

'Net Connections - The Internet in the Classroom and Staffroom

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Notes on the Internet

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Peter Bilodeau, Co-ordinator

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Introduction

Seven Reasons Why

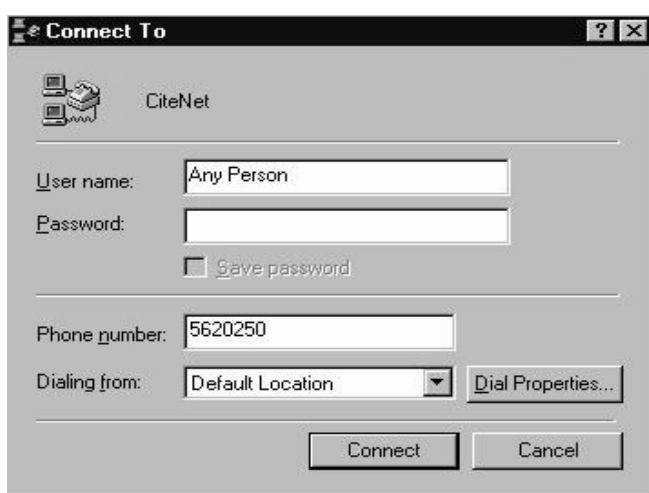
by

Brad Williams

(from The Internet for Teachers)

1. The Internet presents real-world examples of integrated knowledge. You'll rarely see a Web page that features information on only one specific subject for a specific purpose. If students access the Centre for Disease Control (<http://www.cdc.gov>), they not only receive information concerning the sciences of virology and biology but also geographic data about landforms and climate.
2. The Internet facilitates collaborative learning. You will soon learn that one of the most efficient ways for your students to use and explore the resources available on the Net is through small-group, project-centred activities. The Internet is just so enormous and offers so many resources that teamwork makes a positive difference in the quality of the outcome of the search.
3. The Internet offers opportunities for telementoring. The Internet offers incredible opportunities to meet and learn from people around the globe on just about any topic you can imagine.
4. The Internet is all about communicating. The Internet represents a communication potential that will probably have a profound impact on everything from politics to potato farming. Logging on to the 'Net and chatting live with anthropologists exploring Mayan ruins is an amazing experience.
5. The Internet can cater to different learners in different ways. Information can be targeted with excruciating precision. There is something for everyone - reluctant learner and bookworm alike.
6. The Internet is a culturally, racially, physically and sexually blind medium. Outer appearances are unimportant to communication on the 'Net.
7. We have an obligation to society. Can we afford to leave our students behind? Enough said.

Netscape - Step by Step

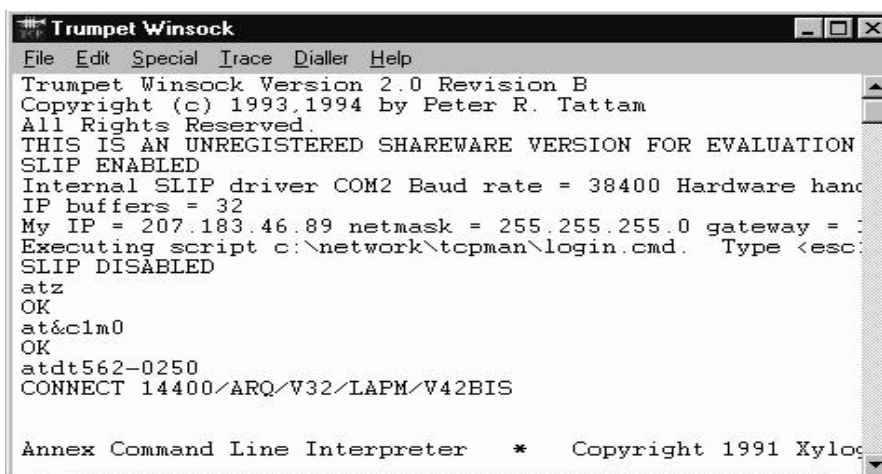


The first thing you must do is *logon* to the 'Net. This is done by connecting to a provider - the company to whom you call by modem to connect to the Internet. This may be accomplished in many ways with many different pieces of software, all of which are called *Winsocks*. Internet entry is

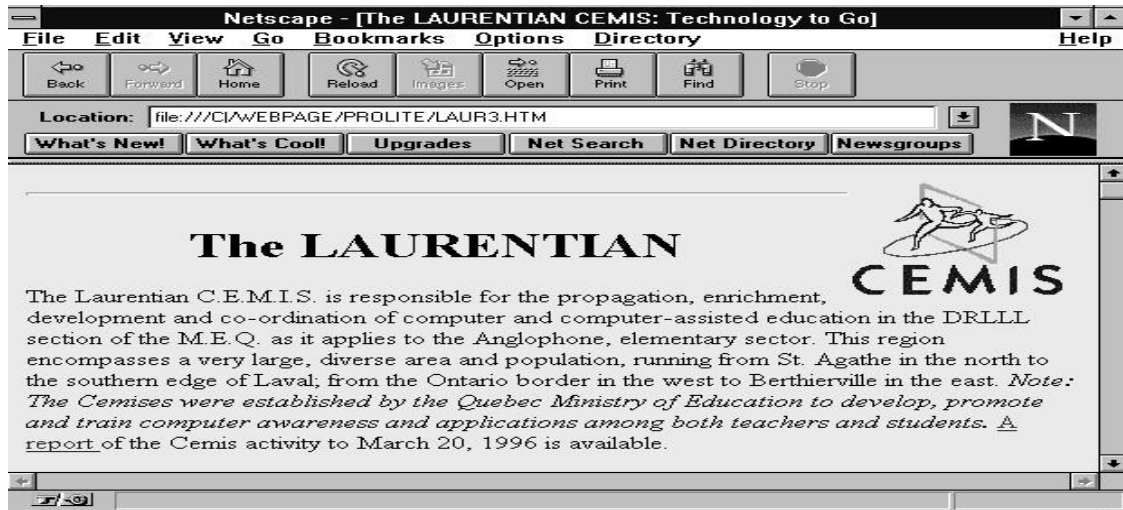
always facilitated by your Internet provider.

Therefore, enter your browser by whatever mean after your *Winsock* program has initiated connection.

Upon entry, you will



notice that the page, i.e., the area enclosed by the tool bar on top, and scroll bars



on the bottom and right, advertises your provider or whichever educational service to which you are attached. This is called the *home page* - the point on the net from which you enter and exit.

Look at your screen carefully and find the word, *Location*, next to which is a white bar containing an Internet address:

http://www.citenet.net/main/dialup_start.html
(Note: home page addresses may vary)

The location bar is the core of the browser. Much like a telephone or a fax



number, it allows to virtually travel anywhere from Abitibi to Auckland in a few seconds.

There are two ways to use the locator:

1 - If you know the address, you can erase the address your home page. (*To erase, highlight the address, i.e, press click, hold and drag the mouse pointer over the address. The result will be a blue area covering, or highlighting, the address. Press the delete key.*)

Once the address has been erased, type in the following new address:

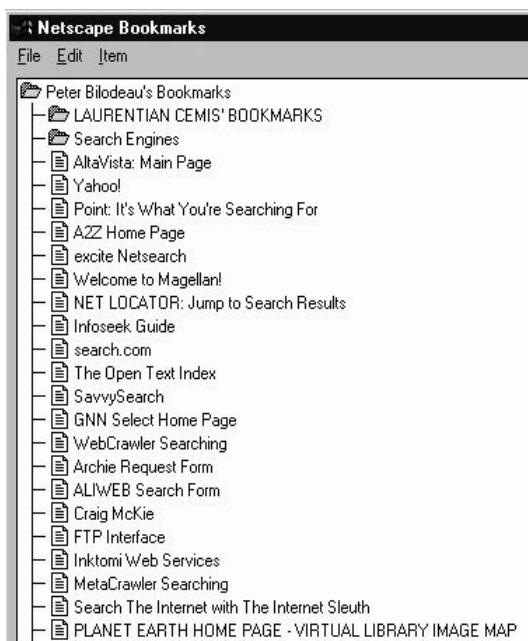
<http://yahoo.com/>

Be sure to press the **Enter** key.

You will note that your provider's home page has been replaced by that of Yahoo's. Take a moment and pat yourself on the back. You have just passed two milestones - making your first 'net connection and, contacting your first search engine.

The Internet is immense. Though its information potential is enormous, finding that information can be very difficult. Search engines were created to answer the challenge.

Every page mounted on the Internet contains a *URL*, e.g., <http://rtsq.grics.ca/ssn/index.html>, and a twenty-five word *header* which is not visible to the internaut.



Search engines look through these headers for words you have placed in your search query. It should be noted that one search engine cannot adequately deal with the Internet. You will find that a proper search requires the results of at least a few search engines.

2 - The second way of using the locator is not to use it. The *bookmark* feature, found along the tool bar, can

prove to be invaluable. Bookmarks are a way of recording (saving) 'net locations easily.

Click Bookmarks, followed by View Bookmarks. A panel will pop up. (Note: If you are taking a workshop given by the Laurentian CEMIS, a bookmark file, entitled *Laurentian CEMIS Bookmarks*, will be in place. Should you be reading this document at home, you may request the bookmark file from the CEMIS.)



Examine the bookmark listing. You may do so by using the scroll bar on the right. After you have finished, return to the top of the file. Find the bookmark entry entitled, Yahoo. Click the entry once. You will notice that Yahoo's Internet address appears at the bottom of the panel.

Click the Yahoo entry once again.

Looking at Yahoo's search screen, we see a white search bar and a certain amount of hypertext-linked directory of general topics, i.e., Arts and Humanities, Architecture, Photography, Literature, Business and Economy, Computers and Internet, Education etc.

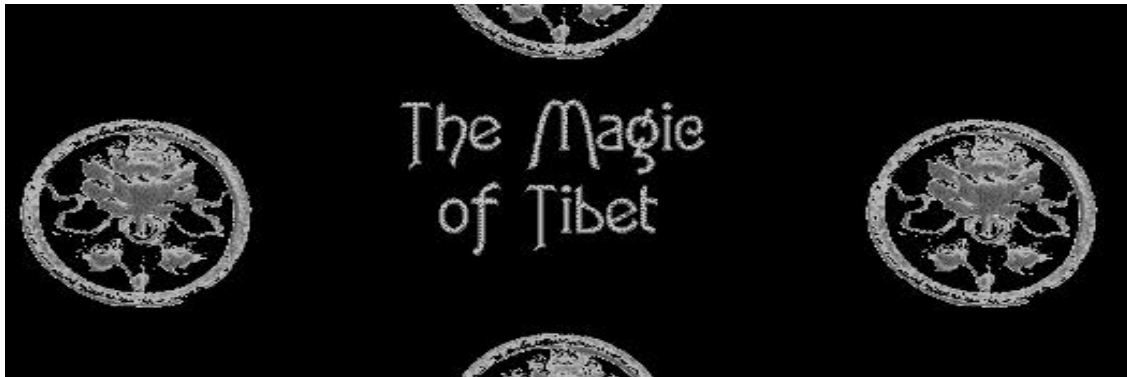
We have the choice of searching by directory topic (hypertext links) or by word (search bar). For the purposes of demonstration, we are going to search for information on religious freedom in Tibet.

Therefore, click your mouse pointer in the white search bar at the top of the screen. Type in the word - *Tibet*. Click the *Search* button.

For our purposes here, we are going to choose the first hypertext selection, Regional: Countries: China: Provinces and Regions: Autonomous Regions: Tibet. Click this selection now.



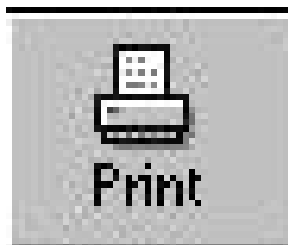
Yahoo returns with the further results of its search. Scroll down until a hypertext article entitled, Magic of Tibet, The. Click that article now.



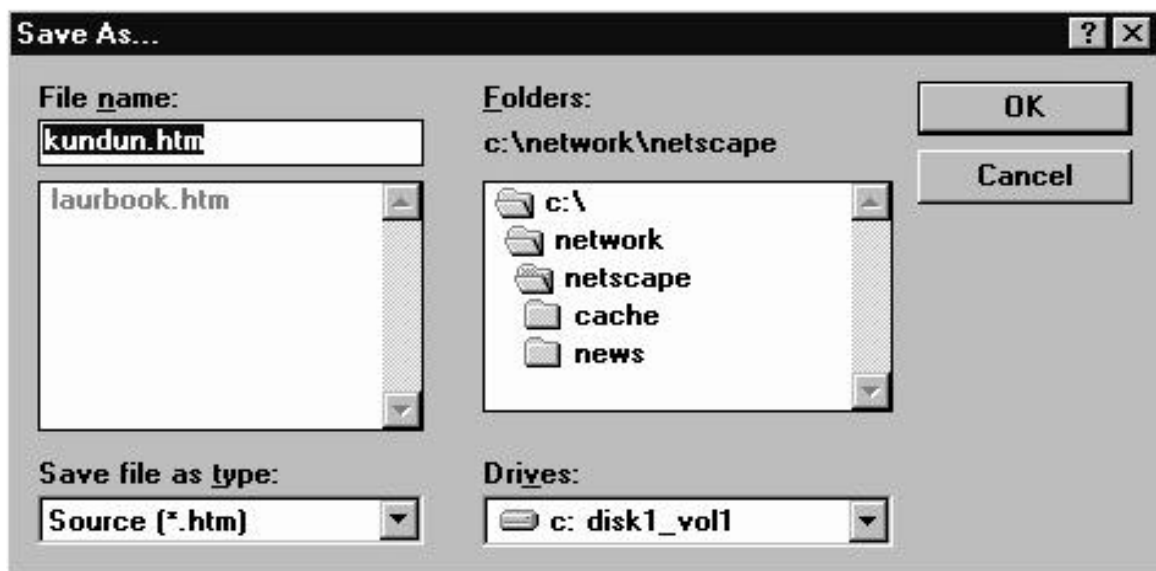
The article loads an entirely graphic image. This leads to the question: Where do I go from here since no hypertext is visible? Move your mouse pointer over the Tibetan dragons. Look at the bottom of your screen. You will notice a URL appears. Click one of the four graphics.

The next screen contains more information about the situation in Tibet. Select the article under CULTURE entitled, China threatens Scorsese film about Dalai Lama by clicking on it.

If we find the article, Disney defies China over Scorsese's Dalai Lama film, *Kundun*, we can *print* it or *save* it.



To *print* this article, click the *Print button*. Please note that the screen will be printed exactly as it appears to scale, graphics included.



To *save* this article, click on the *File* option above the toolbar. Select *Save As...* The *Save* panel will appear on the screen.

For all intents and purposes, Netscape's *Save* function is identical to Windows with one exception. You can save the file either as a source file, i.e., a file with the extension *.htm* or as a text file with the extension *.txt*.

If you choose to save the file as an *.htm* file, you will save the file exactly as it appears in the browser, graphics and all; however, if you choose the *.txt* option, it will only save the text. Should you wish to transfer the material to a word processor, you should select *.txt* as the type.

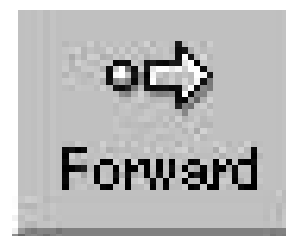
Note: It is strongly suggested that you create a separate directory to store your saved web pages and that you transfer your text files to your word processor documents directory. To do this, double-click the C:\folder in the

Directories Panel. This will display all your directories. Find the directory in which you wish to save, e.g., *c:\office\wpwin\wpdocs*; click the **OK button**. Note further that the text will be raw - it will have to be reformatted.

When you wish to retrieve saved web pages, click *File* followed by *Open*. Select the directory in which your web pages were saved and then, the file you wish to view. You may do this *off-line*, i.e., when you are not connected to the 'net.



It's time to move on. Find the *Back button* and click it three (3) times. This will return us to the *Yahoo Search Results Page*. You may observe that you are moving faster than when these pages were originally loaded. This is because they have been stored temporarily in a disk cache and not being re-accessed by your provider. You can return to your previous position by clicking the *Forward button* three (3) times.



If you have been at one site for longer than fifteen minutes, it is suggested that you Reload by clicking the button of the same name. This will signal your provider to re-connect with the web page in question. Why? Many providers disconnect clients after 20 - 30 minutes of idle time.

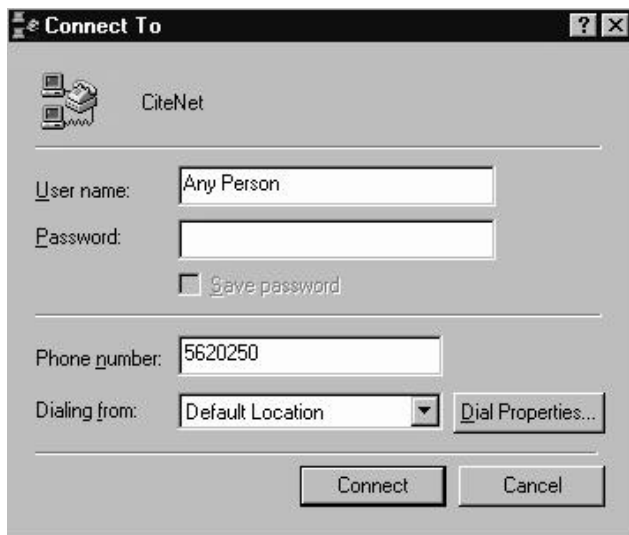
Should you wish, you can continue to explore Tibet virtually; however, for now, click the Home button on the toolbar. This will return you to your provider's home page.



In this section, you have learned how to:

1. **access your provider.**
2. move through the Internet via:
 - a. use of the **Location bar.**
 - b. **Bookmarks.**
3. access a **search engine.**
4. **manipulate** a search engine for information on a specific topic.
5. **print** a web page.
6. **save** a web page
 - a. as a text file.
 - b. as a html file.
7. **change** saved locations.
8. move **back** and **forward.**
9. **Reload** a web site.
10. Return **home.**

Microsoft Explorer - Step by Step



The first thing you must do is *logon* to the 'Net. This is done by connecting to a provider - the company to whom you call by modem to connect to the Internet. This may be accomplished in many ways with many different pieces of software, all of which are called *Winsocks*. Internet entry is always facilitated by your Internet provider.

Therefore, enter your browser by whatever mean after your Winsock program has initiated

connection.

Upon entry, you will notice that the page, i.e., the area enclosed by the tool bar on top, and scroll bars on the bottom and right, advertises your provider or whichever educational service to which you are attached.

This is called the *home page* - the point on the net from which you enter and exit. Look at your screen carefully and find the word, *Location*, next to which is a white bar containing an Internet address:

http://www.citenet.net/main/dialup_start.html
(Note: home page addresses may vary)



The location bar is the core of the browser. Much like a telephone or a fax number, it allows to virtually travel anywhere from Abitibi to Auckland in a few seconds.



Note: You may find that the Address/location bar is not visible (see image below). If this is the case click on the Links button to the far right of the screen, under the Internet Explorer icon. The Address/location bar will appear.



There are two ways to use the locator:

1 - If you know the address, you can erase the address your home page. (*To erase, highlight the address, i.e, press click, hold and drag the mouse pointer over the address. The result will be a blue area covering, or highlighting, the address. Press the delete key.*)

Once the address has been erased, type in the following new address:

<http://yahoo.com/>

Be sure to press the **Enter** key.



You will note that your provider's home page has been replaced by that of Yahoo's. Take a moment and pat yourself on the back. You have just passed two milestones - making your first 'net connection and, contacting your first search engine. The Internet is immense. Though its information potential is enormous, finding that information can be very difficult. Search engines were created to answer the challenge.

Every page mounted on the Internet contains a *URL*, e.g., <http://rtsq.grics.ca/ssn/index.html>, and a twenty-five word *header* which is not visible to the internaut.



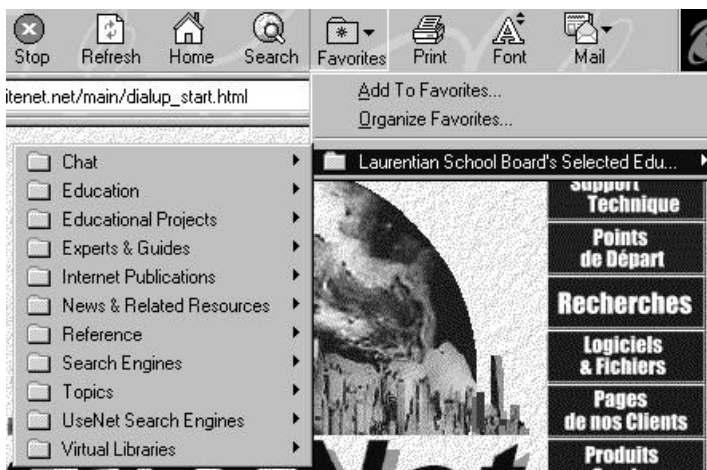
Search engines, like Yahoo, look through these headers for words you have placed in your search query. It should be noted that one search engine cannot adequately deal with the Internet. You will find that a proper search requires the results of at least a few search engines.

2 - The second way of using the locator is not to use it. The *favorites* feature, found along the tool bar, can prove to be invaluable. Favorites are a way of recording (saving) 'net locations easily.

Click the Favorites icon, followed by Organize Favorites. A panel will pop up. (*Note: If you are taking a workshop given by the Laurentian CEMIS, a favorites folder, entitled Laurentian School Board Selected Sites, will appear*

below the Organize Favorites Option. Should you be reading this document at home, you may request the favorites folder from the CEMIS. For loading instructions, please refer to Appendix A.)

Examine the various folders. You may do so by double-clicking the folder icons to the left of the title. After you have finished find the folder entry entitled, Search Engines. Double-click; then click More Favorites. You will notice that Yahoo's Internet address appears at the bottom of the new panel.



Click the Yahoo icon.

Looking at Yahoo's search screen, we see a white search bar and a certain amount of hypertext-linked directory of general topics, i.e., Arts and Humanities, Architecture, Photography, Literature, Business and Economy, Computers and Internet, Education etc.

We have the choice of searching by directory topic (hypertext links) or by word (search bar). For the purposes of demonstration, we are going to search for information on religious freedom in Tibet.

Found **10** Category and **200** Site Matches for **Tibet**.

Yahoo! Category Matches (1 - 10 of 10)

Regional: Countries: China: Provinces and Regions: Autonomous Regions: **Tibet**

Education: Organizations: Student Organizations: Political: Students for a Free **Tibet**

Society and Culture: Religion: Buddhism: **Tibetan**

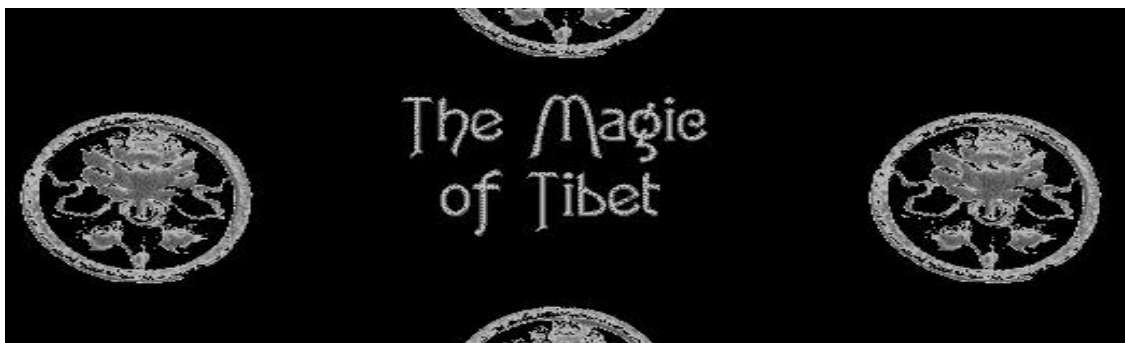
Business and Economy: Companies: Animals: Dogs: Services: Breeders: Mastiffs: **Tibetan Mastiffs**

Therefore, click your mouse pointer in the white search bar at the top of the screen. Type in the word - *Tibet*. Click the Options button.

For our purposes here, we are going to choose the first hypertext selection, Regional: Countries: China: Provinces and Regions: Autonomous Regions: Tibet. Click this selection now.

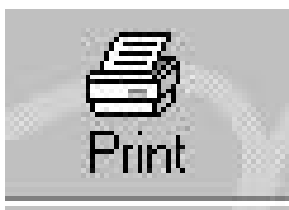
Yahoo returns with the further results of its search. Scroll down until a hypertext article entitled, Magic of Tibet, The. Click that article now.

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*Note: It is strongly suggested that you create a separate directory to store your saved web pages and that you transfer your text files to your word processor documents directory. To do this, double-click the C:\ folder in the **Directories Panel**. This will display all your directories. Find the directory in which you wish to save, e.g., c:\office\wpwin\wpdocs; click the **OK button**. Note further that the text will be raw - it will have to be reformatted.*

When you wish to retrieve saved web pages, click *File* followed by *Open*. Select the directory in which your web pages were saved and then, the file you wish to view. You may do this *off-line*, i.e., when you are not connected to the 'net.

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If you have been at one site for longer than fifteen minutes, it is suggested that you Refresh by clicking the button of the same name. This will signal your provider to re-connect with the web page in question. Why? Many providers disconnect clients after 20 - 30 minutes of idle time.





Should you wish, you can continue to explore Tibet virtually; however, for now, click the Home button on the toolbar. This will return you to your provider's home page.

In this section, you have learned how to:

1. **access your provider.**
2. move through the Internet via:
 - a. use of the **Address bar.**
 - b. **Favorites.**
3. access a **search engine.**
4. **manipulate** a search engine for information on a specific topic.
5. **print** a web page.
6. **save** a web page
 - a. as a text file.
 - b. as a html file.
7. **change** saved locations.
8. move **back** and **forward.**
9. **Refresh** a web site.
10. Return **home.**

Internet e-mail

Though there are many e-mail packages available, the most popular are: Eudora, Pegasus, cc:Mail and Microsoft Explorer Mail. Regardless of the package you or your school board chooses, they all function in basically the same manner. For our purposes, we will be discussing Microsoft Explorer Mail.

Mailers allow you to send and receive messages and attached files via the Internet. The advantage of *e-mail* is speed and ease. A typical message will reach its destination in less than three minutes - be it destined for Sydney, Australia or Ottawa. Moreover, unlike surface mail and faxes, it's free (excluding your Internet line charges, of course). Moreover, e-mail allows you to send and receive attached files which could be larger documents, programs, graphic images etc.



Today, we will concentrate on sending a simple message with an attachment (a file) to another e-mail user. The first step is to locate and click the *mail* icon along the toolbar.

For those who may be working with Eudora or Pegasus, look for the appropriate icon in the Windows 3.1 Program manager panel or in the Windows 95 Start menu. Upon clicking the mail icon, another panel appears which allows you the choice of activities: *Read Mail*, *New Message*, *Send a Link* and *Read News*.



Normally, we would begin by clicking *Read Mail*; however, since we can be reasonably assured that no one has sent us mail (assuming our accounts are new), we will click the *New Message* option.



The message panel pops up. For those of us who have had experience with other mailers such as cc:mail, it will appear familiar.



All messages sent along the net follow an addressing protocol, i.e., messages are sent to an address rather than a name. One would not send a message to *Peter Bilodeau*, rather it would be sent to *bilodeap@citenet.net*

The Internet address - bilodeap@citenet.net - becomes more understandable when considering the following:

The address is broken into two parts - bilodeap and citenet.net. *bilodeap* is an 8-character (or less) alphanumeric tag chosen by the account owner to represent himself. I could have as easily chosen Peter_B, PineHill, Laurcem, Bilodeau or any other tag not already used by one of my provider's accounts. *Note that you cannot change the tag without telling your provider. If you do, your mail account will not work.*

The second part of the address - citenet.net - really represents an international Internet provider number, in CitéNet's case, - 207.183.47.101. In as much as *bilodeap* identifies an account within a provider's domain, citenet.net

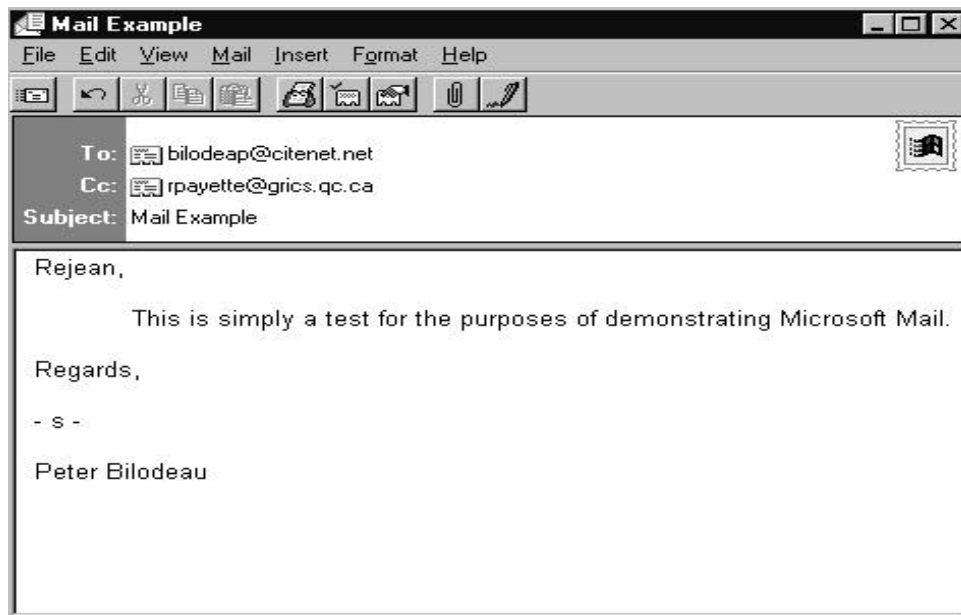
identifies CitÉNet to the international Internet community.

Returning to our message panel, you will notice three headers - *TO:*, *CC:*, and *Subject*. Unless you have retrieved the address from this mailer's address book (to be discussed later), the entry into the *TO:* header will always be the Internet address of the person to whom you are writing, i.e., bilodeap@citenet.net not Peter Bilodeau.

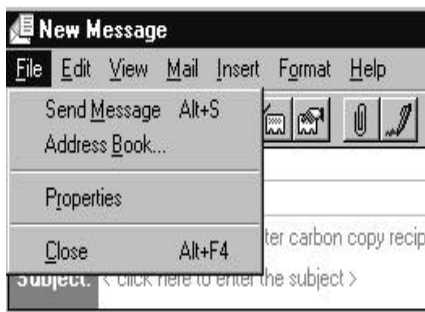
Therefore, make sure your cursor is flashing next to the word, *TO:* and type the following into the address area: bilodeap@citenet.net.

The header, *CC:*, is only important if you plan to send a copy of your message to someone else; however, the header, *Subject:*, is crucial. Netiquette demands that e-mail messages contain a subject header. The reason is that it makes for easier editing when dealing with a large amount of incoming mail.

Therefore, move your mouse pointer to the area just right of the word, *Subject*. Click once and type in: Mail example.

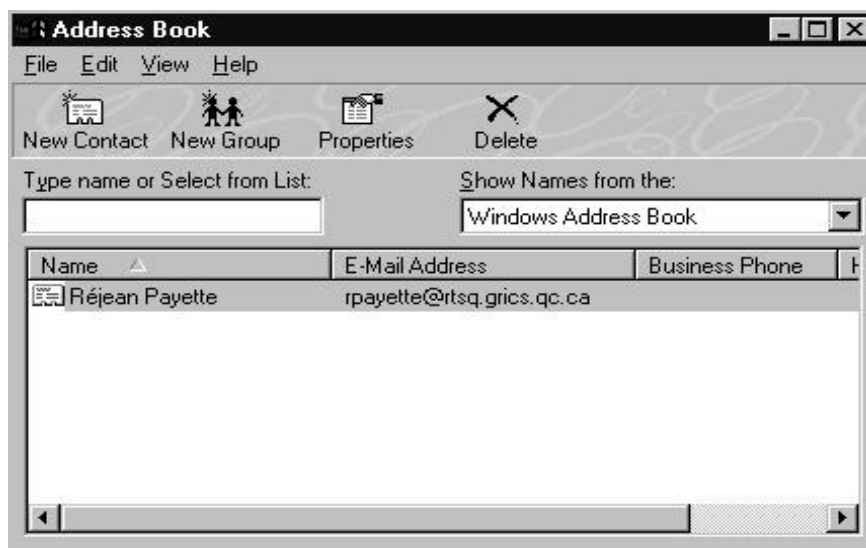


Move your mouse pointer to the message area below and, again, click once. Write a one sentence message, ending with your name. When you're finished turn your attention to the toolbar immediately above your message. Click the File option.

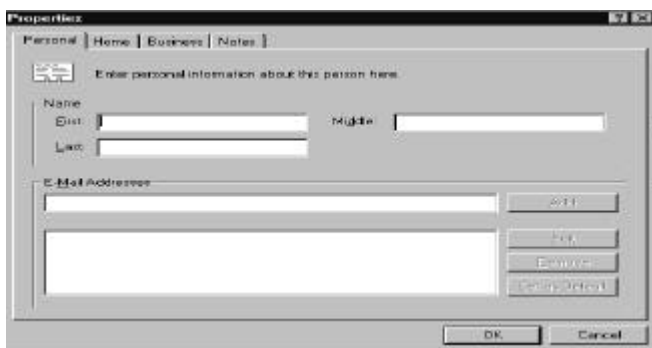


The sub-panel opens. Notice that Microsoft Mail contains an address book. Click that option now. You've opened up the address book feature - a very, very handy tool. Like telephone numbers, Internet addresses can be difficult to remember and just as difficult to store. This feature allows you to store the addresses you wish to retain on the fly, as it were... and, of course, they are retrievable and pasteable instantly, bypassing the need to type in the address of someone with whom you've already made contact.

Up to this point, we've opened a new message; addressed the message; entered a subject header and written the message - excellent! Now, we're going to file the address. Click the *New Contact* button.



You will notice a secondary screen replace the address book panel. In fact, there are three levels below this one just to store information - an amazing amount of data which was really created for the business user. For our purposes, we will just fill out what is absolutely necessary, i.e., *first name*, *last name* and the *E-mail address*.



Note that Microsoft Mail will not accept an address without a last name nor can you enter a Company name without first entering a last name on the first properties page.



With the first properties page opened button enter the following information in the appropriate boxes: Peter Victor Bilodeau; bilodeap@citenet.net. Be sure to finish by clicking the *Add* button.

If you feel adventurous, you can move to the third page - *Business* - to further complete the profile with the following information: Laurentian CEMIS, 455 Court St., Lachute, Quebec, Canada J2H 1T2; phone: (514) 562-2401; fax: (514) 562-1541; co-ordinator; <http://rtsq.grics.qc.ca/Laurcem/Welcome.html>

Armed with the first name in our address book, let's return to the address book panel by clicking the OK button at the bottom of the properties sub-panels.

Once there, find the *New Groups* icon and click it once. By selecting this option, you will be able to link related addressees together. For instance, you can link all the addresses in your address book who are participants in a project such the Small Schools Network or Our Region. By doing so, you will be able to send one message many times.



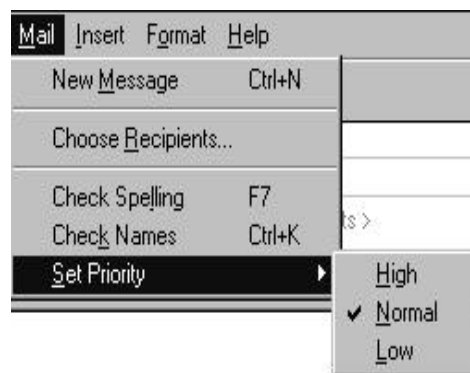
 A screenshot of a software dialog box titled "Properties". The dialog has a standard Windows-style title bar with a question mark and a close button. Inside, there is a tab labeled "Group". Below the tab, there is a small icon of two people and a block of instructional text: "To create a group, type a name for your group, and then add members. After you create a group, you can add or remove items at any time." Below this text is a text input field labeled "Group Name:". Underneath is a section titled "Members" which contains a large empty rectangular box. To the right of this box are three vertically stacked buttons: "Add", "Remove", and "Properties". At the bottom of the dialog is a "Notes:" label followed by a large empty text area. At the very bottom of the dialog are two buttons: "OK" and "Cancel".

If you wish at some future point to create a group, simply name the group in the appropriate box. Follow this action by clicking yet another *Add* button; a property box will pop up. Select the addresses you wish contained in your new group. Exit this panel.

When you return to the address book panel, you'll immediately notice a new group entry. If you have message for your newly created group, just select it. The addresses contained will be transferred to your *New Message*. Return to the *New Message* panel. You can do this by clicking the X box at the top right of the panel.

During your Internet E-mail journeys, you may want to write a message to a number of people yet not wish to create an address group. To do this, click Mail along the tool bar. A sub-panel pops up.

Selecting *Choose Recipients* will render a screen similar to the of *New Groups*. Choose the names of those to whom you wish the message sent. While we're here it should be noted that Microsoft Mail contains a *simple spell-checker*. The spell-checker will always check messages before there are sent.



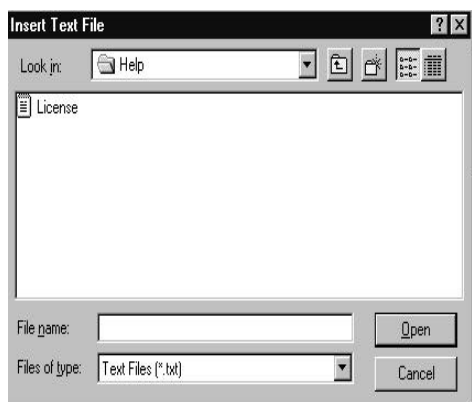
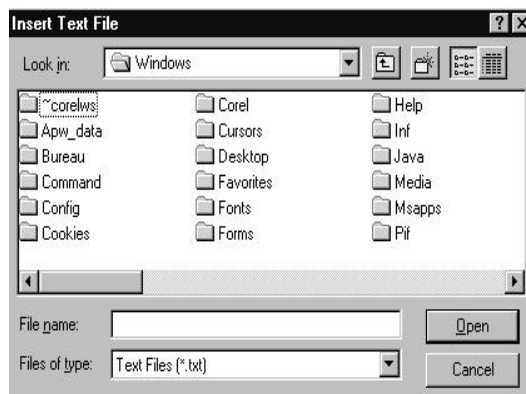
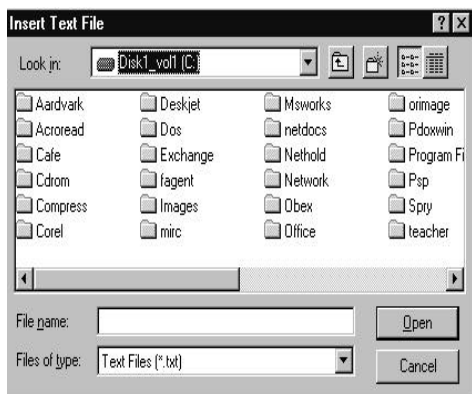
From time to time, you may wish a message to move through the system faster than normal. To enable quicker travel - bordering on the speed of light - click *Set Priority* and select *High*.

A large portion of a mailer's popularity rests in its ability to send and receive *attached files* and/or *copy text files* directly into the body of a message.

To begin, click *Insert* along the toolbar. First we'll transfer a file. *Note, Microsoft Mail can only perform this transfer will simple text-based (ASCII) file, i.e., files bearing the extension .txt in a DOS format. This action cannot be done with application files, i.e., files with other extensions such as .wpd, .doc, .wks etc.*



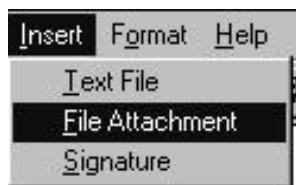
As we click on the *Text File* option, a location panel pops forward. Change the *Look in* bar's location to the C: drive. Find and select the Windows folder, followed by the Help folder. Within this folder find a file entitled License.



Once

the file has been found, selected it. If you double click it, the file will be sent directly into your new message. If you bring your mouse pointer into the body of the message and click, you will be able to edit the text file which you've just imported.

Attached files are documents which piggyback on your message rather than ride within it. This is done for two reasons: Many files are compiled, i.e., program files which cannot be transferred to text form and, secondly, attached files can be compressed; thereby, decreasing the transfer time. To attach a file, follow the same procedure as we did when we inserted the text file; however, we will select *File Attachment* rather than *Text File*.

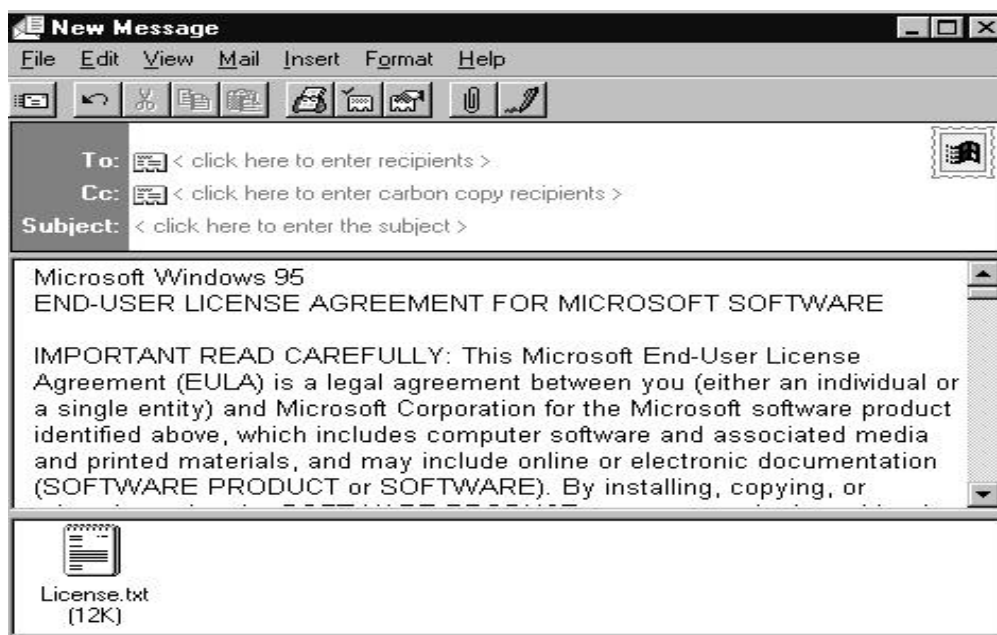
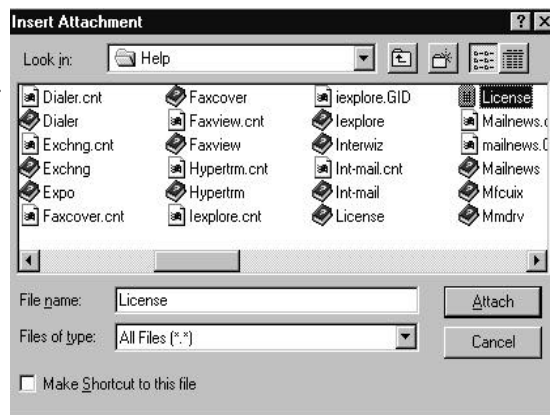


doesn't it?

Note that the panels and procedure is almost identical to that of inserting a text file.

Good, now double-click on the text file entitled License. You will note that the file did not copy itself into the body of the message but rather, appears, as an icon, at the bottom of the message.

Click *File Attachment*. As in the case of the text file insertion, a location panel pops forward. Change the *Look in* bar's location to the C: drive. Find and select the Windows folder, followed by the Help folder. Within this folder find a file entitled License - sounds familiar,

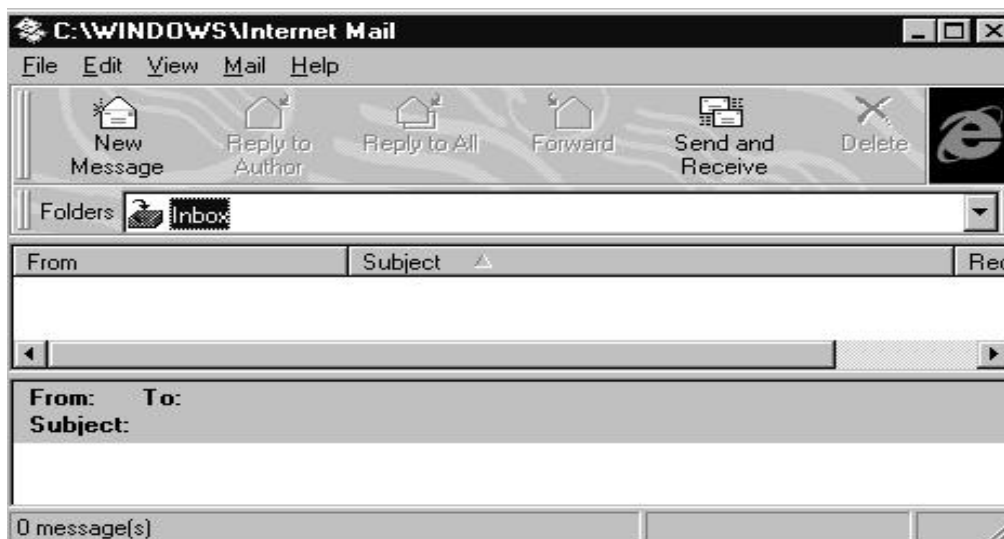


If you receive an attached file, the procedure to unattach is even easier. Click on the document icon at the bottom of the message. A panel will appear. Select the directory or folder in which you want to place the file. That's it.



Now that we learned how to create new messages, we should now send them and, in turn, receive messages from the web. Return to your browser window. Again, select the Mail icon. Click on the Send and Receive button.

If you aren't logged on, your dialup connection program will be initiated. You'll have to type in your password before the logon script is run. In a few moments, Microsoft Mail will send all of your messages in your outbox and retrieve all of the messages waiting for you in your provider's server.



The panel just below the *Inbox* folder will display the names and subject headers (that's why subject headers are important) of those messages which have just entered your system. The bottom panel will display which message is highlighted in the top panel.



If you select the *View* option along the toolbar, followed by *Preview Pane*, you can change your message display from *horizontal* to *vertical* or *none*. None simply displays the subject headers. To read a message, highlight the message and click. The message will appear in a full screen format. After you've read your messages, you may wish to answer some. This can be done by setting up a new



message; however, a easier, quicker, more customary way is to click the *Reply to Author* icon. This will copy the entire body of the message into a new message, along with the sender's address. The subject will be the same except the term *Re:* will be inserted before the subject header. Note that it is considered "Netiquette" to keep the substance of the message in your reply - but only the substance. *Reply to All* performs the same function but to a multi-recipient message.



The Forward option allows you to transfer a message to another address in its entirety, with or without your comments.

If you click the down arrow to the right of the Folders bar, you will see that files can be moved to and from four (4) folders: Inbox, Outbox, Deleted Items and Sent Items. This can be very useful when items are accidentally erased or when you wish to re-send a message.

In this section, you have learned how to:

1. **Create** a new message.
2. **Address** a message.
3. **Save** an address in the **address book**
4. Create a new **address group**
5. Write a **multi-recipient message**
6. Set a message **priority**
7. Use the **spell-checker**
8. **Copy** a text file into the body of a message
9. Send and receive **attached files**.
10. **Send and receive** messages.
11. Manipulate **preview panes**.
12. **"Reply to"** a message
13. **"Reply to All"**
14. **Forward** a message.

Downloading

To fully take advantage of the Internet, one must learn how to *download*. No, you won't have to carry a stove downstairs; rather, *downloading* refers to copying a piece of software from a remote web server directly to your computer.

The 'Net abounds with downloadable software. In fact, you could spend the next year downloading and only scratch the first two percent of software available. Most, if not all, software companies mount copies of their new offerings for downloading. Other individuals or companies post their product as *shareware* or *freeware*. Shareware is software posted as a demonstration model. Payment for the product is expected within a stated period if usage proves satisfactory; whereas, freeware's payment is discretionary.

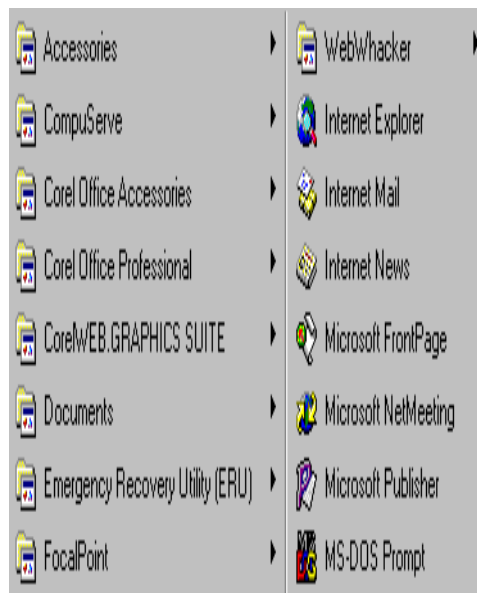
For our purposes here, we will download and discuss only those packages which may be deemed necessary in the classroom situation.

To begin with enter your Windows Menu screen and click Start. Choose Programs, followed by MS-Prompt.

This will open up a smaller panel in your Windows Menu screen at which you will notice a DOS prompt - C:\Windows>

Type in the following command:

md nethold [press the Enter key.]
cd nethold [press the Enter key.]



You will notice that the DOS prompt has changed to C:\Nethold>

You have just created a directory which will serve as an initial repository for the software which we will download.

At the prompt, C:\Nethold>, type exit, followed by pressing the enter key.

If you are were in your web browser before this operation, press Alt Tab until your web browser's panel returns on screen. If you weren't in your browser, initiate either Netscape or Microsoft Explorer now.

PKZIP

Pkzip is a utility program which *compresses* files, i.e., it makes files smaller in order to shorten data transmission time. Moreover, it can combine all the files in a given program into one file, thus lowering the possibility of transmission error and complication.

Though Pkzip comes in a Windows version, the DOS version is considered by many easier to use and more direct.

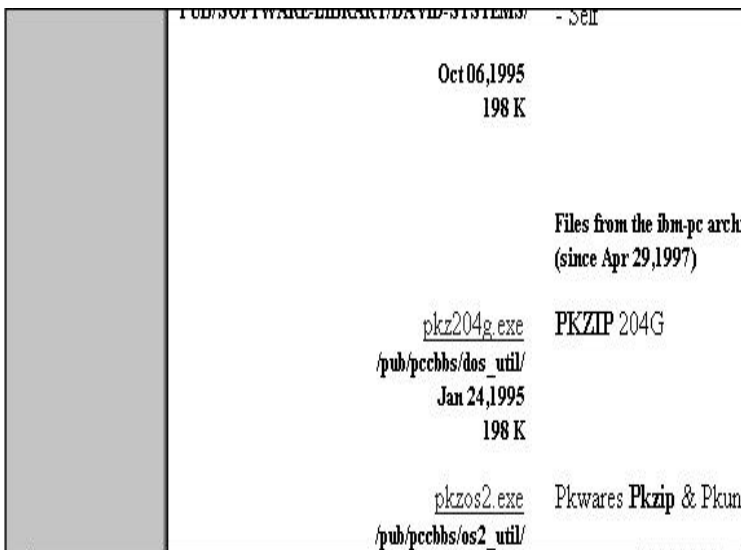
To download Pkzip, first delete the address appearing your location panel as you have done previously. In its place, type in the following address:

<http://www.shareware.com>

Doing this will bring you to C/Net's shareware site where you can find an amazing amount of free, or nearly free, software.



You'll notice a query bar under which is platform selector bar next to the *Search* button. Enter **Pkzip** in the query area; click the platform selector bar's down arrow and select **DOS**; finally, click the **Search** button.



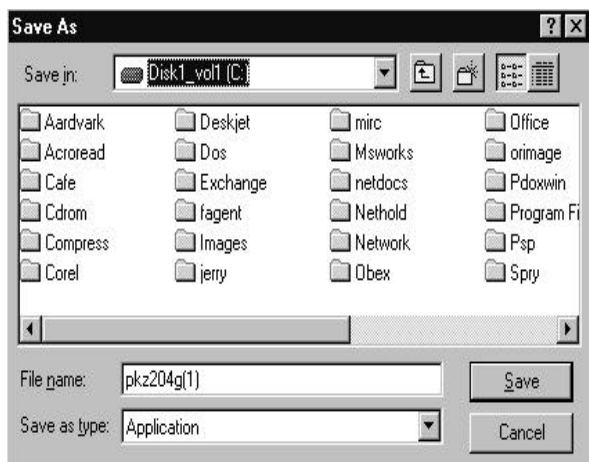
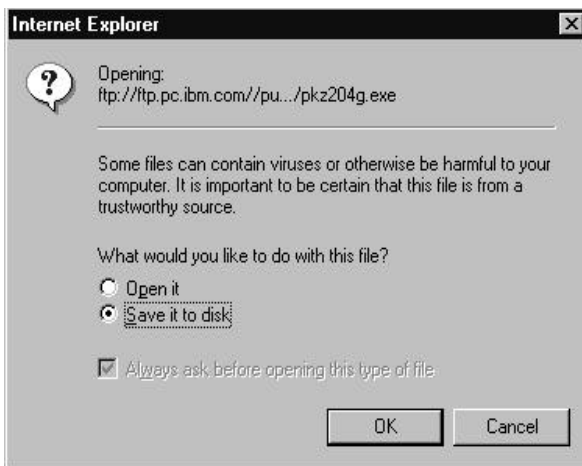
When the next screen appears, scroll downwards until you find *pkz204g.exe*.

Double click on the file.

A display panel will appear. Make sure that *Save to Disk* is selected and click OK.

The program will then prompt you to select the directory in which you want this file saved.

Select our newly created directory, *Nethold*, and click *Save*.



Once you have finished downloading, the next step is to de-compress the file. Click the *Start* button at the bottom of your screen, followed by the *Programs* icon. At the panel which follows, select and click *MS-DOS Prompt*. This will bring you into a DOS panel. Type the following series of commands (Be sure to press Enter between each command line):

```
cd\  
md compress  
cd compress  
copy c:\nethold\pkz204g.exe c:\compress  
pkz204g
```

After you finish typing the last line, the file will decompress. After which, you will have a fully operational copy of Pkzip which will allow you to compress or uncompress files at will.

Just a brief note to explain the command lines you typed in order to reach this point. The *cd* changed your directory from *C:\Windows* to *C:*, the root directory in which we create all other directories. The *md compress* command created a directory named *compress* while the *cd* command changed the directory to *compress*. The *copy* command copied the file from the nethold directory to the new directory, compress; and finally, *pkz204g* executed the self-extracting zip file.

These file come in two forms: Files which end with the extension *.exe* and those which end with *.zip*. Exe files are self-extracting, i.e., all one has to do is execute the file name at the DOS prompt or in the Run box and the file will uncompress; whereas, files with the *.zip* extension require a command line to decompress. Examples of line commands follow. *Note in all cases, the zipped file is named file1.zip.*

To uncompress a file ending with a .zip extension:

```
PKUNZIP FILE1.ZIP
```

This will allow you to *unzip* (uncompress) the file, *file1.zip*. This command assumes that you have already transferred the file to its own directory. It further assumes that the *pkunzip* file exists in, or has been pathed to, the directory where *file1.zip* rests. The term *path* refers to a command which exists in a file called *autoexec.bat*. Modifying this program will allow you to access your zip program from any directory in the hard drive. Should you wish to modify this program, please contact me by one of the methods listed at the rear of this manual and I will forward detailed instructions.


```
PKZIP FILE1.ZIP C:\NETHOLD\PETER.EXE
```

This command would allow you to compress the file *peter.exe*, renamed the compressed version *file1.zip*.

```
PKZIP -rP FILE1.ZIP C:\NETHOLD
```

This command allows you to compress the entire contents of the directory, *Nethold*, into one file, *file1.zip*. Note that the lower case r and upper case P are not errors.

I_view32 graphics viewer

As you continue to employ the Internet in classroom situations, you will soon come to realize the need to save and view graphics for projects and/or student publications.

Therefore, return to your web browser and set the location/address bar to *www.shareware.com* as you did before. At the search bar, type in the following: **iview227.zip**. Click the Search button.

Follow the pre-established procedure, copying the file to the *Nethold* directory. Enter DOS and make a directory called *iview*. Copy the zip file and pkunzip to the *iview* directory. Unzip *iview227.zip*.

Before we use our new image viewer, we must first have an image file to view. In order to save surfing time, type the following address in the appropriate location in your web browser:

http://www.tssphoto.com/vt/g_angel/ga.html and press Enter.



You'll reach a web page displaying somewhat fanciful images of guardian angels. *If religious art offends you, forgive me but I was watching Touched by an Angel while writing this part of the manual.*

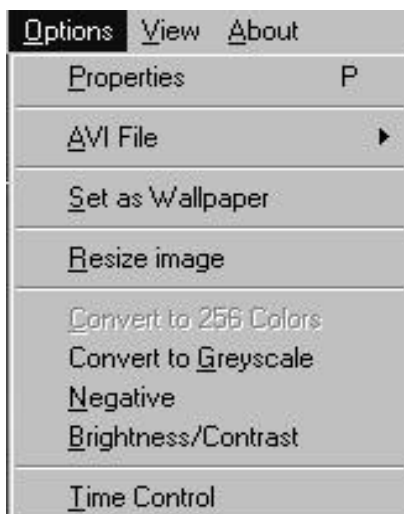
Click on any one of the images. You will notice that that image appears alone on a web page of its own. Note also that the address of the image - the last section is a file name - ends with the extension *.jpg*. This tells us that we can download the image into our hard drive.

Therefore, click *File* and choose the *Save as File* option. When asked for a location, select the *Nethold* folder/directory.



Now that we have an image file we can use our graphics viewer. Click the *Start* button at the bottom of your screen. Choose *Run*. If you have created a shortcut for your viewer, it can be accessed in the desktop folder; if not, change your folder to *iview* and double

click on **i_view32**. You'll notice a panel pop up in the top left of your screen. Click on *File* and select *Open*. Change your folder to *Nethold* and select the file named **ga3.jpg**.



Most of the features follow a standard Windows format; however, a few of the options should be discussed.

AVI files are movie files. You can *resize images* to make them larger or smaller by increasing the amount of pixels; however, if you

expand the image too much, it will look grainy. If you're going to print the image in black and white, it would be better to convert it to *grey scale*. The picture will come out much sharper.

To use this file in a word processor such as *Microsoft Works*, treat it as a drawing, i.e., click *Insert* and select *Drawing*. After the subsequent panel opens, click *File, Import Picture*. Change your directory to *Nethold* and select *ga3.jpg*. After the thumbnail sketch has been loaded, click *Update*. You'll note that your image file has been loaded into your Microsoft Works word processing file.

If you work with other word processors such as Word Perfect 6.1, you may have to convert your image file to one which is compatible to the system in which you are running. In this case, *Open* your image file in the image viewer. Click *ga3.jpg*.

At the Save as panel, rename the file with the appropriate extension compatible with your word processor. Note that other graphics packages such as **Paint Shop Pro** (discussed below) contain more conversion options.

Other Interesting Programs You can Download

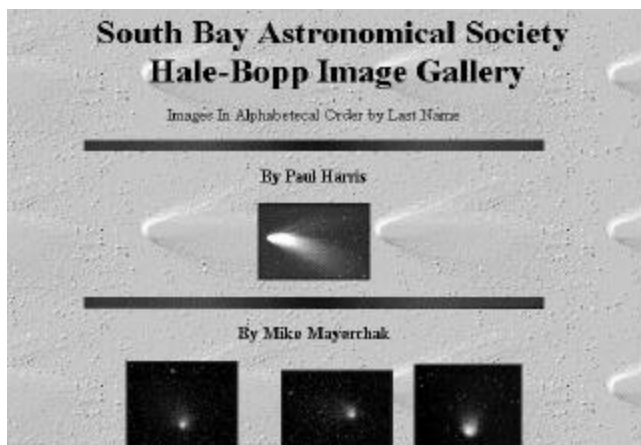
Paint Shop Pro

PSP is a complex graphics viewer. It has many more features than the viewer you have just loaded. The most interesting and unique is its ability to *capture* images, i.e., this program allows you to seamlessly cut images from your net browser's screen and save them as files.

Assuming you have already downloaded Paint Shop Pro, enter your net browser and type in the following address:

<http://www.meteorite.com/Hale-Bopp/>

The web page on the left will appear in due course. Let's assume, for the moment, that we want a picture of the Hale-Bopp comet to use in a project. We



read the web page but find that there is no opportunity to download the image - no problem.

Click on the *Start* button at the bottom of your screen. Select *Paint Shop Pro*.

Take a close look at the tool bar. Notice the option named *Capture*. Click that option now.

The first thing to do is to check your *hot key setup*. Make sure it's set for *Ctrl F12*. (This precludes conflicts with either your web browser or your word processor.) Follow this by clicking *Area*.

The PSP screen instantly minimizes and you are left back at your web browser. Move your point near to the first image at the top of the screen. Press your hot key - *Ctrl F12*. Notice that your mouse pointer has changed to a *cross*. Place the cross at the top left corner of the image and press and hold your left mouse button. Drag it to the bottom right of the image and release.



The PSP screen will pop up once again displaying your new graphics file. *Save* the file the file format you wish. Note if you wish to capture another image, you will have to select *Capture, Area* once again.

Mcopy

Mcopy is an interesting little program which allows you to copy those pesky files larger than 1.44 Mb. on multiple floppy diskettes - very valuable if you wish to move programs from computer to computer or wish to bring downloaded software home to study.

PCsetup

Should you become disconnected from your web server, PCsetup remembers where you were and re-establishes your connection.

Adobe Reader

This piece of software allows for universal word processing and printing format which is to say that you can print any file written under .pdf format. Many sites issue documents under this format.

Webwacker

A unique package which allows the teacher to download an entire web site or series of sites previous to a class. Students then can seamlessly access those files as if they were really on the 'net. Valuable for those days when your connection is down.

Global Internet Warm-up³⁸ Activities

ACTIVITY ONE

Who's Telling the Truth?

1. Divide your class into groups of reasonable size.
2. Choose a subject which would enhance your current theme.
3. Have your students search the web for information about the subject you've chosen. Be sure they examine a variety of search engines, e.g., Yahoo, Altavista, Webcrawler, and newsgroup servers such as DejaNews.
4. They'll come back with radically different information, from different sources, written from different points of view, and for different audiences.
5. Bring all the groups back together. Start the discussion with an introduction on truth, perception and discrimination in media.

ACTIVITY TWO

Charting the Flow

1. As you already know, the Web consists of many hyperlink-connected pages. Learning how they connect can provide an excellent opportunity to chart the flow graphically by major headings.
2. Have your students use large sheets of paper, crayons and/or colored pencils to create a *storybook* linking your home page to a previously selected destination, noting the possible avenues along the way.

ACTIVITY THREE

Scavenger Hunt

Have a scavenger hunt using the major news URLs such as CNN, CTV, AP etc.

ACTIVITY FOUR

In Whose Eyes?

1. Begin with a discussion of a current international news topic; one upon which the North American press seems to agree.
2. Using the Newspaper folder in your bookmarks (given that you have the bookmark file distributed during the workshop), search non-North American news sources for articles on the same topic.
3. Point out and discuss the opposing points of view.

ACTIVITY FIVE

Cyber-Zoo

There is a wealth of information on animals, endangered or otherwise, on the 'Net.

1. Write the names of animals on small slips of paper.

2. Have each student draw the name of an animal.
3. Each student would then search a number of cyber-zoos on the 'Net; downloading or printing information as he or she found it.
4. If you wish, you could finish the project off with the creation of a cyber-zoo mobile or bulletin board displaying your class' search results. A good starting point would be:
http://www.yahoo.com/Science/Museums_and_Exhibits/Zoos/

ACTIVITY SIX

Find that Town/City/Country!

Most hamlets, villages, towns and cities now have a web presence.

1. If you are teaching grade four social studies, have your students search for all the information they can find ob their town. If you live in a large urban area, such as Montreal or Laval, you can break your search into districts. In grade five, assign different cities to different students. In grade six, the same can be done with provinces, provincial capitals etc.
2. Be sure their findings include such factors as weather, climate, culture, geography etc.

ACTIVITY SEVEN

(MRE - Specific)

Religious Freedom in Tibet

As begun in an earlier section, we can continue our exploration of religious freedom in Tibet. As you remember, we first went to Yahoo, searching simply for *Tibet*.

We found, even in that simple search, a web page, *The Magic of Tibet*, which contained a number of relevant articles plus a number of links to the Dalai Lama, mandalas, and the geography of the region.

You may wish to have your students follow these links. One of those links will lead to a page entitled, *A Tour of Tibet*. There, you will find some excellent pictures, maps, flags and articles on Tibet.

You may wish to divide your students efforts so that they search by topic and/or subject.

Further to this, check the MRE folder, sub-folder class plans, for a site which contains a very interesting class plan on the construction of mandalas.

Subject-Specific Activities

Educational Internet activities can be categorized into the following areas:

1. Teacher-oriented professional research
2. Student individual and/or group research
3. Simulations
4. Communications projects
5. Multimedia diverse resource projects

Teacher-oriented professional research

Everyone needs an idea from time to time, one activity or class plan to tie together and otherwise inspired theme. Two excellent places to search for that elusive class plan are the *Web 66* and *AskERIC* servers. Both sites are listed on the bookmark or favourites file you were issued at the beginning of the workshop.

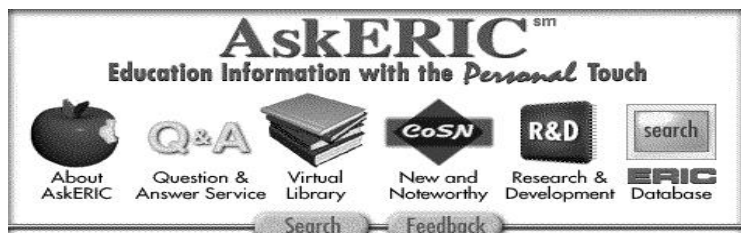


Web 66

<http://mustang.coled.umn.edu/Exploration/Exploration.html>

AskERIC

<http://ericir.syr.edu/>



When you reach AskERIC's home page, select *Virtual Library*.

Student individual and/or group research

By now, we've all had time to practice our search skills with different topics and engines. By way of summary, let's examine the topic of *Dinosaurs*.

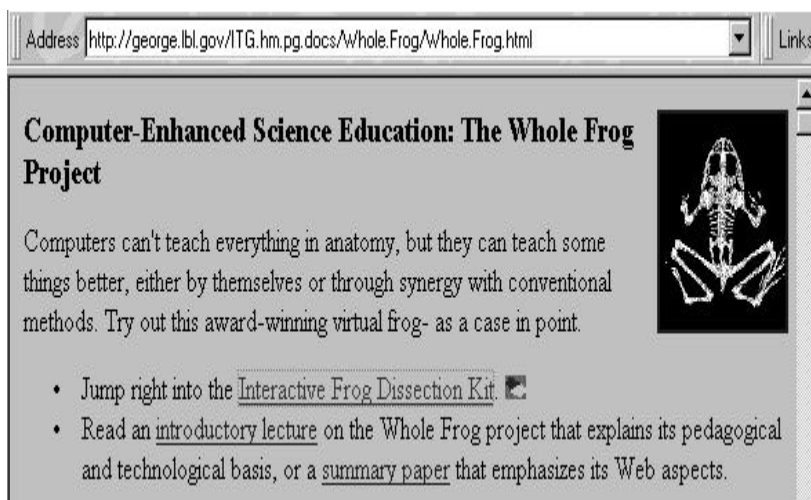
Run a series of searches through the following engines: *Alta Vista*, *Yahoo*, *Webcrawler* and *AskERIC*. Be sure to review the appendix entitled, *Search Engine Commands*, before you initiate Alta Vista. A fruitful command might be: *dinosaurs NEAR K12*. This will ensure that your search will only yield dinosaurs as it applies to elementary and high school levels.

Be sure to check out AskERIC for dinosaur-related lesson plans and the following dinosaur web pages:

<http://www.hcc.hawaii.edu/dinos/dinos.1.html>
<http://tyrrell.magtech.ab.ca/home.html>

Simulations

Since the Internet is based on the HTML language, a hypertext derivative, it is well suited for the development of simulations. Simulation software attempts to create the possibility of real-life decisions and learning in a virtual environment.



Address <http://george.lbl.gov/ITG.hm.pg.docs/Whole.Frog/Whole.Frog.html> Links

Computer-Enhanced Science Education: The Whole Frog Project

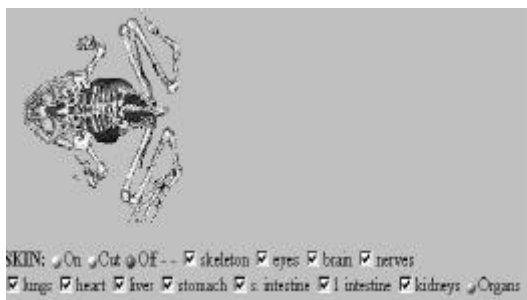
Computers can't teach everything in anatomy, but they can teach some things better, either by themselves or through synergy with conventional methods. Try out this award-winning virtual frog- as a case in point.

- Jump right into the [Interactive Frog Dissection Kit](#).
- Read an [introductory lecture](#) on the Whole Frog project that explains its pedagogical and technological basis, or a [summary paper](#) that emphasizes its Web aspects.

Due to the complexity of programming needed for solid simulations, few exist currently on the 'net; however, expect many more in the very near future.

A popular simulation site is the *Whole Frog Project*

at the address displayed on the left. The Whole Frog Project allows the student to dissect a frog virtually. The project is well documented and supported.



<http://george.lbl.gov/ITG.hm.pg.docs/Whole.Frog/Whole.Frog.html>



Other simulations include the University of California's Flylab and Earthquake projects



The Address for the above project is:

<http://vflylab.calstatela.edu/edesktop/VirtApps/IntroVirtApps.html>

For the more adventurous, there is the *Virtual Human Project*. Note that using this visual database requires a great deal of preparation. You can reach this truly unique endeavour at the following address:



http://www.nlm.nih.gov/research/visible/visible_human.html

E-Mail-based projects

For those of us who have participated in either the **Small Schools Network** or the **Our Region Project**, the concept of e-mail based events will not be a new one. Think of the Small Schools Network expanding its regional bounds to include all of North America, most of western Europe, and Australia.

That's the reach of the Global School Net located at:

<http://www.gsn.org/>



Apart from the Projects Registry which should be checked out, take a look at Harnessing the Power of the Web - an excellent series on co-operative learning as it applies to projects on the Internet.

Canadian offerings include: Canada's School Net at: <http://www.schoolnet.ca/>



... And, of course, the Quebec English Schools Network, formally, the Small Schools Network at:



<http://rtsq.grics.qc.ca/ssn/>

It should be noted that all projects on the Internet require some form of registry and commitment to participation.

Multimedia diverse resource projects

Education and the Internet is really about delivery systems, i.e., the information is secondary to the method it is transmitted into your classroom. Before telecommunication advances, a school's effectiveness was often determined by its geographic location rather than the quality of its teaching staff. Those schools far from an urban centre would suffer simply because their children would seldom, if ever, be exposed to the resources of a large city. In very real terms, the advent of the Internet has created a level playing field whereby, students in Arundel can virtually partake of the same academic resources of those in Montreal or Ottawa.

Knowing the potential of the Web, a number of organizations have begun to mount large interactive, multi-phased educational projects on the 'net. These projects seek to involve both student and teacher alike in a cohesive combination of thematic, related activities, videos, panel discussions and round tables. Two of the most notable are: **The Discovery Channel** and **NASA** - the American space agency. Type in the following address or click it in your favourites file.

www.discovery.com



The 'net presence of The Discovery Channel is the outgrowth of the television organization. Like the Alabama Project, it presents its subjects in a multimedia format - E-mail, videos, activities, and IRC chats with experts (The videos can be taped in off-hours).

Change the address to the following:

<http://school.discovery.com/spring97/themes/earthtomars/nasa/index.html>

If we were to use this selection in a class, we might follow the following pattern:

Click on Theme Overview. Read the entire page. If you have access to the Discovery Channel, tape those programs which interest you. You may read their descriptions by clicking on the appropriate hyperlink. If taping these programs proves to be impossible, then continue on - there's still much more to be done.



You may wish to review the live chats with NASA scientists as well as the realAudio recordings. They'll prove important when your students begin the activities.

It now time to follow your hyperlinks to the activities. If you can't find the

hyperlink, enter the following address:

<http://school.discovery.com/spring97/themes/earthtomars/nasa/activities.html>

Examine those activities and choose those which apply to your class' situation.

Returning to the Theme Overview page, (<http://school.discovery.com/spring97/themes/earthtomars/index.html>) examine Related Links. A particularly good site is: <http://quest.arc.nasa.gov/mars/>

Other interesting interactive sites

CoVis' weather site teaches students how to forecast weather changes as well as many other related activities at:

<http://www.covis.nwu.edu/Geosciences/projects/WEATHER/WEATHER1.html>

As you will soon find out, there is only one problem with this otherwise excellent site - it only deals with American data. To overcome this, return to Canada's School Net and go to the Weather section. You'll be able to piece together Canadian data with CoVis' activities.

NASA has devoted a large amount of its considerable resources to education over the 'net. Check out the K12 Initiative at:

<http://quest.arc.nasa.gov/>

Be sure to look at their interactive projects and virtual conferences.

A catalogue of interactive projects exists at: <http://www.pitsco.com/pitsco/collab.html>; however, many of the projects have ended or changed servers without notification - a common problem.

APPENDIX I

What is the World Wide Web?

Note: Though this article is dated (anything past three months on the 'Net is history; six months is ancient history), it does provide a wealth of solid definitions and technical explanations.

For fifty years, people have dreamt of the concept of a universal database of knowledge - information that would be accessible to people around the world and link easily to other pieces of information so that any user could quickly find the things most important to themselves. It was in the 1960's when this idea was explored further, giving rise to visions of a "docuverse" that people could swim through, revolutionizing all aspects of human-information interaction. Only now has the technology caught up with these dreams, making it possible to implement them on a global scale.

The World-Wide Web is officially described as a "wide-area hypermedia information retrieval initiative aiming to give universal access to a large universe of documents".

What the World-Wide Web (WWW, W3) project has done is provide users on computer networks with a consistent means to access a variety of media in a simplified fashion. Using a number of popular software interfaces to the Web - generally, *Netscape* or *Explorer*, the Web project has changed the way people view and create information - it has created the first true global hypermedia network.

The earliest visions of such systems had as their goal the advancement of science and education. Although the World-Wide Web project has the potential to make a significant impact in these areas, it is poised to revolutionize many elements of society, including commerce, politics, and literature.

What is hypertext and hypermedia?

The operation of the Web relies mainly on hypertext as its means of

interacting with users. *Hypertext* is basically the same as regular text - it can be stored, read, searched, or edited - with an important exception: hypertext contains connections within the text to other documents.

For instance, suppose you were able to somehow select (with a mouse or with your finger) the word "hypertext" in the sentence before this one. In a hypertext system, you would then have one or more documents related to hypertext appear before you - a history of hypertext, for example, or the Webster's definition of hypertext. These new texts would themselves have links and connections to other documents - continually selecting text would take you on a free-associative tour of information. In this way, hypertext links, called hyperlinks, can create a complex virtual web of connections.

Hypermedia is hypertext with a difference - hypermedia documents contain links not only to other pieces of text, but also to other forms of media - sounds, images, and movies. Images themselves can be selected to link to sounds or documents. Hypermedia simply combines hypertext and multimedia. Here are some simple examples of hypermedia:

You are reading a text on the Hawaiian language. You select a Hawaiian phrase, then hear the phrase as spoken in the native tongue.

You are a law student studying the California Revised Statutes. By selecting a passage, you find precedents from a 1920 Supreme Court ruling stored at Cornell. Cross-referenced hyperlinks allow you to view any one of 520 related cases with audio annotations.

Looking at a company's floor plan, you are able to select an office by touching a room. The employee's name and picture appears with a list of their current projects.

You are a scientist doing work on the cooling of steel springs. By selecting text in a research paper, you are able to view a computer-generated movie of a cooling spring. By selecting a button you are able to receive a program which will perform thermodynamic calculations.

A student reading a digital version of an art magazine can select a work to

print or display in full. Rotating movies of sculptures can be viewed. By interactively controlling the movie, the student can zoom in to see more detail.

The Web, although still in its infancy, has already enabled many, if not all, of these examples. It facilitates the easy exchange of hypermedia through networked environments from anything as small as two Windows-based clones connected together to something as large as the global Internet.

What is the Internet?

The Internet is the catch-all word used to describe the massive world-wide 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 20 million users in over 50 countries. The World-Wide Web is mostly used on the Internet; they do not mean the same thing. The Web 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.

Nobody "owns" the Internet - although there are companies that help manage different parts of the networks that tie everything together, there is no single governing body that controls what happens on the Internet. The networks within different countries are funded and managed locally according to local policies.

Having access to the Internet usually means that one has access to a number of basic services: electronic mail, interactive conferences, access to information resources, network news, and the ability to transfer files.

The World-Wide Web uses the Internet to transmit hypermedia documents between computer users internationally. Much in the same way, nobody "owns" the World-Wide Web. People are responsible for the documents they author and make available publicly on the Web. Via the Internet, hundreds of thousands of people around the world are making information available from their homes, schools, and workplaces.

It's possible to use World-Wide Web software without having to use the Internet. But Internet access is necessary in order to make full use of and participate in the World-Wide Web. To get more information on the Internet, how to obtain Internet access, and how to use the Internet, see the section "How can I get more information?"

How was the Web created?

The World-Wide Web began in March 1989, when Tim Berners-Lee of the European Particle Physics Laboratory (known as CERN, a collective of European high-energy physics researchers) proposed the project to be used as a means of transporting research and ideas effectively throughout the organization. Effective communications was a goal of CERN's for many years, as its members were located in a number of countries.

The initial project proposal outlined a simple system of using networked hypertext to transmit documents and communicate among members in the high-energy physics community. There was no intention of adding sound or video, and the capability to transmit images was not considered.

By the end of 1990, the first piece of Web software was introduced on a NeXT machine. It had the capability to view and transmit hypertext documents to other people on the Internet, and came with the capability to edit hypertext documents on the screen. Demonstrations were given to CERN committees and seminars, and a demonstration was given at the Hypertext '91 conference.

Throughout 1992 Tim continued to speak on and evangelize the project, as small handfuls of developers began to volunteer their time into working on small pieces of the World-Wide Web puzzle.

Since then hundreds of people throughout the world have contributed their time writing Web software and documents or telling others about the Web. In a way never envisioned by the original project group, the project has reached global proportions. By the first four months of 1994 alone, the World-Wide Web has been mentioned by CNN, the Wall Street Journal, the Economist, Fortune magazine, the New York Times, and dozens of computer publications.

How popular is the Web?

From January to December 1993, the amount of network traffic (in bytes) across the National Science Foundation's North American network attributed to Web use multiplied by 187 times. In December 1993 the Web was ranked 11th of all network services in terms of sheer byte traffic - just twelve months earlier, its rank was 127.

In June 1993, Matthew Gray at MIT ran a small program which automatically travels links within the Web network to try to determine just how many sites there are that offer information over the World-Wide Web. His small "World-Wide Web Wanderer" found around 100 sites that month and over two hundred thousand documents. In March 1994 his robot found over 1,200 unique sites. Even though the robot's programming was improved somewhat, and a number of factors may have affected the final count, the growth rate of the Web from the last half of 1993 throughout the first half of 1994 is amazing and continues to increase.

Brian Pinkerton at the University of Washington has been maintaining a similar program called the "WebCrawler", now a famous web device called a *Search Engine*. Its last run in mid-May 1994 found over 3,800 unique Web sites.

Given that many sites are private (hidden behind corporate firewalls or not connected to the public Internet), it can be safely stated that, as of May 1994, there are at least 4,500 hypertext Web servers in use throughout the world.

Based on Web site statistics, estimates of the number of knowledgeable Web users in the world has been as large as ten million. However, considering the number of hosts that frequent the most populated areas of the Web, it is safe to say that there are around two to five million current active Web users today.

A Case Study - Honolulu Community College

Honolulu Community College announced the opening of their hypermedia site - the first Web site in Hawaii and the first hypermedia campus-wide information system on the Web - at the end of May 1993. A campus dinosaur

exhibit, interactive map, movies, and publications were offered there and immediately attracted an international audience.

By September of that year (after 105 days of service), they had received over 23,000 requests for documents and over 112,000 requests for graphics and other media from nearly 5,000 separate hosts on the network. Today, the site receives about 7,000 requests per day on average, a large majority of which comes from outside Hawaii.

The Global Network Navigator is an electronic magazine published by O'Reilly and associates over the World-Wide Web. It offers news, a calendar of Internet events, and a virtual marketplace in which companies can advertise their services. It has roughly 12,000 registered subscribers and receives about 150,000 to 200,000 requests for documents and media per week from people all over the Internet.

Perhaps the best example of the growth in Web usage can be seen at National Center for Supercomputing Applications. The NCSA produces a number of popular software products for World-Wide Web use and their Web site is used as documentation for their products as well as a repository for announcements of new events on the Web. In July 1993 NCSA's site received roughly 100,000 requests per week. Currently it receives at least one million requests per week and its traffic continues to increase.

Who Travels the Web?

An informal comparison of host statistics from 15 government, research, educational, and corporate Web sites in March 1994 shows that the people roaming the World-Wide Web follow the makeup of the Internet fairly well.

Shown are the top five Web users by domain and the average percentage of total hosts each Web site received. Next to these statistics is the estimated percentage of total hosts on the Internet for these domains.

56% were between the ages of 21 and 30,
94% were male,
69% were located in North America, and

45% described themselves as professionals and, 22% as graduate students.

Although it is impossible to know for sure, it can be guessed that the largest segment roaming the World-Wide Web consists of four-year campus populations within the United States.

Why Is The Web So Popular?

The Web offers a very simple-to-use interface to the traditionally hard-to-master resources on the Internet. It is probably this ease of use as well as the popularity of many graphical interfaces to the Web that caused the explosion of Web traffic in 1993.

The potential of using networked hypertext and multimedia has prompted many users to create and explore countless innovative applications on the Internet. It is perhaps no surprise that more educational users are on the Web than would be expected.

What does the Web look like?

The World-Wide Web exists virtually - there is no standard way of viewing it or navigating around it. However, many software interfaces to the Web have similar functions and generally work the same way no matter what computer or type of display is used. In fact, many users navigate around the Web using text-only interfaces and are able to see all of the textual information a user with a graphic display would.

On the following page is a picture of the typical graphical World-Wide Web interface that you would see on a computer screen. It may be black or white or in color. In this example the interface - called a Web browser - works in a window and may be a software program on any computer with a graphic interface, such as a Macintosh or an IBM-compatible computer with Microsoft Windows.

A typical Web browser for a graphic user interface

The browser has a *menu bar* on top, where the user can quit, get help on using the program, and change certain display characteristics such as the screen font size, the background color, etc.

A *scroll bar* allows the user to scroll the document page up and down. Because there is no limit to how wide or small a hypermedia document can be, scroll bars are often needed in case the document is larger than the viewing window.

Although there are many different ways to represent a document on the screen, it is often called a *page*. Usually, those responsible for creating a given collection of interrelated documents also create a special document which is intended to be viewed first - one that contains introductory information and/or a master menu of documents within that collection. This type of document is called a home page and is generally associated with a particular site, person, or named collection. The example on page 5 of this document shows the Laurentian CEMIS' home page.

This document contains a logo, text in a bold font ("The Laurentian CEMIS") and hypertext in which a single word is underlined. This word ("link") is a hyperlink- typically, clicking on it with a mouse will cause another document to appear on the screen, which may hold more images and hyperlinks to other places.

There is no one way to represent text that is linked to other things - some browsers underline, others use special colors, and many, if not all major browsers, give the user a variety of options.

Images such as the CEMIS logo which are part of the document and are displayed within the page are called *inline images*.

Often users create their own personal documents with collections of their favorite links or biographical information and make them publicly available. Although these pages are also called *home pages* (they are a virtual "home" for the user), they may be called "personal pages" or "hyplans" (hypermedia plans).

At the top of the screen is a set of *navigation buttons* - because a user might go to many different screens by selecting links in hypertext, there needs to be some method of retracing one's steps and reviewing the documents that have been explored. The *back button* shows the previously viewed document. The *forward button* would show the pages in the order the user previously viewed them.

An *open button* allows the user to connect to other documents and networked resources by specifying the address of the document or resource to connect to. The user might be able to connect to a document stored locally on the same machine being used or one stored somewhere in another country. Typically, such a document would be transferred over the Internet in its entirety.

The *print button* allows the user to print out the document seen on the screen. The user may be given the choice of printing the document with images and formatting as seen on the screen or as a text-only document.

The page lists an *E-mail address* - *bilodeap@citenet.net*. A convention on the Web is to name the person in charge of administrating a World-Wide Web site a webmaster - any problems with the hyperlinks, images, documents, or questions about the site should be mailed to a webmaster address.

What can a Web Browser (Netscape or Explorer) do?

Web browsers have the following features:

- A consistent mouse-driven graphical interface.
- The ability to display hypertext and hypermedia documents.
- The ability to display electronic text in a variety of fonts and styles (bold, italic, strike-through, etc.)
- The ability to display layout elements such as paragraphs, lists, numbered and bulleted lists, and quoted paragraphs.
- Support for sounds (Macintosh, Sun audio format, and others).

- Support for movies
- The ability to display characters as defined in the set (it can display languages such as French, German, and Spanish).
- Interactive electronic forms support, with a variety of basic forms elements, such as fields, check boxes, and radio buttons.
- Support for interactive graphics of up to 256,000 colors within documents.
- The ability to make basic hypermedia links to and support for the following network services: FTP, gopher, telnet, NNTP, WAIS.
- The ability to extend its functionality by creating custom scripts.
- The ability to have other applications control its display remotely.
- The ability to broadcast its contents to a network of users running multi platform groupware such as NCSA's support for the current standards of HTTP and HTML.
- The ability to keep a history of traveled hyperlinks.
- The ability to store and retrieve a list of viewed documents for future use.

What is available on the Web?

Currently the Web offers the following through a hypertext, and in some cases, hypermedia interface:

- Anything served through Gopher
- Anything served through WAIS (Wide-Area Information Servers)
- Anything served through anonymous FTP sites

- Full Archie services (a FTP search service)
- Full Veronica services (a Gopher search service)
- Full CSO, X.500, and whois services (Internet phone book services)
- Full finger services (an Internet user lookup program)
- Anything on Usenet
- Anything accessible through telnet
- Anything in hytelnet (a hypertext interface to telnet)
- HTML-formatted hypertext and hypermedia documents

How does the Web work?

Web software is designed around a distributed client-server architecture - a *Web client* (called a *Web browser* if it is intended for interactive use) is a program which can send requests for documents to any Web server. A *Web server* is a program that, upon receipt of a request, sends the document requested (or an error message if appropriate) back to the requesting client.

Using a distributed architecture means that a client program may be running on a completely separate machine from that of the server, possibly in another room or even in another country. Because the task of document storage is left to the server and the task of document presentation is left to the client, each program can concentrate on those duties and progress independently of each other. Because servers usually operate only when documents are requested, they put a minimal amount of workload on the computers they run on.

Here's an example of how the process works:

Running a Web client, the user selects a *hyperlink* in a piece of hypertext connecting to another document - "[The History of Computers](#)", for example. The Web client uses the *address* associated with that hyperlink to connect to the

Web server at a specified network address and asks for the document associated with "The History of Computers".

The *server* responds by sending the text and any other media within that text (pictures, sounds, or movies) to the client, which the client then renders for presentation on the user's screen.

The *World-Wide Web* is composed of thousands of these virtual transactions taking place per hour throughout the world, creating a web of information flow.

Future Web servers will include encryption and full client authentication abilities - they will be able to send and receive secure data and be more selective as to which clients receive information. This will allow freer communications among Web users and will ensure that sensitive data is kept private. It will be harder to compromise the security of commercial servers and educational servers which wish to keep information local.

Improvements in security will facilitate the idea of "pay-per-view" hypermedia, a concept which many commercial interests are pursuing.

The language that Web clients and servers use to communicate with each other is called the *Hypertext Transfer Protocol* or *HTTP*. All Web clients and servers must be able to speak HTTP in order to send and receive hypermedia documents. For this reason, Web servers are often called HTTP servers.

The phrase "World-Wide Web" is often used to refer to the collective network of servers speaking HTTP as well as the global body of information available using the protocol.

HTML - The Hypertext Markup Language

The standard language the Web uses for creating and recognizing hypermedia documents is the *Hypertext Markup Language* (*HTML*). It is loosely related to, but technically not a subset of, the Standard Generalized Markup Language (SGML), a method of representing document formatting languages. Languages such as HTML which follow the SGML format allow document

writers to separate information from document presentation - that is, documents containing the same information can be presented in a number of different ways. Users have the option of controlling visual elements such as fonts, font size and paragraph spacing without changing the original information.

HTML is widely praised for its ease of use. Web documents are typically written in HTML and are usually named with the suffix .html. HTML documents are nothing more than standard 7-bit ASCII files with formatting codes that contain information about layout (text styles, document titles, paragraphs, lists) and hyperlinks.

Free conversion software is available for translating documents from many other formats into HTML

The current HTML standard supports basic hypermedia document creation and layout, but is limited in its capability to support many complex layout techniques found in traditional document publishing.

About Uniform Resource Locators

The World-Wide Web uses what are *Uniform Resource Locators (URLs)* to represent hypermedia links and links to network services within HTML documents. It is possible to represent nearly any file or service on the Internet with a *URL*.

The first part of the *URL* (before the two slashes) specifies the method of access. The second is typically the address of the computer, the data or service, i.e., where the information is located. Further parts may specify the names of files, the port to connect to, or the text to search for in a database. A URL is always a single unbroken line with no spaces.

Sites that run World-Wide Web servers are typically named with a www at the beginning of the network address.

Here are some examples of URLs:

<http://www.hcc.hawaii.edu/sound.au>

Retrieves a sound file and plays it.

<http://www.eit.com/picture.gif>

Retrieves a picture and displays it, either in a separate program or within a hypermedia document.

APPENDIX II

Meeting National Standards by Cathy de Moll President, Online Systems

Note: This article has been included because many educators feel that provincial and national objectives may be reached using the unique advantages of the Internet. In our situation, the Small Schools Network as well as the Our Region Project are currently working on the objectives reflected below. In the United States, education is a national rather than a state responsibility.

Teachers are pressured from all sides to meet a variety of standards --state, national and graduation standards. Every curriculum decision in a packed schedule must be justified accordingly. Have you heard this before..."sounds wonderful, but does it help us meet the standards...?"

Good question. Is Internet programming a nice "enrichment activity" or a possible key to meeting the exacting educational goals of the twenty-first century? The answer depends, of course, in how we decide to apply and support the technology. If we find creative ways to integrate Internet use into the classroom's core curriculum, it can be a fabulous, *inexpensive* tool. If we keep it separate and apart from our essential classroom business, it will be an

expensive toy.

I thought I'd take a look this month at the national standards for geography to see whether one online project --the upcoming OnlineClass "Rivers of Life" project could prove useful to teachers facing pressure to meet these goals.

The US Geography standards adopted in 1994 (Geography for Life) require that a geography student know....

(1) The world in spatial terms: ...that geography studies the relationships between people, places and environments by mapping information about them into a spatial context...

The "Rivers of Life" curriculum begins with the exercise of introducing each school's community to the participating group and progresses through a series of activities which teach mapping and visualization skills. By program's end, the schools have mapped their own watershed.

(2) Places and Regions:...that the identities and lives of individuals and peoples are rooted in particular places and in those human constructs called regions...

By moving from the specific Mississippi River region to working on one's own watershed, and by REPORTING and DESCRIBING one's own watershed to others around the world, students have hands-on experience in "rooting" themselves in their own environment while learning about their place in relation to others'. Schools even have the chance to mail a "Steamer Trunk" full of clues to their watershed out to another school for an interactive guessing game. Thus, places near and far are put into context.

(3) Physical Systems: ...physical processes shape Earth's surface and interact with plant and animal life to create, sustain and modify eco-systems...

"Rivers of Life" focuses on the real-time flooding behavior of rivers as an example of physical process, and teaches an applicable lesson on the interrelationship of geography, plant and animal life which can then be brought out in other examples, other projects.

(4) Human Systems: People are central to geography in that human activities help shape Earth's surface...

No better example of the above could be found than a river system -particularly the Mississippi River -to illustrate this point. By interacting with and questioning experts on the river, students will learn first-hand how people use and affect the river. Their own documentation and data-collection will add to the lesson -whether the online discussion turns to pollution, river flow/dams, boating, economics, river management, flooded communities or wildlife preservation, human interaction with nature will be the greatest underlying theme of this interdisciplinary study of the river.

(5) Environment and Society: ...that the physical environment is modified by human activities, largely as a consequence of the ways in which human societies value and use Earth's natural resources, and human activities are also influenced by Earth's physical features and processes....

See above. By focusing on river flooding, we have an opportunity to weigh and compare the human effect on a natural environment to the natural cycle itself.

(6) The Uses of Geography: ...knowledge of geography enables people to develop an understanding of the relationships between people, places, and environments over time -that is, of Earth as it was, is, and might be....

The "Rivers of Life" has archaeological and geological activities which show the history of the river and how such investigation works. Equally important is the fact that all the ROL students will be interacting with experts who can attest to the relationship between the environment and society --our guests include artists and story-tellers as well as management experts. By sharing their own observations, the students themselves become active members of the global community which affects and cares for their natural environments.

...The interesting thing to me is that we could have taken the same program and applied point-by-point the national US standards for science and social studies. This, of course, gets back to the Internet's unique capability to deliver high-quality interdisciplinary programming.

The very nature of the Internet as a research tool and a means for communication among regions, peoples, age-groups and disciplines gets to the heart of the standards, which tend to promote and endorse a more "inquiry-based" teaching/learning approach.

I encourage you to become familiar with the kinds of Internet programming available "out there" (and make your views known as to what you'd like to see developed). Find ways in which your students can use the Internet within your own course work (you don't always need an outside plan like ours, though sometimes they provide a welcome, structured short-cut). Start small with keypals or school-on-school projects and grow as your confidence and experience grows, or take the learn-as-you-go approach, i.e, leap right into a global learning experience!

However you choose to use this new medium, the more you apply your work to the national standards, the more you will find the Internet has the potential to widen your students' world and to make them competitive citizens of a greater educational community. GOOD LUCK!

APPENDIX III

Using the Internet... Without a Connection
by
Larry Hinga
Matsuyama Elementary School

Introduction

Although we all live for the day when we will have direct Internet connections in the classroom, until that day comes, there is much you can do to bring the Internet into your classroom.

The following discussion is about how to make this idea work, and is based on my experience with the Internet, input from teachers, and tested and untested ideas. Certainly not everything, but a good start.

For a little background about Matsuyama's Internet Journey, here are some of the projects we accomplished:

- * Free Internet access through Coastal Web Online (www.cwo.com)
- * Teacher Scholarships: 5 additional unlimited access Internet accounts purchased for teachers who have the ability and desire to access at home.
- * Teacher Internet User Group: Scholarship teachers and parents meeting once a month to discuss new topics, problems, projects related to the Internet. E-mail list also established to communicate in between meetings.

- * School E-Mail List: A list composed of teachers and parents with Internet e-mail to share current school and technology information.
- * School and Class Web Pages: We have developed our school web page (www.mes.room.net) and are in the process of creating class pages.
- * Technology Night: Hands-on demonstrations of the Internet, multimedia computing, and our computer lab for our parents and teachers.
- * Internet In-Service Staff Training: Introduction to the Internet in a nutshell, 2 teachers at a time in one and a half hour sessions during school.

Tools And Resources

For this presentation, I am assuming you have full Internet access, either at home or at another part of the school. You may or may not have a computer in your classroom. I base my presentation on a Windows environment, only because that is what I am familiar with. I have nothing against Macs, I understand they are great, most of the concepts are transparent to the platform, however, I'm not sure all the programs are available in Mac format.

Here we go!

E-Mail

Ask any of our Internet teachers what I say about having an Internet e-mail address. In one word, POWER! With your own e-mail address, you can "talk" to anyone in the world, have topical mail delivered to you, post queries/responses to newsgroups, transfer files, obtain free stuff, and much more. If you don't have Internet e-mail, check out Juno (www.juno.com), a free Internet e-mail package.

To illustrate the power of e-mail, through the INCLASS (using technology in the classroom) listserv, we met a teacher from South Africa, Derek Saunderson, who only has e-mail access to the Internet. Derek teaches computer applications on XT and 286 PCs, but was very interested in the Internet. After reading our post about our upcoming Technology Night and

request for e-mail from around the world, not only did we receive over 50 e-mail responses from around the world, but Derek got up REAL early (he's 9 hours ahead of us) and we conversed in real-time via e-mail.

Power!

Here are some ways to have e-mail benefit you in your classroom:

* **Join a listserv:** A listserv is like a magazine subscription to topics of common interest. You use e-mail to subscribe to the listserv, then you will be sent mail as mail is sent to the group. What I like about this is that you receive mail automatically as messages get posted to the list as opposed to a newsgroup where you have to check for new postings. A listserv is only as good as the participation of the members. Be sure to offer your help when you can.

I have posted questions to listservs on how others have approached training teachers on Internet skills and basics (start with e-mail), the request for mail from around the world, and this project.

In addition to INCLASS, HILITES is a great listserv that calls for participation in Internet-related projects for K-12. We are participating in a game called "Geogames" with a non-Internet teacher, where I and another parent are the "go-between" and "research helpers" for the project. This project uses e-mail only, as do many others from this list. Any teacher, whether on the Internet or not, can get ideas from project descriptions that are printed out and routed.

Check out the Global Schoolhouse (www.gsn.org) for educational listservs and Liszt (www.liszt.com) Searchable Directory of E-Mail Discussion Groups, the "mother of all listserv listings."

* **Develop a keypal project:** A keypal is like a penpal, only using e-mail to "talk" to someone. You can find keypals by joining a listserv, doing an Internet search, or by "asking around" as you make contacts through the Internet. Several of our teachers have done keypals with classes in Australia, Thailand, and are currently working on one with Derek from South Africa. A keypal project without Internet in your classroom will require that students type out

their letter on any computer, save it to diskette or hard disk, the teacher compiles the e-mail, and sends using their e-mail address. Replies received by the teacher are printed out and distributed in the classroom.

Feedback from teachers state that students take more care in composing their e-mail when they know a peer will be reading it. It is also interesting to see that students in other countries have the same interests, likes and dislikes, etc.

* **E-mail an expert:** Everyone nowadays has an e-mail address and web pages usually have people you can contact via e-mail. When we had trouble finding average weather statistics for Sacramento, we e-mailed Tom Loffman, the TV weatherman, and received a prompt and detailed reply.

* **Get free stuff:** Many states, government agencies, attractions, etc. have e-mail addresses on their web pages that you can request visitor, tourist, and other information. I have received software and cd-roms free from various web sites. Do a web search on "free stuff" and be amazed at what's available.

* **Post to a newsgroup:** We have posted requests using e-mail to various newsgroups requesting input and information. Again, with newsgroups, you have to check for any responses to your posts.

* **Develop a school e-mail list:** As more parents get connected, this is a great way to share information as well as make requests for resources, assistance, etc. As we are developing the South Africa keypal project, which was posted to our school e-mail listing, one of our parents stated that her husband lived in the same area in South Africa and could speak to the class about his experiences.

Browsing The Internet

Using Netscape or Internet Explorer, you have access to the growing resources on the web. As you well know, there is great, timely, and unique information, pictures, software, that you can integrate into your lesson plans. Not only are our Internet teachers researching subjects, we are planning an Internet Research Service for all teachers. A list will be routed to our staff where they can post subjects they will be covering during the year. The list will be available

to our parents and Internet teachers for research on the Web.

We are finding that browsing is a more intuitive process. With short lessons on how to search using search engines, we are quickly finding relevant and timely information that is being used in the classroom.

Here are some ways to use browsers like Netscape in your classroom:

- * **Do a search on lesson plans:** What you will find are many lesson plans posted on the web by other teachers. Before the Internet became so commercial, sharing was what the Internet was all about, and believe it or not, some people still do share, at no charge. This can be a rich source for ideas that can be used in the classroom.
- * **Print it out in hard copy:** As you find information, print it out. Easy to do, can be read later, copied and handed out, filed for future use, routed to other staff, copied to transparencies for display on the overhead projector.
- * **Print it out on transparencies:** Color pictures or text can be printed out on transparencies for use on overhead projectors.
- * **Save pages as files:** You can save any web page as a text or Hypertext Markup Language (HTML) file through the File, Save As command. They can then be imported into your word processing program for integration into a lesson or web pages. Be aware of getting permission.

Many documents are now published in Portable Document Format (PDF) which are readable in most operating systems if you have the free PDF reader. This allows you to have a desktop-quality document that can be read on-screen or printed out. Check out the Adobe site (www.adobe.com) for more information.

- * **Save pictures as files:** Point to a picture and right click on your mouse to save a picture as a file. Bring the file into a document or your favorite image editing program. Be aware of getting permission.
- * **Create HTML documents:** Create your own lessons in Hypertext

Markup Language and use your browser to run the lesson.

* **Download software and load on your classroom computer:** Many web sites offer shareware, freeware, or limited versions of software that can be downloaded and installed. Download.com (www.download.com) offers such software as well as instructions on downloading and installing. You can also use anonymous FTP (File Transfer Protocol) to download programs and files which may not be available on web sites.

* **Download web sites for use off-line:** Use software that will download web pages to your local hard drive. This will allow you to control access and speed up browsing. Webwhacker (www.ffg.com) and Freeloader (www.freeloader.com) seem to be the leaders in this area. An advantage to Freeloader is that it is free, although I found it harder to use than Webwhacker.

Significant Items To Consider

Although the previous discussion may sound simplistic at times, my experience is that there are some very real and substantial obstacles that must be recognized and overcome. Here are a few of them:

School Internet access vs. home Internet access

Originally, we created one Internet access point in a vacant room in the front office. Although quiet, it was inconvenient for the teachers during the day, as there was not enough time to use it. After awhile, I came up with the idea of creating "teacher scholarships" which were unlimited Internet access accounts, funded by the PTA, that would enable teachers with the proper hardware/software to access the Internet at home.

The stipulations to the scholarship would be that they would use the account to get comfortable and knowledgeable with the Internet, that they would develop projects or otherwise use the Internet in their classroom, participate in an Internet Teacher E-mail listserv, and meet monthly to discuss problems, successes, projects, etc.

The scholarships have proven to be a big success as you will see from the

handouts. I have seen a tremendous amount of progress from when we first started our "journey." Our Internet teachers are more confident in their Internet skills and in their awareness of what is possible. They have learned proper netiquette, and have found and incorporated great information in their classrooms.

Learning basic Internet and computer skills

There are many basic skills that people new to the Internet and computing just have not experienced. Think about it. What are the answers to the following questions:

- * How do you send a file to someone?
- * How do you download and install a software program from the Internet?
- * How do I move files from my home computer to my class computer?

Try explaining the answer to these question in e-mail.....pretty confusing. We are trying to tackle these subjects during our monthly meetings. Learn by doing, and practice, practice, practice are the way to go.

There is also the training involved in learning and understanding the Internet culture, netiquette, and browsing techniques we all have to go through. Count on a lot of communications and "hand holding."

Working with different versions of operating systems and programs

Let's see, at school, we have DOS and Windows 3.1 loaded on our computers, in addition to one with Windows 95. At home some of us have Windows 95. Some of you may have Macs. Try explaining how to copy a file, make a directory, zip or unzip a file, etc. to someone, it depends on what operating system they are using. Some hints in supporting your school's technology are to standardize when possible, upgrade to the same versions of software, and know what operating system people are working on.

In the Classroom

Most of the previous discussion allows you to bring the Internet into your classroom in one form or another. Here are some considerations as you develop your lesson plans:

- * Allow adequate lead time for Internet research. Inevitably, you start researching one subject, you start finding other topics of interest, and pretty soon you are way off the original subject area. There is nothing wrong with this, however it does eat up your valuable time.
- * If participating in a collaborative project, much lead time needs to be budgeted, as well as making sure you will be accepted to participate. Some have a limited number of participants. Also, the timing of such projects may not coincide with your time line.
- * How will you display the information to your students? Depending on your resources, you may have to work small groups.
- * Are any of your parents Net-savvy? If so, have them help you in developing, researching, or presenting lessons.

Can you image the potential of creating a self-contained HTML-based lesson plan on a zip cartridge that can be loaded on any computer, copied and shared with others, downloadable from the Internet, easily available for next year, updatable, etc.? Power!

Displaying a file in the classroom

Once you have file you want to display in your classroom, what are some ways to do it? Here are a few:

- * On computer screen: Only good for up to a few students.
- * Overhead projector: Text or pictures copied to transparencies
- * PC to TV converter: A piece of hardware that connects your computer to

a TV allowing you to display to a larger audience. Still not large enough for an entire classroom.

* LCD screen: A piece of hardware that plugs into your computer and is placed on an overhead projector which projects a readable picture size to large groups.

Appendix IV

*IRCs, Gophers, Veronicas
and the Usenet
by
Patrick Douglas Crispen
University of Alabama
from
Roadmap '96*

IRC's, MUD's & MOO's

I was trying to decide what I should write about IRC when I realized that "The EFF's Guide to the Internet" probably has the most complete discussion on Internet Relay Chat (IRC) I have ever seen.

Here is what the EFF has to say about IRC:

Many Net systems provide access to a series of interactive services that let you hold live "chats" or play online games with people around the world. To find out if your host system offers these, you can ask your system administrator or just try them -- if nothing happens, then your system does not provide them. In general, if you can use telnet and ftp, chances are good you can use these services as well.

One of the most popular "chat" programs is Internet Relay Chat (IRC).

IRC is a program that lets you hold live keyboard conversations with people around the world. It's a lot like an international CB radio - it even uses

'channels.'

Type something on your computer and it's instantly echoed around the world to whoever happens to be on the same channel with you. You can join in existing public group chats or set up your own. You can even create a private channel for yourself and as few as one or two other people. And just like on a CB radio, you can give yourself a unique "handle" or nickname.

IRC currently links host systems in 20 different countries, from Australia to Hong Kong to Israel. Unfortunately, it's like telnet -- either your site has it or it doesn't. If your host system does have it, Just type

irc

and hit enter.

Note: This method doesn't work with most providers any longer. If you want to try IRC, I suggest you download the news MIRC version from the following address: <http://mirc.co.uk/>

Follow the loading instructions - very simple... and off you go.

You'll get something like this:

```
*** Connecting to port 6667 of server world.std.com
*** Welcome to the Internet Relay Network, adamg
*** Your host is world.std.com, running version 2.7.1e+4
*** You have new mail.
*** If you have not already done so, read the new user info
*** with +/HELP NEWUSER
*** This server was created Sat Apr 18 1992 at 16:27:02 EDT
*** There are 364 users on 140 servers
*** 45 users have connection to the twilight zone
*** There are 124 channels.
*** I have 1 clients and 3 servers
MOTD - world.std.com Message of the Day -
MOTD - Be careful out there...
```

```

MOTD -
MOTD - ->Spike
* End of /MOTD command.
... snip snip snip ...

```

You are now in channel 0, the "null" channel, in which you can look up various help files, but not much else. As you can see, IRC takes over your entire screen. The top of the screen is where messages will appear. The last line is where you type IRC commands and messages. All IRC commands begin with a /. The slash tells the computer you are about to enter a command, rather than a message. To see what channels are available, type

```
/list
```

and hit enter.

You'll get something like this:

```

*** Channel Users Topic
*** #Money      1   School CASH (/msg SOS_AID help)
*** #Gone       1   ----->> Gone with the wind!!! ----->>>>>
*** #mee        1
*** #eclipse    1

```

Because IRC allows for a large number of channels, the list might scroll off your screen, so you might want to turn on your computer's screen capture to capture the entire list. Note that the channels always have names, instead of numbers. Each line in the listing tells you the channel name, the number of people currently in it, and whether there's a specific topic for it. To switch to a particular channel, type

```
/join #channel
```

where "#channel" is the channel name and hit enter. Some "public" channels actually require an invitation from somebody already on it. To request an

invitation, type

```
/who #channel-name
```

where channel-name is the name of the channel, and hit enter. Then ask someone with an @ next to their name if you can join in. Note that whenever you enter a channel, you have to include the #. Choose one with a number of users, so you can see IRC in action.

If it's a busy channel, as soon as you join it, the top of your screen will quickly be filled with messages. Each will start with a person's IRC nickname, followed by his message.

It may seem awfully confusing at first. There could be two or three conversations going on at the same time and sometimes the messages will come in so fast you'll wonder how you can read them all.

Eventually, though, you'll get into the rhythm of the channel and things will begin to make more sense. You might even want to add your two cents (in fact, don't be surprised if a message to you shows up on your screen right away; on some channels, newcomers are welcomed immediately). To enter a public message, simply type it on that bottom line (the computer knows it's a message because you haven't started the line with a slash) and hit enter.

Public messages have a user's nickname in brackets, like this:

```
<tomg>
```

If you receive a private message from somebody, his name will be between asterisks, like this:

```
*tomg*
```

Here are a few IRC commands that will probably come in handy:

- `/away` When you're called away to put out a grease fire in the kitchen, issue this command to let others know you're still connected but just away from your terminal or computer for awhile.
- `/help` Brings up a list of commands for which there is a help file. You will get a "topic:" prompt. Type in the subject for which you want information and hit enter. Hit enter by itself to exit help.
- `/invite` Asks another IRC to join you in a conversation.
`/invite fleepo #hottub`
would send a message to fleepo asking him to join you on the #hottub channel. The channel name is optional.
- `/join` Use this to switch to or create a particular channel, like this:
`/join #hottub`
If one of these channels exists and is not a private one, you will enter it. Otherwise, you have just created it. Note you have to use a # as the first character.
- `/list` This will give you a list of all available public channels, their topics (if any) and the number of users currently on them. Hidden and private channels are not shown.
- `/m name` Send a private message to that user.
- `/mode` This lets you determine who can join a channel you've created.
`/mode #channel +s` creates a secret channel.
`/mode #channel +p` makes the channel private
- `/nick` This lets you change the name by which others see

you.

`/nick fleepo` change your name for the present session to

`fleepo`. People can still use `/whois` to find your e-mail address. If you try to enter a channel where somebody else is already using that nickname, IRC will ask you to select another name.

- `/query` This sets up a private conversation between you and another IRC user. To do this, type `/query nickname` Every message you type after that will go only to that person. If she then types `/query nickname` where nickname is yours, then you have established a private conversation. To exit this mode, type `/query` by itself. While in query mode, you and the other person can continue to "listen" to the discussion on whatever public channels you were on, although neither of you will be able to respond to any of the messages there.
- `/quit` Exit IRC.
- `/signoff` Exit IRC.
- `/summon` Asks somebody connected to a host system with IRC to join you on IRC. You must use the person's entire e-mail address.
`/summon fleepo@foo.bar.com` would send a message to fleepo asking him to start IRC. Usually not a good idea to just summon people unless you know they're already amenable to the idea; otherwise you may wind up annoying them to no end. This command does not work on all sites.
- `/topic` When you've started a new channel, use this command to let others know what it's about.
`/topic #Amiga` would tell people who use `/list` that

your channel is meant for discussing Amiga computers.

`/who <chan>` Shows you the e-mail address of people on a

particular channel. /who #foo would show you the addresses of everybody on channel foo. /who by itself shows you every e-mail address for every person on IRC at the time, although be careful: on a busy night you might get a list of 500 names!

- /whois Use this to get some information about a specific IRC user or to see who is online. /whois nickname will give you the e-mail address for the person using that nickname. /whois * will list everybody on every channel.
- /whowas Similar to /whois; gives information for people who recently signed off IRC.

IRC has become a new medium for staying on top of really big breaking news. In 1993, when Russian lawmakers barricaded themselves inside the parliament building, some enterprising Muscovites and a couple of Americans set up a "news channel" on IRC to relay first-person accounts direct from Moscow. The channel was set up to provide a continuous loop of information, much like all-news radio stations that cycle through the day's news every 20 minutes. In 1994, Los Angeles residents set up a similar channel to relay information related to the Northridge earthquake. In both cases, logs of the channels were archived somewhere on the Net, for those unable to "tune in" live.

How would you find such channels in the future? Use the /list command to scroll through the available channels. If one has been set up to discuss a particular breaking event, chances are you'll see a brief description next to the channel name that will tell you that's the place to tune.

If your site does not allow you to access IRC, there is still a way that you can access other types of "talkers." All you have to do is telnet into a MUD or a MOO.

"MUDs" are Multi-User Dungeons (or Multiple User Devices), and they were originally created so that Dungeons and Dragons players could role play

in real-time with other players around the world.

MUDs are no longer limited to dragon-slaying, though. A large number of MUDs have been set up for teaching purposes -- imagine my teaching Roadmap **real time**, where you would see what I type as I type it. There are even social MUDs where you can just sit and talk with people around the world.

A list of the TELNET addresses for several MUDs can be found in Yanoff's List. *Note: An excellent educational MUD/MOO exists on the Academy One server (see Laurentian CEMIS bookmarks/favorites list).* Most MUD commands are different from IRC commands -- the **commands** are different, but the basic functions are identical -- but you will soon find that most MUDs have an EXTENSIVE help menu system.

MOOs are "MUDs: Object-Oriented," and they are "text-based virtual reality adventures." (2) It's hard to explain ... you'll just have to check it out.

There are four warnings that I want to give you about **all** of the "talkers":

1. IRC, MUDs and MOOs are time **SPONGES**! They will suck up all of your time if you are not careful (I speak from experience -- I have over 8 **DAYS** (that's 192 hours plus) login time on one of the social MUDs).
2. Some Internet Service Providers frown on your using their system to access a "chat" service during business hours (for obvious reasons). Please check to see what your provider's policies are **BEFORE** you join a talker.
3. Chat services seem to be a magnet for liars. People pretend to be more than they are, and they say whatever is necessary to boost their own "image." Please be careful, and consider **EVERYTHING** that you hear over a talker to be, at best, an exaggeration or, at worst, a bald-faced lie.
4. If you see someone on one of the social MUDs named SimGod who says "ROLL TIDE" a lot, watch out ... he's a squirrel. :)

Gophers

When I was in elementary school, I was a rather "spirited" child. I remember constantly asking my teachers why I had to learn long division when I could just as easily use a calculator to come up with the answer.

Needless to say, my parents heard from my teachers ... often.

What does this story have to do with gophers? Well, I am proud to announce that we have just finished learning the "long division" of the Internet: FTP. Now we are going to start using the "calculator" of the Internet: a client/server package called "Gopher".

Gopher was developed at the University of Minnesota. It is a menu-driven application that allows you to hop around the globe looking for information. Gopher's interconnected menus allow you to "burrow" deeper and deeper until you find the information that you are looking for.

Imagine that I decide to gather together all of the information that I can find about power line-chomping squirrels and I put that information into a menu-driven library. Also imagine that someone else who is interested in the uses of yak fur creates a menu-driven yak fur library. If these two menu-driven libraries are interconnected, anyone who has access to my squirrel library will also have access to the yak fur library (and vice versa).

Now imagine that THOUSANDS of these specialized libraries were interconnected. That is what Gopher does, and all of these interconnected Gopher libraries make up what is called "Gopherspace."

Think of Gopherspace as being a huge stadium filled with information on a myriad of different topics. If you have ever been to a major sporting event, you will remember that your ticket to that event told you which gate you had to pass through to enter the stadium. Once you entered the stadium, however, you were free to roam around, buy a hot dog, and make fun of the opponent's fans. You had access to EVERYTHING in that stadium, regardless of which gate you entered through.

Gopherspace is set up the same way. Your "gate" is the client that you use to enter Gopherspace. Once you are in, however, you are free to roam around and take advantage of everything that is inside the "stadium".

Why is Gopher so special? Well, unlike Archie which just tells you where the information that you want can be found, Gopher actually goes out, GETS the information that you want, and puts the information on your computer screen! (You could even say that Gopher will actually "go fer" the information that you want.)

A TOUR OF GOPHERSPACE

We are going to start our tour at GOPHER.SQUIRREL.COM -- a gopher site that doesn't really exist, but we're going to pretend that it does. Remember, it does not matter where you start. As long as you are in Gopherspace, you have access to the same information that everyone else has.

Note: To access gopher sites from your web browser. Remember to always begin a gopher address as follows: gopher://, followed by the address of the site. If you wish to connect to a live gopher site, you may type the following address in your locator/address bar: gopher://state.virginia.edu/11/TEIS

This will connect you to the Society for Information Technology and Teacher Education at the University of Virginia.

When you access your Gopher client, you will start out in your client's "root menu." Each root menu is different, but they all have the same basic stuff.

I am going to be using a UNIX Gopher client for today's tour. As I said earlier, we'll talk a little more about the commands tomorrow, but for now I want you to remember two things:

1. Your site's root menu will be different from my example; and 2. In a UNIX Gopher client menu, the symbols at the end of each menu item tell you what that menu item is. The following guide will help you decipher the symbols:

- / gateways to other menu options
- <?> requests you can make to a database for information

With that said, let's begin the tour! Our tour starts on the GOPHER.SQUIRREL.COM root menu:

SQUIRREL.COM Gopher Server

1. Information about the Squirrel Gopher Server.
2. What's new in the Squirrel Gopher as of May 29, 1996.
3. Squirrel Resources, Services and Information/
4. Administrative Resources, Services and Information/
5. Network Resources, Services and Information/
6. Squirrel Directory <CSO>
7. Potpourri, Miscellaneous Topics/
8. Local Squirrel LISTSERV Archives/
9. Other Gopher and Information Servers/

I move the "-->" up and down by using the up and down arrows. When I finally find a menu item that I want to select, I put the "-->" next to that menu item and press the ENTER or RETURN key.

Since the first menu item -- "Information about the Squirrel Gopher Server" -- is a file (it has a "." at the end of it), let's see if we can get into it!

I move the cursor up to "Information about the Squirrel Gopher Server," press the ENTER or RETURN key, and the following appears on my screen:

WELCOME TO THE SQUIRREL.COM GOPHER SERVER

The SQUIRREL.COM gopher was created by Patrick "P-Crispy-One" Crispen to serve as a repository for more information about squirrels than anyone could ever possibly want to know. While you are here, please check out our special Sally Struthers menu which contains ...

COOL! Unlike FTP, Gopher allows us to read files before we GET them! That's going to save us a whole bunch of time! :)

Let's go back to the root menu and start a REAL journey. I'm going to take you to a site we visited in a previous lesson -- the InterNIC!

So I go back to the root menu:

SQUIRREL.COM Gopher Server

1. Information about the Squirrel Gopher Server.
2. What's new in the Squirrel Gopher as of May 29, 1996.
3. Squirrel Resources, Services and Information/
4. Administrative Resources, Services and Information/
5. Network Resources, Services and Information/
6. Squirrel Directory <CSO>
7. Potpourri, Miscellaneous Topics/
8. Local Squirrel LISTSERV Archives/
9. Other Gopher and Information Servers/

I want to visit other Gopher sites around the world, so I use the down arrow to move the cursor down to "Other Gopher and Information Servers," press the ENTER key, and watch as the following appears on my screen:

Other Gopher and Information Servers

1. All the Gopher Servers in the World/
2. Search All the Gopher Servers in the World <?>
3. Search titles in Gopherspace using veronica/
4. Africa/
5. Asia/
6. Europe/
7. International Organizations/
8. Middle East/
9. North America/
10. Pacific/

11. Russia/

WOW! This is COOL!

This menu allows me to access Gophers all over the world! I'm going to have to remember this. (*Remember to add to your Bookmarks or Favorites File!*)

Let's keep today's tour close to (my) home. I move the cursor down to "North America," hit the ENTER key, and the following appears on my screen:

North America

1. Canada/
2. Costa Rica/
3. Cuba/
4. Mexico/
5. Nicaragua/
6. Puerto Rico/
7. USA/

Well, that certainly narrowed things down a little :)

Let's keep going. I move the cursor down to the "USA" menu, press the ENTER key, and a new menu appears on my screen:

USA

1. All/
2. General/
3. alabama/
4. alaska/
5. arizona/
- < snip snip snip >
50. washington DC/
51. west virginia/
52. wisconsin/

53. wyoming/

Uhh ... 53 entries? Yep -- one for each of the 50 states, one for Washington, D.C., one for "All," and one for "General".

I feel like an adventure (and, to be completely honest, I have absolutely no idea what state the InterNIC is in!). I move the cursor up to the "All" menu, press the ENTER key, prop my feet up, and wait for the following new menu to appear on my screen:

All

1. The Online World resources handbook (de Presno)/
2. 1848 Information & Resources/
3. 187resist: Immigrant Rights in California/
4. 1994 California Voter Information/
5. 3k Associates Gopher Server/
6. AAAS (American Association for the Advancement of Science)/
- < snip snip snip>
674. InterLink Hawaii Gopher/
675. InterNIC: Internet Network Information Center/
676. InterNetwork Services - A MN Access Provider/
- < snip snip snip>
1838. protein data bank site (Brookhaven)/
1839. rec.aviation gopher/
1840. the porch gopher/

WHOA! The InterNIC!!! We've been there!

Let's drop in and see if they missed me. I move the cursor to "InterNIC," press the ENTER key, and the following menu appears on my screen:

InterNIC: Internet Network Information Centre

1. Information about the InterNIC
2. InterNIC Registration Services (N.I.)/

3. InterNIC Directory and Database Services (AT&T)/

Neat, huh?

Let's take a look at that first file, "Information about the InterNIC." I move the cursor to that first entry, press the ENTER key, and the following appears on my screen:

About the InterNIC

In January of 1993 the InterNIC was established as a collaborative project between AT&T, General Atomics and Network Solutions, Inc. and supported by three five-year cooperative agreements with the National Science Foundation. AT&T was to manage the InterNIC Directory and Database Services project; NSI

< snip snip >

Veronicas

Bouncing around Gopherspace, finding neat files and leaving bookmarks, is fun for a while. Soon, however, you are going to want to find a way to locate stuff in Gopherspace a little more quickly.

That's where Veronica comes in. Veronica -- Very Easy, Rodent-Oriented, Net-Wide Index to Computerized Archives -- is a search tool that allows you to quickly scan Gopherspace for particular files and directories.

Veronica is a program that you access through Gopher. Veronica asks you to enter a keyword, and it then searches through a database of over 5,500 Gopher servers and over 15 million Gopher "items" for files and directories whose titles contain your keyword.

What makes Veronica REALLY amazing is that it not only finds these files and directories, it also *GETS* all of these files and directories and places them into a temporary Gopher menu through which you can browse! This temporary menu works just like any other Gopher menu!

There are really only five steps to using Veronica:

1.Start up your Gopher client, 2.Go to a Veronica menu somewhere in Gopherspace, 3.Pick a Veronica server through which you want to conduct your search, 4.Type in a keyword that you want Veronica to search for, and 5.Browse through the "results" that Veronica finds.

Let's take a look at a basic Veronica search. The best place to start is the "mother of all Gopher servers" at the University of Minnesota (gopher.micro.umn.edu). To access this Gopher directly from my command line, I type: `gopher:// gopher.micro.umn.edu` and press the ENTER or RETURN key.

Once I press the ENTER or RETURN key, the following appears on my screen:

```
Rice CMS Gopher 2.4.0                gopher.micro.umn.edu
1/12
Minnesota Gopher Server (Gopher.micro.umn.edu 70)
<menu>  Information About Gopher
<menu>  Computer Information
<menu>  Discussion Groups
<menu>  Fun & Games
<menu>  Internet file server (ftp) sites
<menu>  Libraries
<menu>  News
<menu>_ Other Gopher and Information Servers
<menu>  Phone Books
<search> Search Gopher Titles at the University of Minnesota
<search> Search lots of places at the University of Minnesota
<menu>  University of Minnesota Campus Information
```

Since I used the UNIX Gopher client the first two days of this week, I figured it was only fair to use the VM Gopher client for two days as well. :)

Veronica can be found in the "Other Gopher and Information Servers"

menu at the University of Minnesota, so I move the cursor down to the "Other Gopher and Information Servers" menu line, press the ENTER or RETURN key, and the following menu appears on my screen:

```
Rice CMS Gopher 2.4.0                gopher.tc.umn.edu
1/15
Other Gopher and Information Servers
<menu>   All the Gopher Servers in the World
<search> Search All the Gopher Servers in the World
<menu>_  Search titles in Gopherspace using veronica
<menu>   Africa
<menu>   Asia
<menu>   Europe
<snip snip snip>.
```

Hmm ... I wonder which menu I need to choose. :)

I move the cursor down to "Search titles in Gopherspace using veronica," press the ENTER or RETURN key, and the following menu appears on my screen:

```
Rice CMS Gopher 2.4.0                gopher.tc.umn.edu
1/16
Search titles in Gopherspace using veronica

<search> Find GOPHER DIRECTORIES by Title word(s) (via NYSERNet)
<search> Find GOPHER DIRECTORIES by Title word(s) (via PSINet)
<search> Find GOPHER DIRECTORIES by Title word(s) (via U. ...)
<document> Frequently-Asked Questions (FAQ) ...
<document> How to Compose veronica Queries - June 23, 1994
<menu>   More veronica: Software, Index-Control ...
<search> Search GopherSpace by Title word(s) (via NYSERNet)
<search> Search GopherSpace by Title word(s) (via PSINet)
<search> Search GopherSpace by Title word(s) (via U. ...)
Simplified veronica chooses server - pick a search type:
<search> Simplified veronica: Find Gopher MENUS only
<search> Simplified veronica: find ALL gopher types
```

<document> how-to-query-veronica

<document> veronica-faq

This is going to be a little difficult to explain, but you get to choose which Veronica server you want to use:

1. You can choose a specific Veronica server (NYSERNet, PSINet, or U. Nac. Autonoma de MX) and run your search through that specific server, or 2. You can do a "simplified" search and let Veronica choose a server for you.

There really is not much difference between these methods, so the choice is really up to you.

Once you determine which server you are going to use, you have to determine HOW you want to search through Gopherspace. You have two choices:

1. "Search GopherSpace by Title word(s)" (or "find ALL gopher types") which will show you EVERY FILE AND DIRECTORY in Gopherspace whose title contains the keyword for which you are looking, or 2. "Find GOPHER DIRECTORIES by Title word(s)" (or "Find Gopher MENUS only") which will show you ONLY THE DIRECTORIES (a.k.a. menus) in Gopherspace whose titles contain the keyword for which you are looking.

Obviously, the return from a "GOPHER DIRECTORIES" search will be much smaller than that from a "Search Gopherspace" search. If you are using a common word as your keyword (such as "Internet," "Gopher," "Economics," etc.), your best bet is to do a "GOPHER DIRECTORIES" search to keep from being flooded with returns. :)

I want to do a search of every Gopher directory on the planet that has the word "Roadmap" in it.

As I said earlier, the choice of Veronica sites through which you conduct your search is completely up to you. There should not be a difference between the sites and the results that you will get (notice I said **should** not), so you can pick any site that you want.

I'll just use the first site on the list: NYSERNet. I move the cursor to "Find GOPHER DIRECTORIES by Title word(s) (via NYSERNet)," press the ENTER or RETURN key, and the following appears on my screen:

Enter keyword(s):

The keyword I want Veronica to look for is "Roadmap," so I type

Roadmap

press the ENTER or RETURN key, prop my feet up on the desk, and wait for something to appear on my screen.

Eventually, the following menu appears on my screen:

```
Rice CMS Gopher 2.4.0                empire.nysernet.org
1/82                More
Find GOPHER DIRECTORIES by Title word(s) (via NYSERNet)
<menu>   ROADMAP Internet Training Workshop   ***NUEVO***
<menu>   Roadmap for the Information Superhighway
<menu>   ROADMAP - Online Course on Using the Internet
<menu>   ROADMAP: an Internet Training Workshop by Patrick Crispen
<menu>   ROADMAP: an Internet Training Workshop by Patrick Crispen
<menu>   Roadmap Workshop on Internet and Popular Tools
<snip snip snip>
```

COOL! Although each of these menus is located on different servers around the world, I can access them ALL from this menu! (BTW, searching for "Roadmap" turned out to be a bad idea because all of the menus that Veronica returned point to archives of the old Roadmap workshop, not to archives of the updated Roadmap 96 workshop.)

Usenet (Newsgroups)

Imagine a conversation carried out over a period of hours and days, as if people were leaving messages and responses on a bulletin board. Or imagine the electronic equivalent of a radio talk show where everybody can put their two

cents in and no one is ever on hold.

Unlike e-mail, which is usually "one-to-one," Usenet is "many-to-many." Usenet is the international meeting place, where people gather to meet their friends, discuss the day's events, keep up with computer trends or talk about whatever's on their mind. Jumping into a Usenet discussion can be a liberating experience. Nobody knows what you look or sound like, how old you are, what your background is. You're judged solely on your words, your ability to make a point.

To many people, Usenet IS the Net. In fact, it is often confused with Internet. But it is a totally separate system. All Internet sites CAN carry Usenet, but so do many non-Internet sites, from sophisticated Unix machines to old XT clones and Apple IIs.

Technically, Usenet messages are shipped around the world, from host system to host system, using one of several specific Net protocols. Your host system stores all of its Usenet messages in one place, which everybody with an account on the system can access. That way, no matter how many people actually read a given message, each host system has to store only one copy of it. Many host systems "talk" with several others regularly in case one or another of their links goes down for some reason. When two host systems connect, they basically compare notes on which Usenet messages they already have. Any that one is missing the other then transmits, and vice-versa. Because they are computers, they don't mind running through thousands, even millions, of these comparisons every day.

Yes, millions. For Usenet is huge. Every day, Usenet users pump upwards of 40 million characters a day into the system -- roughly the equivalent of volumes A-G of the Encyclopaedia Britannica. Obviously, nobody could possibly keep up with this immense flow of messages. Let's look at how to find conferences and discussions of interest to you.

The basic building block of Usenet is the newsgroup, which is a collection of messages with a related theme (on other networks, these would be called conferences, forums, bboards or special-interest groups). There are now more than [15,000] of these newsgroups, in several different languages, covering

everything from art to zoology, from science fiction to South Africa.

Some public-access systems, typically the ones that work through menus, try to make it easier by dividing Usenet into several broad categories. Choose one of those and you're given a list of newsgroups in that category. Then select the newsgroup you're interested in and start reading.

Other systems let you compile your own "reading list" so that you only see messages in conferences you want. In both cases, conferences are arranged in a particular hierarchy devised in the early 1980s. Newsgroup names start with one of a series of broad topic names. For example, newsgroups beginning with "comp." are about particular computer-related topics. These broad topics are followed by a series of more focused topics (so that "comp.unix" groups are limited to discussion about Unix). The main hierarchies are:

bionet	Research biology
bit.listserv	Conferences originating as Bitnet mailing lists
biz	Business
comp	Computers and related subjects
misc	Discussions that don't fit anywhere else
news	News about Usenet itself
rec	Hobbies, games and recreation
sci	Science other than research biology
soc	"Social" groups, often ethnically related
talk	Politics and related topics
alt	Controversial or unusual topics; not carried by all sites

In addition, many host systems carry newsgroups for a particular city, state or region. For example, ne.housing is a newsgroup where New Englanders look for apartments. A growing number also carry K-12 newsgroups, which are aimed at elementary and secondary teachers and students. And a number of sites carry clari newsgroups, which is actually a commercial service consisting of wire-service stories and a unique online computer news service.

... With so much to choose from, everybody will likely have their own unique Usenet reading list. But there are a few newsgroups that are particularly of interest to newcomers. Among them: news.announce.newusers;

news.newusers.questions; news.announce.newsgroups; news.answers;
alt.internet.services; alt.infosystems.announce

Appendix V

Search Engine Commands

Note: The command structure documented below is Alta Vista's; however, most search engines work in much, if not exactly, the same manner - using the same commands and syntax.



paris "petite galerie" louvre

Finds documents containing as many of these words and phrases as possible, ranked so that documents with the most matches are presented first. A phrase is any string of adjacent words. The preferred way to link words into a phrase is to use quotes. Lower-case search will find matches of capitalized words also. For example, paris will find matches for paris, Paris, and PARIS. Capital letters in a search will force an exact case match on the entire word. For example, submitting a query for parIS will search only for matches of parIS. (Don't be surprised if there are none.)

+noir +film -"pinot noir"

Matches may be required, or prohibited. Precede a required word or phrase with + and a prohibited one with -. This query finds documents containing film and noir, but not containing pinot noir.

antique;pump;organ

Punctuation glues words into a phrase, just as quotes do. Punctuation is treated as white space, so this example is equivalent to "antique pump organ" (that is, three words enclosed in quotes).

quilt*

This query matches pages that contain at least one word such as quilt, quilts, quilting, quilted, quilter etc. Hint: The *-notation is also useful for searching for variant spellings. For example, alumi*m will find matches for both aluminum and the British English aluminium.

Examples of Simple Queries

To find the documents most relevant to what you need, construct your query as precisely as you can. AltaVista ranks the documents found so the ones matching the most words and phrases in the query are listed first. Even so, you might not find exactly what you want at the head of the list if your search is too general.

For example, suppose you wanted information about the languages of American Indians but you did not know any specific language to search for. You might start with the following query: american indian language. (The word-count numbers quoted here are not updated as new pages are indexed. They serve as an example only.)

american indian language

result:

word count: indian 395185, language 2048030, american 2654433. 100000 documents

found containing as many of these words as possible, in both upper and lower case.

observation:

This search is much too broad. Of the first ten documents found, the first few

appear relevant, but the rest are documents about languages in the Asian subcontinent.

strategy:

Make clear how you want the query to be parsed. In other words, link american and indian together as a phrase. Include the plural of language in the search also by using the *-notation.

"american indian" language*

result:

word count: american indian 30000, language 2050463. 20000 documents found.*

observation:

The documents found are now relevant to information about American Indian languages, enabling you to refine your search further. For example, suppose you want to know more about the ojibwe language that was mentioned in one of the documents found by this query.

strategy:

Require that the word ojibwe and its variants ojibway and ojibwa be included in your next search. Since this is an American Indian word, you could now omit american indian from the search.

language* +ojibw*

result:

word count: ojibw 3625, language* 2050463. 1000 documents found.*

observation:

Bingo!

Ranking Simple Queries

For Simple Queries, AltaVista will rank the results based on a scoring algorithm; documents with a higher score appear at the head of the ranking list. A document has a higher score if the following hold:

- the query words or phrases are found in the first few words of the document (for example, in the title of a Web page or in the headers of Usenet news articles).
- the query words or phrases are found close to one another in the document.
- the document contains more than one instance of the query word or phrase.

You are therefore likely to find what you want close to the head of the resulting list of matches.

Constraining searches

It is possible to restrict searches to certain portions of documents by using the following syntax. The keyword (link, title, image,...) should be in lower-case, and immediately followed by a colon.

Constraining searches in Web pages:

title:"The Wall Street Journal"

Matches pages with the phrase The Wall Street Journal in the title.

anchor:click-here

Matches pages with the phrase click here in the text of a hyperlink.

text:algol68

Matches pages that contain the word algol68 in any part of the visible text of a page. (ie, the word is not in a link or an image, for example.)

applet:NervousText

Matches pages containing the name of the Java applet class found in an applet tag; in this case, NervousText.

object:Marquee

Matches pages containing the name of the ActiveX object found in an object tag; in this case, Marquee.

link:thomas.gov

Matches pages that contain at least one link to a page with thomas.gov in its URL.

image:comet.jpg

Matches pages with comet.jpg in an image tag.

url:home.html

Matches pages with the words home and html together in the page's URL. Equivalent to url:"home html".

host:digital.com

Matches pages with the phrase digital.com in the host name portion of the URL.

domain:fr

Matches pages from the domain fr. There are few domain names: .com, .edu, .net, country codes (.fr is for France), and a few others.

Constraining searches in Usenet news articles:**from:napoleon@elba.com**

Matches news articles with the words `napoleon@elba.com` in the From: field.

subject:"for sale"

Matches news articles with the phrase for sale in the Subject: field.

You can combine this with a word or phrase. For example, `subject:"for sale" "victorian chamber pots"`.

newsgroups:rec.humor

Matches news articles posted (or crossposted) in news groups with rec.humor in the name.

summary:invest*

Matches news articles with the word invest, investment, investiture, etc., in the summary.

keywords:NASA

Matches news articles with the word NASA in all caps in the keyword list.

More about Words, Phrases, Capitalization, Accents, and the *-Notation

Words

AltaVista treats every page on the Web and every article of Usenet news as a sequence of words. A word in this context means any string of letters and digits delimited either by punctuation and other non-alphabetic characters (for example, `&`, `%`, `$`, `/`, `#`, `_`, `~`), or by white space (spaces, tabs, line ends, start of document, end of document). To be a word, a string of alphanumerics does not have to be spelled correctly or be found in any dictionary. All that is required is that someone typed it as a single word in a Web page or Usenet news article. Thus, the following are words if they appear delimited in a document: `HAL5000`, `Gorbachevnik`, `602e21`, `www`, `http`, `EasierSaidThanDone`, etc. The following are all considered to be two words because the internal punctuation separates them: `don't`, `digital.com`, `x-y`, `AT&T`, `3.14159`, `U.S.`, `All'sFairInLoveAndWar`.

Only the words in a document are significant to AltaVista. AltaVista does not index punctuation or white space, so you can use AltaVista to look only for words and phrases, not punctuation.

Phrases

A phrase is a string of words that are adjacent in a document, although they may be separated by any amount of white space or punctuation. They do not have to be grammatical in any human language--they just have to occur in a document as an adjacent sequence of words. Some examples:

President of the U.S.A. (6-word phrase)

<http://www.election.digital.com> (5-word phrase)

Since the punctuation and white space are insignificant to AltaVista (except that they delimit words), the phrases above are indistinguishable from the following variants:

President of the U S A [http www election digital com](http://www.election.digital.com)

There are two conventions for typing a phrase in a query. The best way, leading to the least ambiguity, is to type the phrase as "a sequence of words separated by spaces and surrounded by double quotes". However, as an alternative, you may type the words of the phrase with punctuation (and no white space) between each pair of words. For example, these are all equivalent as queries:

"President of the U S A" President-of-the-U-S-A President/of/the/U/S/A
President.of.the.U-S-A

The first is the one we generally recommend. Be aware that the punctuation characters & | ! and ~ have meaning in Advanced queries, and * indicates the *-notation used in both Simple and Advanced queries.

Capitalization

Capital letters are considered distinct from lower-case letters. When a word is found in a Web page or a news article, its case is preserved when it is stored in

the index.

When you enter a word in a query, therefore, it is always safe, and generally recommended, to type it all in lower-case, because lower-case letters indicate a case-insensitive match. If you type any capital letters, you force an exact case match on the entire word.

Thus, the word turkey in a query will match any of turkey, Turkey, tUrKeY or TURKEY occurring in a document. But the capitalized word Turkey in a query will match only Turkey in the document, and not any of the other capitalization variants.

Accents

Accents are treated in the same way as capitalization. An accented word used in a query forces an exact match on the entire word. For example, if you use éléphant in a query, you will match only the French spelling for the pachyderm. However, if you do not care to enter accents in the search window (something which is browser, platform, and keyboard-dependent), you can always safely omit the accents, thereby matching both the French and English spellings.

The *-notation

To search for occurrences of any of a group of words with a similar pattern, AltaVista provides the *-notation. For example, you might want to search for matches of sing, singer, singers, singing. In this case, place the *-notation at the end of the word whose inflections you want to include in the search: sing*. But, a word of warning. AltaVista will also match words lexically unrelated to your query word. So the query sing* will also find matches for singe, single, singular, and for foreign words such as French singulier.

The *-notation cannot be used without restriction. To make such queries computational feasible, AltaVista requires that the * be used only after at least three letters. The *-notation will match from zero up to five additional letters in lower-case only. Capital letters and digits will not therefore be matched.

The *-notation can sometimes be useful for finding variant spellings: for

example, `cantalo*` will find matches for cantaloup, cantaloupe, cantaloupe, and their plurals. But take care how you construct the query word. For example, if you want to find matches for both color and colour, a query of the form `col*r` is not the most efficient. This query will also find matches for collector and atomic collider. In this case, it is more efficient to submit the query `colo*r`, which will find matches for both color and colour.

Finally, if your search using the `*`-notation finds too many matches, AltaVista will ignore the query. The query `inte*`, for example, produces the result,

Ignored `inte*`: 4292323

No documents match this query

The META tag: Controlling how your Web page is indexed by AltaVista

In the absence of any other information, AltaVista will index all words in your document (except for comments), and will use the first few words of the document as a short abstract.

It is however possible for you to control how your page is indexed by using the META tag to specify both additional keywords to index, and a short description. Let's suppose your page contains:

```
<META name="description"
content="We specialize in grooming pink poodles.">
<META name="keywords" content="pet grooming, Palo Alto, dog">
```

AltaVista will then do two things:

- It will index both fields as words, so a search on either poodles or dog will match.
- It will return the description with the URL. In other words, instead of showing the first couple of lines of the page, a match will look like the following:

Pink Poodles Inc

We specialize in grooming pink poodles.
<http://pink.poodle.org/> - size 3k - 29 Feb 96

AltaVista will index the description and keywords up to a limit of 1,024 characters.

Advanced Queries use operators and expression syntax to construct queries. The rules for defining words and phrases, capitalization and wildcards are, however, the same as for Simple Queries.

You must use the binary operators **AND, OR, NEAR**, and the unary operator **NOT** to combine words and phrases. The operators can also be written in lower-case: **and, or, not, near**. Alternatively, you can use the symbols **& for AND, | for OR, ! for NOT, and ~ for NEAR**. If you need to use any of these words as search words in a query, you must place them in quotes. You are allowed to use parentheses to group search expressions; in fact it's recommended as less confusing.

Using the binary operators AND, OR, and NEAR, and the unary operator NOT

kayak AND "San Juan Islands"

The operator AND ensures that both are present in the resulting documents. The operator AND binds less tightly than juxtaposition.

"Digital Equipment Corporation" OR DEC

The operator OR ensures that at least one is present in the resulting documents. The operator OR binds less tightly than the operator AND.

Louis NEAR Monier

The operator NEAR ensures that both are within ten words of each other in the resulting documents. The operator NEAR binds less tightly than the operator NOT and associates to the left. This query matches Louis Monier, Louis M.

Monier and Monier, Louis.

vegetable AND NOT "brussel sprouts"

The operator NOT is used to exclude words or phrases from a query. The operator NOT binds less tightly than the operator OR . This query is equivalent to vegetable and (not "brussel sprouts"). Do not use vegetable NOT "brussel sprouts"; this query is syntactically illegal.

Examples showing the importance of parentheses

gold or silver and platinum
gold or (silver and platinum)
(gold or silver) and platinum

The first two queries are equivalent. They return documents containing both silver and platinum, together with documents containing gold. If you want the search to find documents containing platinum and, in addition, in the same document, either gold or silver, you must use the third query pattern.

not gold and silver
(not gold) and silver
not (gold and silver)

The first two queries are equivalent. They return documents containing silver but not gold. If you want the search to eliminate documents that contain both gold and silver, you must use the third query pattern.

gold near silver and platinum
(gold near silver) and platinum
(gold near silver) and (gold near platinum)

The first two queries are equivalent. They return documents containing gold located close to silver, and in addition, in the same document, the word platinum. If you want the search to find documents containing gold located close to silver and, in addition, in the same document, gold close to platinum, you must use the third query pattern.

not gold near silver
not (gold near silver)
silver and not (gold near silver)

The first two queries are equivalent. They eliminate from the search all documents containing silver located close to gold. If you want the search to find documents containing silver but want to eliminate those that contain gold located close to silver, you must use the third query pattern.

gold near silver or platinum
(gold near silver) or platinum

The two queries above are equivalent. They find documents containing gold located close to silver, together with documents containing platinum.

gold near (silver or platinum)
(gold near silver) or (gold near platinum)

The two queries above are equivalent. They find documents containing gold located close to silver, together with documents containing gold located close to platinum.

How searches work: Advanced Queries

To simplify the description that follows, we refer to the type-in field labelled Selection Criteria as the search field, and that labelled Results Ranking Criteria as the ranking field.

How AltaVista performs queries

Simple Queries and Advanced Queries are different interfaces to the same search engine. This being true, you might be surprised that, under certain conditions, apparently identical queries can produce slightly different results, depending on whether you submit them as Simple or Advanced Queries.

Compare, for example, a one-word Simple Query, say plato, with the same word submitted as an Advanced Query, but with no ranking specified. More

specifically, this latter query has plato in the search field and nothing in the ranking field. Each of the two queries produces "about 20000" documents, but the ranking is different in each case.

The explanation for the difference in ranking is rather complex, but briefly, AltaVista implements Simple Queries as Advanced Queries. More specifically, a Simple Query gets transformed into a boolean expression together with a set of words to rank the results.

In the example above, AltaVista will implement the Simple Query consisting of the one word, plato as an Advanced Query with nothing in the search field, but plato in the ranking field. Recall that in this example, the Advanced Query had plato in the search field and nothing in the ranking field; in other words, the two queries were actually not identical, and hence the different rankings.

If you submit a different Advanced Query, this time with plato in both the search field and the ranking field, the rankings of the documents matched will also be identical to those produced by the Simple Query for plato.

How AltaVista ranks Advanced Queries

Use the type-in field labelled Results Ranking Criteria to enter words or phrases that will determine the ranking of the search results. Recall from the previous section that ranking an Advanced Query is equivalent to performing a Simple Query; the same scoring algorithm is used in both cases. Documents with a high score will appear at the head of the list. High scores are assigned if the selected ranking word appears in the first few words of the document (say, in the title of a Web page or in a header), or if the document contains more than one instance of the ranking word.

Glossary

A

Archie

A network service that searches FTP sites for files.

B

browser

Software that provides an interface to the World-Wide Web.

C

CERN

The European collective of high-energy physics researchers (European Organization for Nuclear Research).

Client

A computer or program requests a service of another computer or program.

client-server architecture

A structure in which programs use and provide distributed services.

CSO

Central Services Organization. A service which facilitates user and address lookup in databases.

E***Doug Engelbart***

The inventor of many common devices and ideas used in computing today, including the mouse.

F***File Transfer Protocol (FTP)***

A common method of transferring files across networks.

finger

A service that responds to queries and retrieves user information remotely.

G***Gopher***

A versatile menu-driven information service.

Graphics Interchange Format (GIF)

A commonly used graphics format which compresses the image and stores color information within the file.

H***home page***

The default document World-Wide Web users see when connecting to a Web server for the first time.

HTML 3.0

The latest version of HTML (Hypertext Markup Language)

HyperCard

A personal hypermedia/multimedia creation system for use on Apple Computers.

hyper-g

A distributed hypertext system mostly popular in Europe.

hyperlink

A connection between hypermedia or hypertext documents and other media.

hypermedia

Hypertext that includes or links to other forms of media.

hypertext

Text that, when selected, has the ability to present connected documents.

Hypertext Markup Language (HTML)

The standard language used for creating hypermedia documents within the World-Wide Web.

Hypertext Transmission Protocol (HTTP)

The standard language that World-Wide Web clients and servers use to communicate.

hytelnet

A hypertext interface to telnet.

I***inline image***

A graphic within a hypermedia document that is displayed on the same page as text.

Internet

The global collective of computer networks.

ISO 8859

A character set defined by international standards that includes accented letters and symbols.

M

menu bar

A common element in graphic computer interfaces that allows users to select options from menus.

Mosaic

A mouse-driven interface to the World-Wide Web developed by the NCSA.

Motion Pictures Entertainment Group (MPEG)

A consortium of experts in the entertainment industry that developed the MPEG standard format for digital video and audio.

N

National Centre for Supercomputing Applications (NCSA)

A federally-funded organization whose mission is to develop and research high-technology resources for the scientific community.

National Science Foundation (NSF)

A federally-funded organization that manages the NSFnet, which connects every major research institution and campus in the United States.

navigation buttons

Elements within a graphic computer World-Wide Web interface that allow users to review the information they have previously seen in a number of ways.

NCSA Collage

Collaborative (shared whiteboard) software developed by the NCSA.

Network News Transfer Protocol (NNTP)

A common method by which articles over Usenet are transferred.

P***page***

A hypermedia document as viewed through a World-Wide Web browser.

Q***QuickTime***

A digital video format developed by Apple Computer that integrates synchronized video and audio with compression techniques.

R***Rich Text Format (RTF)***

A common interchange format for the exchange of electronic documents between computers.

S***scroll bar***

A graphic computer interface element that allows the user to scroll electronic documents on the computer screen.

server

A program which provides a service to other client programs.

T***telnet***

A program which allows users to remotely use computers across networks.

U***URL***

A URL (Uniform Resource Locator) is similar to a traditional telephone number. Every document on the WWW has an unique URL address, therefore every document can be viewed instantly if its URL is known. Instead of "1-800-555-1234," the WWW uses addresses like:
<http://www.uiuc.edu/>

A Final Note

May 5, 1997

I hope that the workshop and this manual will set you on a long and rewarding path of Internet experimentation and exploration. Should you wish assistance in planning a theme or introducing your class to the 'net, please feel free to contact me via one of the methods listed below.

Regards and Best Wishes,

Peter

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