.

Appendices.

Appendix A:

Summary of supplementary article:

The greatest thing about the Internet is that it is owned by no one, the Internet is just a huge collection of networks combined together to form a single entity known as the Internet. The Internets name comes from the idea of interconnected networks.

It began in 1969 and has grown tremendously since then from its original four - host computer server to tens of thousands of computers running the same server. But this doesn't mean its not monitored and maintained, it is by 'The Internet Society' who were established in 1992 and were the starting point in the formation of policies and protocols we use to interact with the internet.

Every computer connected to the Internet is connected to the Internet, even your home one which connects through a modem and dial up connection to a Internet Service Provider (ISP). Though many businesses may be part of a LAN (Local Area Network) in which case is the companies' own contracted server. When connecting to your ISP you become part of a larger network and become part of their network.

Many companies' have their own backbones connecting them to various regions; each region has its own Point of Presence (POP). This POP is the place where local users access companies' networks through a local phone number or dedicated line. This is a good thing as there is no overall controlling network; instead there are several high-level networks, which connect through a Network Access Point (NAP).

All networks rely on NAPs, backbones and routers to communicate with each other, the data each sends is sent halfway around the world through many different networks until it arrives at its destination computer in a fraction of a second. Routers are what determine where to send the data from one computer to another that are sent down the thousands of pathways. Routers have two main jobs a. to make sure that data doesn't go where it's not wanted this is to stop clogging of information and b. to make sure data does go where its intended to go. In performing these two jobs a router is extremely useful when dealing with two separate computer networks. It also protects each one form another and preventing traffic form overflowing into the connection.

The national Science Foundation (NSF) was the creators of the first high-speed backbone in 1897. This was called NSFNET it ran on a t1 line, which connected 170 smaller networks and operated at 1.544mbps (million bits per second) IBM, MCI and Merit also worked with NSF to create the backbone. Backbones are made up of fibre optic trunk lines; the trunk line has many fibre optic cables to increase capacity.

The fibre optic cables are designated OC for optical carrier e.g. OC -3 or OC-48 etc, An OC-3 line is able to transmit 155 mbps while an OC-48 can transmit 2,488 mbps (2.488 Gbps). Compare that to a 56k modem then you see just how fast a backbone is.
Many companies today own their own high -capacity backbones of which all of them interconnect together at various NAPs around the world.
This is the way in which everyone no matter where they are is able to talk to each other anywhere on the planet. The entire Internet is one gigantic sprawling agreement between companies to intercommunicate freely.
Protocol of the Internet each machine has its own unique identifying number called an IP address; the IP stands for Internet protocol. A protocol is the pre - defined way in which we can use the Internet and is usually a computer program like a web browser.
A typical IP address would look like this:
216.27.61.137

These are normally in decimal format as they would be too big in binary form and very hard to remember here is the same address in binary:
11011000.00011011.00111101.10001001
The four numbers which are within an IP address are called octets th is is for the simple reason that they have eight positions when viewed in binary form. They are considered to be 32 -bit numbers. An octets purpose is to create classes of IP addresses, which can then be assigned to say businesses or government organisations.
Web Servers:
When you type in a URL into your browser your computer forms a connection with a web server, requests a page and you then get that page displayed on your computer for you to read. Your browser actually broke the URL into three parts before sending and receiving anything, these three parts are as follows:

a. The Protocol (http)
b. The Server name (www.awebsite.com)
c. The File name (web -server.htm)

Your browser communicates with a name server to translate the server name in to an IP address, which it then uses to connect to the server machine.
The connect is formed at the IP address port 80 and then the HTTP protocol sends a GET request to the server asking for the page you wanted. This is sent back to you in HTML format this is formatted by your browser for you to view its contents on your computer.
All machines on the Internet are categorized into two types Servers and Clients. The machines that provide the services, such as web servers or FTP servers are the servers, and the machines that are used to connect to the

servers are the clients. For example when you connect to a website lets say yahoo! At www.yahoo.com to read a page it is yahoo! Who are providing the machine for your use of the services on the Internet so they provide the server where as your machine is the one connecting to the yahoo! Machine so your computer is the user machine and you are the client of the server.
Remembering the strings of numbers, which make up the IP addresses of websites, can be hard to remember for any user. So these are converted into human readable names that we call Domain names. For example www.howstuffworks.com = domain name with IP address 209.116.69.66 the domain name is much easier to remember.
All Domain names are managed by the a company called verisign, these are the company who creates top-level domain names and guarantees that all names within top-level are unique so no two places can have the same domain name as each other. The host name is created by the company hosting the domain. 'WWW' is a very common host name but not all places use it sometimes it is omitted and replaced by a certain area of the site.
Any server machine must have numbered ports in order for the clients internet to work properly for example a web server would be available on port 80 and a FTP server would be available on port 21.
Other examples of ports include: echo 7, daytime 13, ftp 21, telnet 23, smtp 25 (simple mail transfer, meaning e-mail), time 37, nameserver 42, gopher 70 and WWW 80. These are the most commonly used port numbers within the server machine.

Glossary of Terms.

ISP = Internet services provider.

IP address = Internet protocol address.
LAN = Local area network.
WAN = wide area network.
NIC = network interface card.
DNS = Domain name server.
POP = Point of presence.
NAP = Network access point.
HTTP = Hypertext transfer protocol.

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