Web Basics

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1. INTRODUCTION

Using computers have become a common everyday task for nearly everyone. However the frustration linked to these tasks are numerous, and many can witness to this. The main cause of this frustration (beside the speed of your processor and Internet connection) is the lack of knowledge regarding the capabilities of ones own computer.

The aim of this introductory course is to familiarise you with the basic jargon and working of the Internet, the World Wide Web (WWW), using e-mail and browsers, and the research capabilities of the WWW. Throughout this course you will be prompted to complete a series of activities. To ease the learning process a few icons (relating pictures) will be used (see: The functions of the icons). Small exercises must also be completed, either by defining terms or completing an exercise on your computer.

All the sections of the study guide are outcomes based, which means that after the completion of each section you would have gained practical knowledge, which you can use in everyday internet and computer, related activities. Every term that is used for the first time will be displayed as follows: e.g. *Internet*, followed by a definition, which can be recognised by the relevant icon as explained in the following section.

One of the best ways to learn is by trail and error, so feel free to experiment with the different aspects outlined in this guide.

2. FUNCTION OF THE ICONS

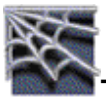
 **OUTCOMES:** Each unit of this study guide has a certain objective. This icon indicates that the particular objective for that unit will follow.

 **DEFINITION:** This icon indicates that a definition will follow. It is important that these definitions are studied carefully.

 **ACTIVITY:** The activity icon indicates that you must perform an activity. The activity will help you to consider a certain aspect of the text in more detail.

 **KNOWLEDGE REVIEW**: Wherever you see this icon you must complete self-evaluation questions which will test if you have mastered the preceding section. This icon will be encountered at least at the end of each unit.

 **TAKE NOTE:** The “Take Note”-icon indicates that there is an important piece of information which you need cognisance of.

 **TRY THIS:** The “TRY THIS”-icon indicates that an exercise will follow that you should complete on your PC.

3. THE INTERNET

OUTCOMES: After completing this section you will:

- understand what the Internet is and how it works.
- access e-mail messages
- compose e-mail messages
- send e-mail messages
- work with e-mail attachments
- understand the different onramps to the Internet

3.1 HISTORICAL OVERVIEW

Computer networking has had a short and spectacular history. From the first effort to connect two computers together in the 1950s, to the present, the value of sharing computer resources has become obvious. Regional networks became connected to each other, and eventually the *Internet* came into being.

The Internet is the catchall word used to describe the massive worldwide network of computers. The word "internet" literally means, "network of networks". In itself, the Internet is comprised of thousands of smaller regional networks scattered throughout the globe. On any given day it connects roughly 50 million users in over 50 countries. The World Wide Web is mostly used on the Internet.

In the late 1960s, the United States Department of Defence developed an experimental communication system called *ARRPANet*.

ARPAnet

ARPA is the acronym for *Advanced Research Project Agency*, the U.S. Department of Defence agency that funded the development of the first computers that linked networks across great distances. The ARPAnet was the forerunner of the Internet.

This network initially linked major supercomputer networks at U.S. military establishments in such a way that if any were destroyed (e.g. by nuclear explosion) the remaining computer sites would continue to communicate with each other. It was soon extended to include defence-related corporations and research institutions. In the 1980s these interconnected networks spread widely to reach universities and other organisations. Spurred by the rapid availability of the personal computer, the networks spread over most of the globe and began to attract thousands of individuals as well as a few private organisations. It was during this expansion that the phenomenon became known as the Internet.

Today, the Internet exists as an intricate pattern of smaller networks linked through servers. The servers transmit data through lines that, in most cases, are dedicated to Internet communications. Individual computers are connected to these servers either through direct lines or telephone lines and modems. Direct lines are generally high-speed, telecommunication lines that are dedicated to transferring data between buildings or organisations. Standard telephone lines, or, in an increasing number of cases, special digital lines called ISDN lines, generally connect individuals.

The Web on the other hand was first developed at the European Laboratory for Particle Physics (CERN) in Geneva, Switzerland, in the late 1980s and was originally intended for the use of scientists rather than by the general public.

Commercial use of the Web began only in 1994. Today, the standards of Web technology are watched over by a group made up of industry and university members, the W3 Consortium.

3.2 ACCESSING THE INTERNET

There was always some way to navigate from place to place on networks. Earlier systems required you to type something cryptic at a keyboard, and to know something about *UNIX*.

Unix is a very popular computer operating system. Much of the present ability of Windows and similar operating systems was derived from Unix. Unix allows multiple users to run multiple processes on a single computer, (like having 2 programmes open in Windows) and facilitates interconnection between computers.

There is only one set of communication standards that all computers linked to the Internet abide by. This protocol is called *TCP/IP* (Transmission Control Protocol over Internet Protocol). This communication protocol allows computers of different manufacturers and platforms to communicate over the Internet without conflict.

The two most common methods to access the Internet are via a *modem* or an *ISDN*, which can be connected to a stand-alone computer or a *LAN, a MAN or WAN.* Satellite connection is increasingly becoming more popular.

Modem (modulator-demodulator) is an electronic device which connects, via a telephone line, a computer to an Internet Service Provider (ISP), through which access to the Internet is gained.

ISDN (Integrated Services Digital Network) provides users with digital connectivity to the Internet via special telephone lines. This connection differs from a modem in the sense that this is a direct connection and is approximately four times faster than a modem connection.

LAN (Local Area Network) can be defined as a collection of computers linked to a central database through which the Internet and other data can be accessed via a digital line. These computers are usually confined to one single building.

MAN (metropolitan area network**)**
Networks can function from one building to another building in the same city.

WAN (wide area network**)**
Networks that span across countries and can include LAN's and MAN's.

After gaining access to the Internet through either of these connecting methods one need some kind of programme to facilitate interaction on the WWW.

As time passed and more people tried to use the Internet for more kinds of things, the old ways were replaced with more intuitive graphic interfaces. The most popular present method to interact with the Internet is by way of a *Web Browser*, a program that can read *Web Pages* that have been posted on the Internet.

Web Browser is a generic term used to describe a program that can read and display web pages (e.g. Netscape Navigator or Microsoft Internet Explorer).

Web Page is a document written in a format called HTML (Hypertext Mark-up Language) that allows one to interactively gain access to other resources on the Web by way of active links.

A modern web page is a multimedia resource, containing text, images, sounds, and animation. Soon web pages will contain links to objects that will offer you access to resources such as programs and information in ways not presently possible.

ACTIVITY:

1. Define the Internet.

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2. How does a LAN differ from a modem connection?

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3.3 INTERNET ONRAMPS

3.3.1 E-mail

E-mail is one of the first ways in which one comes in contact with the cyber world of the Internet. Like all other applications involving the Internet, e-mail are not only a way of sending a text and graphical message to another user, but can be used in numerous ways for exchanging information. All online services and Internet Service Providers (ISP) offer e-mail (like NEThabitat – www.nethabitat.co.za), and most also support gateways so that you can exchange mail with users of other systems. Usually, it takes only a few seconds or minutes for mail to arrive at its destination. This is a particularly effective way to communicate with a group because you can broadcast a message or document to everyone in the group at once. E-mail is the most popular usage of the Internet to date.

E-mail is the short for electronic mail, which is the transmission of messages over communication networks. The messages can be notes entered from the keyboard in text format, “Rich Text” files in HTML format or electronic file (like a MS Word attachment) stored on disk.

Most mainframes, minicomputers, and computer networks have an e-mail system. Some electronic-mail systems are confined to a single system or network, but others have gateways to other computer systems, enabling users to send electronic mail anywhere in the world. Companies that are fully computerised make extensive use of e-mail because it is fast, flexible, and in most cases reliable.

3.3.1.1 The E-mail Editor

To access any e-mail message one need an e-mail editor in order to access your electronic mail box located on the mail server of your ISP. In the case of Internet Explorer 5/6, an e-mail editor called “Outlook Express” is integrated into the programme. To access your mailbox, your first need to establish an Internet connection because you need to download all your messages from your mailbox. After establishing your Internet connection you can launch your e-mail programme.

TRY THIS:

The following activity will teach you how to access your e-mail editor.

Locate the Outlook Express icon in your programme menu by clicking on:

1. Start
2. Programs
3. Outlook Express

Alternatively you can click on the Outlook Express icon which will be embedded in your task-bar next to the start button (if active desktop is switched on) or on the shortcut to your desktop.

3.3.1.2 Receiving E-mail

Sent messages are stored in electronic mail boxes until the recipient fetches them. To see if you have any mail, you may have to check your electronic mailbox periodically, although many systems alert you when mail is received.

TRY THIS:

Receiving e-mail.

1. Open your e-mail editor
2. Click on In-box
3. Click on “Send and Receive” mail icon
4. If you have any mail it will download and appear in the top half of the right-hand frame
5. Click on the message to read your mail which will appear in the bottom half of the right-hand frame

After reading your mail, you can **save** it in a folder, **forward** it to other users, **reply** to the sender or **delete** it. Copies of messages can also be **printed** out if you want a paper copy.

3.3.1.3 Composing E-mail

Using your e-mail editor you can compose an e-mail message to send to a specific recipient. You can also edit your messages using any editor you want (e.g. MS Word). You then send the message to the recipient by specifying the recipient's e-mail address (e.g. yourname@isp.co.za).

Composing an e-mail message involves typing a text message, using graphics or attaching a file (will be discussed later on). To compose a new e-mail you should do the following:

TRY THIS:

1. Launch your e-mail editor
2. Click on the “Compose” icon
3. A new window will open in which you can type your message
4. In the “To” box you must type the recipients e-mail address
5. In the “Subject” box type the subject of your message (advisable)
6. In the message box type your message

3.3.1.4 Sending E-Mail

An e-mail address consists of four parts:

E.g. **yourname@isp.co.za**

1. **yourname** = name of the
2. @ = the “at” sign indicates that the name of the Internet Service Provider (ISP) or mail server (in the case of a very extensive mailing system) will follow.
3. **isp** = indicates the ISP (or mail server)
4. **co.za** = this indicates the country in which the ISP resides or the Virtual Domain registration (e.g. **.com** or **.org** or **.net**)

NOTE: In the case of an e-mail address like yourname@tsamail.trsa.ac.za, the **tsamail.trsa** indicates the mail server, and the **ac.za** indicates that this is an academic institution in South Africa. Other academic institutions outside the RSA are also indicated by a **.edu**.

You can also send the same message to several users at once. This is called broadcasting.

TRY THIS:

1. Launch Outlook Express
2. Click on the **New Mail** icon to send a message.
4. In the "**To:"** box type in your **own** e-mail address

4 Type in the Subject box "Test"

5 In the text box type in a small message to yourself

6 Click on send

NOTE: You have now send an e-mail message to yourself. You can wait a few minutes and then retrieve the message in the same way as you have already learned.

3.3.1.5 Working with Attachments

In many cases one will receive an e-mail which contains an attachment. An attachment can be any file send by the composer of the message. Only files that are compatible with the programmes on your computer can be read although any file which is send as an attachments can be save to your computer.

3.3.1.6 Receiving attachments

When one receives an e-mail message containing an attachment a small paperclip will appear next to the message. To access the file, simply click on the message and then on the paperclip which will appear in the top right-hand corner of the message. This will open a drop-down menu from which you can select the file attachment and save it to file. After clicking on the attachment you will be prompted to open or save the file. Choose the directory in which you wish to save the file. In the event of the attachment being a graphic file, you will be able to

view the file by scrolling to the end of the message. You can then choose to save or discard the message.

3.3.1.7 Sending attachments

Sending attachments are just as easy accomplished as receiving them. After composing a new message one can click on the **paperclip** or "insert file" button to attach a certain file to that message. By using the **Insert Attachment** browsing facility one can choose the file that should be send as an attachment. After choosing the file, add it to the message by clicking on attach. By doing this the attached file will appear at the bottom of the message.

TRY THIS:

The following activity will teach you how to send e-mail with an attached file and how to retrieve an attachment from an e-mail message.

1. Launch Outlook Express
2. Click on the **New Mail** icon to send a message.
3. In the "**To:"** box type in your **own** e-mail address
4. In the **Subject** box, type Attachment
5. Click on the **Insert file** icon what looks like a **paperclip**.
6. From the **Insert Attachment** window, choose any file from your computer (try to choose a small file, something like a word document) and click on **Attach**.
7. Choose **Send**
8. You have now send an attachment to your own e-mail box
9. Wait a few minutes then check for e-mail
10. The message containing the attachment will now download to your computer from your e-mail box.

11. After the message has downloaded, click on the message
12. A paperclip will appear in the right-hand top corner
13. Click on the paperclip
14. The file will open in the appropriate programme or you will be prompted to save it to file.

ACTIVITY:

1. Define E-mail

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2. Explain how you would work with attachments.

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3.3.2 IRC

The *IRC* is a network of servers throughout the world that connects people via the Internet for the sole purpose to "chat".

DEFINITION: IRC (Internet Relay Chat) is an interactive discussion that takes place in real time with several people partaking simultaneously.

Any IRC interface is text based where you type and people connected to the same "chat room" can read your text. It is both useful for entertainment as well as serious discussions. With literally millions of people partaking in IRC each day, you can imagine that there are millions of chat rooms and different networks available.

The two most popular chat clients in use are mIRC and Pirc. Both these two clients can be downloaded from the Internet.

3.3.3 Telnet

DEFINITION: Telnet is software that allows a remote computer to log into a mainframe computer situated somewhere else in the world.

Telnet utilises the Internet to connect users. Telnet turns the client computer into a mainframe terminal. In order for the Telnet software to work, both computers need to use Telnet protocol.

Some of the Telnet usage includes:

- access to a multitude of library catalogues
- multiple collaboration logins by researchers
- Unix server access
- Remote computer administration

3.3.4 Usenet

During the development of the Internet two very innovative scholars, Jim Ellis and Tom Truscott at Duke University developed *Usenet*.

DEFINITION: Usenet is network that connects clients from around the globe to participate in electronic discussion groups, covering a variety of topics.

These discussion groups are collectively called Usenet. Usenet used to be a single entity whereby clients connect via dial-up networking. Today it forms part of the Internet.

Usenet works similar to web based discussion groups. One person can post a message and users that log on can read and reply to these messages. Usenet has become extremely popular with more that 22 000 existing discussion groups.

3.3.5 FTP

Probably one of the most unique features of the Internet is the ability transfer and access files to and from other computers. The protocol used to transfer files between computers is called *FTP*.

DEFINITION: FTP or File Transfer Protocol is the program used to access file on remote computers and transfer (upload or download) files between these computers.

Two very most popular FTP clients are **Cute FTP** and **WS FTP**, both of which are available from Tucows (http://www.tucows.com/). (More information on the actual downloading follows in the next section of this manual).

Cute FTP has the easier interface of the two, and is also more user-friendly, but unfortunately is not a free utility. You can download it free of charge, and then

evaluate the software free for thirty days, after which you will need to register the software.

WS FTP is not quite as attractive and easy to use as Cute FTP, but is distributed free of charge to individuals. This means that you are allowed to use the software as much as you like, without having to register it, as long as you are a private individual, and not a company.

KNOWLEDGE REVIEW:

1. Define the following concepts:

- E-mail
- FTP
- Usenet
- Telnet
- IRC
- MAN

2. Explain the different way of accessing the Internet.
3. Where would you look for software to download?

4. THE WEB

OUTCOMES: After completing the following section you would be able to:

- use your browser
- bookmark internet websites
- access these sites again
- do a search on a search engine and access the returns.
- a fair understanding what HTML involves
- a fair understanding what FrontPage 98 involves

4.1 THE WORLD WIDE WEB

The "Web" refers to *The World Wide Web*, which is not so much a network as a way to interact with a computer network. The Web is in fact a combination of communication protocols that include a language called HTML (Hypertext Markup Language), several kinds of programs called Browsers, and the Internet to connect it all together.

The World-Wide Web (WWW or W3) refers to a body of information - an abstract space of knowledge, while the Internet refers to the physical side of the global network, a giant mass of cables and computers.

"Web pages" are written in HTML using a program, generically known as a "Web Page Editor." After being written, web pages are usually posted on a computer (also called a server) that is attached to the Internet. People that have network

access to the server or computer can "read" the web page using their browser program. Some Web pages contain graphics, sounds, and other things to increase their information content. But the most important single thing about a Web page is that it can contain links to other pages, resources, and locations. The behaviour of these links is referred to as Hypertext, a method by which one can jump from place to place by activating the links (like the help file in Windows). In the original embodiment of Hypertext, one would move from paragraph to paragraph in a document using links. Now, using HTML, one may move from country to country by clicking a pointer device (e.g. a mouse).

4.2 USING YOUR BROWSER

As explained earlier, a browser is the programme, which converts HTML documents into understandable interactive web pages. Therefore, before starting to “surf” the WWW it is important that one gets to know the capabilities of one’s browser. The two most common browsers in use are Netscape Navigator and Microsoft Internet Explorer. Although these two stand in direct competition with each other it is important to note that they both work basically in the same way.

An example of Netscape Navigator

An example of Internet Explorer

For the purpose of this course **Microsoft Internet Explorer** will be used and explained.

4.2.1 Start-up

After starting your browser the first page that will appear on screen will be your default “homepage”. Each time the browser on your computer is started it will load this homepage. Every browser does have the option to change the start-up homepage in the set-up should you wish to do so.

TRY THIS: The following activity will teach you how to access your browser.

Locate the Internet Explorer icon in your programme menu by clicking on:

1. Start
2. Programs
3. Internet Explorer

Alternatively you can click on the Internet Explorer icon which will be embedded in your task-bar next to the start button (if your active desktop is enabled) or on the shortcut icon on your desktop.

4.2.1.1 The Home Button

Should you wish to re-access your homepage while you are surfing, you only need to click on the “home” button at the top of your browser. This will automatically load your default homepage. It is therefore not necessary for you to either type in the location of your homepage or exit and reloading your browser.

4.2.1.2 Changing Your Default Homepage

As mentioned earlier one can change the default homepage in your browser.

TRY THIS: The following activity will teach you how to change the default homepage in your browser:

1. With your browser already loaded, click on the :View" drop-down menu
2. Click on Internet Options (another window will open)
3. Click on the "General" tab
4. The first option under the "General" tab will allow you to change your default homepage.

ACTIVITY:

What does a web browser do and give an example of one.

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4.2.2 Accessing a web page

4.2.2.1 The Location Box

The most important feature of any browser is the **Location** box. This is located in the top-part of the browser screen. The location box will allow you to access web pages by typing in the correct Internet address. The following will usually be displayed in this box: **http://www**.....etc. and is also known as a *URL*.

A **URL** is a Uniform Resource Locator. In short it can be defined as a method of locating files or, in this case web pages. Not only can you point to a web page location but also a file in a directory, but that file and that directory can exist on any machine on a network. URLs can also point to queries; documents stored deep within databases or the results of a WWW search.

The URL is thus the most important way to navigate your way through the WWW. By typing in the correct URL in the location box, you will be able to access the particular web page that URL points to. Although in some cases the URL can be a very long complicated collection of numbers and words, it is not necessary to memorise or write down these URL in order to access that particular site later, because each browser has a build in feature named a ***bookmark*** (Netscape Navigator) or ***favourite*** (Internet Explorer).

TRY THIS: The following activity will teach you how to enter a URL in the location box in order to access a web site.

1. Open your browser
2. Type the following URL in the location box : http://www.cnn.com/
3. Hit enter
4. CNN's web site will appear

4.2.2.2 Hypertext and Graphic Links

Making use of hypertext links on other sites can also access a web page. These hypertext links can mostly be recognised, by any particular part of text being underlined in a bright blue colour. By clicking on the underlined text you will be able to forward to the site or page represented by the underlined text. Graphics can also be used as a link to a new site. These graphics could either be animated or still. By swiping your mouse over graphics you will be able to see if that graphic is a link, by either the appearance of a pointed hand, "alternative text" that it will generate or by looking at the bottom task-bar of your browser for either a URL that will appear or a description.

TRY THIS: The following activity will teach you how to navigate your way to other sites by using hypertext and graphic links.

1. On the CNN web site that will be opened in your browser, locate any hypertext link
2. Click on the link
3. You would now have accessed another web page of the CNN site.
4. Click your "Back" button in the top left-hand corner of your browser that will take you back to the main CNN site.
5. Locate any graphical link to another page
6. Access the page by clicking on the graphic that contains the link.

4.2.2.3 The Back, Forward and Stop Buttons

By navigating your way around the Internet you will probably at some stage need to return to a site that you have previously visited as you have just done in the previous activity. This can be done in a number of ways. One of the easiest ways to return to a site is by using the "back" button of your browser, located in the top left-hand corner. By clicking on the "back" button you will in succession return to the web sites you have visited. At this stage it is important to note that (as you will learn later on) almost all of the web pages are designed in frames. This means that although you have accessed numerous pages of a site you would most probably be returned to the MAIN page of the web site. In other cases you can backtrack page by page. The "forward" function works in the same manner as the "back" feature but allows you only to forward to the last web page you have accessed.

Another feature of Internet Explorer 4 is the "stop" button. This button can be used while a web page is loading to terminate the loading operation. It is quite useful because accidentally clicking on the wrong link can cause you to loose time while waiting for the page to load.

Another, much easier way to backtrack or forward is by using Explorer's "History" function. By clicking on the "History" button at the top of your browser, a separate frame will open in your browser to the left. This frame will contain days, dates and web sites that you have accessed. By clicking on the relevant day, date and web site, you will be able to access the exact site you are looking for. Remember that in may instances a web page may expire after one visit, which will require of you to access the previous page to the one you wish to access that contains the link to that page.

TRY THIS: The following activity will teach you how to use the "history" function of Internet Explorer 4:

1. Click on the "History" button at the top of your browser (a split frame to your left will appear)
2. Click on any of the days listed
3. Click on any of the web sites listed under the days
4. Click on any of the web pages listed under the web sites to access any of the pages.

4.2.3 Adding to Favourites

By adding a favourite, your browser automatically stores the URL information for easy access later. The bookmark or favourite feature is also located in the top toolbar of your browser.

TRY THIS: The following activity will teach you how to add a favourite and accessing it again by using the favourite feature.

1. Backtrack to the main page of the CNN site.
2. After the web page have loaded, point your mouse arrow to the "favourites" of the **top drop-down** menus.
3. Click on "**Add to favourites…"** to add this site. (At this stage you can either create a new folder to store certain kinds of URL's or you can simply just "add" the site.)
4. Exit and access your browser again.

5. Go to the favourites and there you will find the URL of CNN which you have just added.

NOTE: It is not necessary to exit and access your browser in order to view your newly added favourites. This was only done as part of the exercise. At any time after entering a favourite you can access that site again by using the favourites feature.

In the above mentioned manner your are now able to add any site to your favourites in order to access it later. The favourites feature can also organise your URL's or sites into folders for even easier access seeing that a favourites collection can grow quite fast once ones gets "surfing".

4.3 Search Engines

The Internet's greatest strength is also one of its biggest problems. The Internet is so huge that there is probably some information available on any topic you can imagine, but it can be very difficult to find a particular piece of information. To help solve this problem, enterprising people around the Internet have developed *search engines* to help you navigate through the multitude information on the net.

Search Engines are remotely accessible programmes that performs keyword and/or concept searches for information on the Internet. Doing a search on a particular search engine can access this information.

Especially in the academic environment search engines are the backbone of any research done on the Internet.

There are two basic types of search engines:

4.3.1 Keyword Searches

You can enter words into a text field and receive back a list of web pages (in the form of hypertext links), that contains those words. Some keyword search engines will look at only parts of the web documents (e.g. the title or the first few words or the words entered in your META tag), whereas others index the entire text of the pages. Some are very simple and easy to use, others give you more control, such as letting you specify only those pages from certain domains that should be searched (e.g. only pages from *cnn.com*).

4.3.2 Encyclopaedic Indexes

Encyclopaedic indexes are organised, as groupings of pages into categories, like an encyclopaedia. Instead of looking for a keyword such as *Beethoven*, you would browse a category such as *Music - Classical*. Some encyclopaedic indexes will also allow you to do keyword searches on their own database.

Some things to keep in mind when using search engines:

- A different person or team, using different methods and software have developed the search engines. Different databases often contain many of the same documents, but no one index contains all the data on the Internet. If you don't find what you're looking for on the first try, go on to a different engine and try again.

- Most of these search engines are developed and maintained by volunteers who donate their personal and computer time to provide this service to Internet users. Some of them are very popular, and they can become overloaded when too many people attempt searches at one time. Again, if you try a search engine which doesn't seem to be responding, just go on to another, because this will save you time an a lot of frustration.

- One solution to the overloading problem is emerging in the form of **commercial** search engines. Companies who charge a small fee for each search you do. They're more expensive than the free searches of course, but they are guaranteed to always be available because they have a revenue source, which allows them to upgrade their computer system to handle larger loads.

- Remember that the Internet is completely **dynamic**. Sometimes people change the names or locations of information in their web areas, and it takes some time for the search engines to catch up. Because of this, some of the links that a search engine returns to you will be invalid. When you select them you'll receive a "not found" or "host unknown" which means that the information has either moved or has been deleted. When this happens, just back up and try another item from the list.

ACTIVITY:

Describe how you will use a search engine to locate information you require.

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A Few Search Engines

By using the knowledge gained above, allocate one of the following search engines using their URL.

- **Google:** http://www.google.com
- **Infoseek:** http://www.go.com
- **Aardvark** (South African Search Engine)**:** http://www.aardvark.co.za
- **Zebra** (South African Search Engine): http://www.zebra.co.za
- **Ananzi** (South African Search Engine) **:** http://www.ananzi.co.za
- **Webcrawler:** http://www.webcrawler.com
- **Galaxy:** http://galaxy.einet.net
- **Yahoo:** http://www.yahoo.com
- **Alta Vista:** http://www.altavista.digital.com
- **Excite:** http://www.excite.com
- **Hotbot:** http://www.hotbot.com
- **Lycos:** http://www.lycos.com
- **Dogpile:** http://www.dogpile.co.za
- **Northernlight:** http://www.northernlight.com
- **Apollo:** http://apollo.co.uk
- **Metacrawler:** http://www.metacrawler.com

TRY THIS:

1. Allocate any search engine of your choice on the Internet using your browser.
2. Do a search using the following keyword: “football”.
3. The result will give you links to different football sites linked to this particular search engine.

NOTE: In this manner you can do a search on any topic of your choice.

After completing a search the results given by the search engine will usually be in hypertext form with a link to the text. To access the link click on the blue underlined text.

4.4 INTRODUCTION TO HTML AND FRONTPAGE 2000

4.4.1 HTML

The Hypertext Markup Language (or HTML) is the language used to create the documents for the World Wide Web. When HTML documents are read by applications specifically designed for the Web (browsers, such as Netscape Navigator and Internet Explorer) they can include formatting, graphics, and even links to other documents.

As a markup language, HTML is not so much concerned about the appearance of the documents, but about the structure of a document. Rich Text Format (RTF) and Postscript, on the other hand, are examples of formatting languages. Formatting languages are concerned more with the appearance of the document (typefaces and the exact position of illustrations, for example). A markup language is used more to describe the ***structure*** of the document. For example, HTML are use to mark the headings, normal paragraphs, lists (and whether they are numbered or not), and even addresses.

HTML is a relatively simple implementation of ***Standard Generalised Markup Language*** (SGML). HTML is simple enough to just type in directly without using some sort of text editor (e.g. Notepad or MS Word). HTML editors are useful especially if you have massive quantities of code to write, but they are not necessary to get started.

HTML files are text written files that contain certain elements that a browser can read, interpret and display in a visible format. The format in which an HTML file is written is similar to that of an essay or book e.g. an HTML file starts with a <html> tag and ends with </html. Within the <html> and </html> code you will find

a <title> </title> tag as well as a <body> </body> tag thereafter. Each of these commands is necessary in order or an HTML file to display correctly.

In general, HTML commands begin with a < and end with a >. The commands are almost never case sensitive and are either "container" or "separator" commands (although there are numerous exceptions to both of those generalisations). A container means that there is usually a beginning command and an ending command (e.g. <html> and </html>). The commands would thus be applied to the text in-between the beginning and ending commands. An example of a container command is the title command, which surrounds the text that is designated as the document's title with <title> and </title>. An example of a separator command is the command used to insert a linebreak (
).

White space, meaning anything that is not a printable character, is generally ignored in HTML. Leaving a blank line in your document will generally not create a blank line when the document is displayed in a browser unless you use the "preformatted" HTML tag (<pre> and </pre>).

Finally, not every element common to typical documents is included in HTML. You will occasionally have problems converting some documents. For example, the version of HTML in common use today doesn't support equations and support for tables is still relatively new. The implementation of many features also varies somewhat among browsers (meaning that tables, for example, may look quite different depending on which browser you use).

4.4.2 FRONTPAGE 2000

Microsoft FrontPage 2000 is a quick, effective way to create and manage professional-quality Internet or intranet sites without programming. FrontPage 2000 is what is known as a WYSIWYG (What You See Is What You Get) HTML editor. It makes it easy for new users and professional Web developers alike to

build and maintain web sites in less the time that it would take to programme the HTML code.

FrontPage 2000 includes the following:

- Easy-to-use features lets one create professional Web sites without programming. Create WYSIWYG frames pages and draw HTML tables in the WYSIWYG FrontPage Editor. Drop in sophisticated, interactive functionality using FrontPage components.
- Comprehensive management tools allows one to quickly build and maintain well-organised Web sites. Automatic hyperlink maintenance ensures one never have to worry about broken links.
- Seamless integration and browser integration makes it easy to customise and view your Web site's content.

4.5 Publishing your web page

4.5.1 Client/server relationship

As mentioned previously the Internet utilises TCP/IP in order of all the computers to communicate. This should be kept in mind them referring to client/server relationships.

Servers are big computers that offer services to client computers. End-users, such as you, use client software to connect to a server, who gives you access to various files on the Internet.

Usually the client software that you use to connect to a server is called dial-up networking, which is part of Windows 95/98. This allows you to dial in to your service provider (companies like Etrax, M-Web, Iafrica, Telkom etc.), that connects you to the Internet via their server. The server interacts with your

software, which you control via your Internet browser (Internet Explorer or Netscape) to view certain files.

Servers and clients have a fixed set of rules or protocols (TCP/IP) that are built into their respective programs. Web servers on the Internet use Hypertext Transfer Protocol (HTTP) for information exchange and software applications such as Netscape and Explorer are the client applications that support HTTP and allow you to view documents on the World Wide Web.

4.5.2 What is web space?

In order for you to publish your web page, you need to secure data space on a server. Your service provider, who in many cases allocate a certain amount of space to you as part of your package, usually does this. This space is not unlike your hard drive, as it is used to store all the files that are needed to display your web page or pages. In order for you to publish a web site you need to FTP all the files that form part of your web site to the FTP server where your respective web space reside.

4.6 Downloading from the web

To download a file from the Internet, first connect to the Internet, and then launch your browser. Locate the file that you wish to download, either by searching for it in the manner described above, or go directly to a download site.

Once you have located the file you want, you should see a link that says something like "click here to download", or just the name of the application. Click on the link with your left mouse-button. This should bring up a dialogue box where you need to choose the folder to which you want to save the file. You also need to name the file, but if you choose not to name it, the browser will

automatically allocate the same name as used by the web site from where you are downloading.

After filling in the relevant boxes in the dialogue, click ok, and the download should start. Download times vary with the size of the file, and the available bandwidth on the relevant server.

Downloading small utilities is a part of any programmer's routine. Many utility programs are available for free or subject to a limited evaluation period on the Internet, which can make a programmer's job so much easier.

4.7 Other Utilities

Defining font colours, for instance, can be tedious work if you do not have a colour chart that supplies all the different colour codes. Download a colour picker from the net, image mappers and various other utilities to ease the design process.

There are little programs available that will perform just about any chore for you – IF you are willing to look for them, and also to spend the time downloading and learning them.

One of the greatest sources of utilities on the Internet is the Tucows site, which was previously mentioned. This site, which can be found at http://www.tucows.co.za has a multitude of different utilities, which are nicely grouped for easy navigation. Tucows is a very reliable, stable source, which is mirrored at many sites around the world. If you are looking for anything related to the Internet, give Tucows a try!

KNOWLEDGE REVIEW

1. Explain the difference between the WWW and the Internet.

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2. What is a browser?

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3. Name any 2 types of search engines.

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5. Explain client/server relationship

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6. CONCLUSION

By now you should have a basic understanding of the functional elements that make up the Internet. To use and understand all the elements involved in the Internet can be a tedious task. It is advised that you focus on one area at a time and in this way build up your knowledge base regarding the Internet and the Web. Many have found that after some time one goes into what is known "information overload". Because of the vast resources available on the Net you should not concern yourself with obtaining ALL the information you need in the shortest time, for this can take a lifetime to realise.

If your aim is to start designing a web site and create a presence on the Web it is a good idea to take it step by step and start with the basics. Soon you will gain enough knowledge to move on the more integrated and interactive means of designing. Remember whatever your use of the Net is let it work for you and not visa versa!