TRAINING COURSE:
INTERNET FOR TRAINERS
Part 1: The Internet Trainer's Guide Workbook

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1. GETTING STARTED

1.1 WHAT IS THE INTERNET?

The Internet is a worldwide network made up of other computer networks. It interconnects the simplest personal computers and the most sophisticated supercomputers. No one knows exactly how big the Internet is. No one person or organization runs the Internet. It is the collective effort of many thousands of individuals and organizations in many different countries. It is coordinated internationally by the Internet Activities Board which is in turn overseen by the Internet Society. These groups are responsible for the Internet standards.

Internet users have access to thousands of discussion groups where users share information about different topics, thousands of library catalogs and subject databases, gigabytes of software programs, text files, images, music, video, courseware, and, of course, electronic mail.

1.1.1 History of the Internet

The Internet began in 1969 with the ARPAnet, a project started by the United States Department of Defense. ARPAnet stands for Advance Research Projects Agency, the branch of the Department of Defense in charge of awarding grant money. (The agency is now known as DARPA for Defense Advance Research Projects Agency). ARPAnet was an experiment in networking, designed to build a computer network that could withstand enemy attacks (e.g., bomb attacks), and to link together the Department of Defense with military research contractors, including the many universities engaged in military research. By dispersing the network over a wide area, and using a web of connections between the computers, a system could continue functioning even when portions of it were destroyed (more than 60%). The ARPAnet was very successful in creating reliable networking due to dynamic rerouting. This involved routing traffic from a disrupted link (such as one destroyed by a bomb, or more likely, a backhoe cutting through a cable) through the surviving portions of the system.

Large ARPAnet was broken into two parts: MILnet which manages the military sites, and a smaller version - the non-military ones. They were able to communicate by using Internet Protocol (IP), which allows information to be transferred from one net to another as needed.

In the late 1980’s, the National Science Foundation (NSF) created five supercomputers at major universities that researchers all over the country could connect to using the ARPAnet. Due to a variety of technical and political reasons, the plan to use the ARPAnet failed. In response to this, the NSF created its own, much faster network, the NSFnet, to connect the computer centers.

The NSFnet worked so well that by 1990, so much business had moved from the ARPAnet to the NSFnet that, after 20 years the ARPAnet had outlived its usefulness and shut down. Although the supercomputing centers that the NSFnet was supposed to support turned out to be not so successful, the NSFnet continues as the foundation of the Internet in the United States.

1.1.2 How the Internet Works

1. UNIX

UNIX is an operating system used on mainframe computers that was developed at the University of California at Berkeley. It was created before personal computers existed and is designed to let many people share the same computer simultaneously. Even if your computer is an IBM compatible PC, or a
Macintosh, the host computer through which you are connected to the Internet (and through which you work) will usually be a UNIX machine.

2. Client/Servers

Many Internet services utilize a client/server system. A server is a computer that contains a particular resource (such a database) that you want to use. A client is a program that runs on your computer (or your service provider's computer) that allows you to access that resource.

Standard Protocols

To ensure that different types of computers can work together, programs are written using standard protocols. A protocol is a set of rules that describe, in technical terms, how something should be done. For example, there is a protocol that describes exactly what format should be used for a mail message.

1. Internet Protocol (IP)

The Internet Protocol or IP is the set of rules used to pass packets of data from one host to another. TCP/IP is a common name for a collection of over 100 protocols that are used to connect computers and networks.

2. Transmission Control Protocol (TCP)

Transmission Control Protocol or TCP is used to transfer information. Data is not transmitted from host to host as a constant stream of information, but is broken down into small pieces. Each piece is numbered so receipt can be verified and the data can be put back into proper order. Each piece of information is placed into a packet or an "envelope" of its own and is then marked with the addresses of its sender and receiver, as well as a sequence number, and some error control information. The size of packet is usually between 1 and 1500 characters. Packets are then sent over the network in an IP envelope, where it is the job of the IP to transport them to the remote host.

3. Telnet

Telnet is a Internet's log-in protocol that allows you to log into other Internet computers and begin an interactive communication with that computer. With telnet you can log into on-line databases, library catalogs, and thousands of specialized and useful information servers around the world.

4. File transfer protocol (FTP)

File transfer protocol allows you to transfer computer files between Internet connected computers.

5. Bridges

A bridge is a system which connects two compatible networks together, and are most commonly used to connect two Ethernet networks.

Gateways

A gateway is a system which connects two incompatible networks together. (for Example Internet Protocol Network and Apple Talk).

1. Routers

A router is a system used to transmit data between two computer system or networks using the same protocol.

1.1.3 The Most Commonly Used Internet Services

1. Electronic Mail (E-mail)

With E-mail you can send a message to any person with a computer account anywhere in the world and often get a reply on the same day. You can also join thousands of topic-oriented discussion groups known as "Liserv discussion groups" where you can share information with people around the world interested in the same topics that you are.

2. Usenet News

The thousands of Usenet Newsgroups are electronic forums for discussion, debate, questions, information, talk, and even for the distribution of software, images, sounds, and other information.

3. Gopher
Gopher is a menu-based, hierarchical system for organizing and retrieving networked information regardless of where the information is stored.

4. Wide Area Information Server (WAIS)
WAIS stands for Wide Area Information Server. It is a program that allows you to search for keywords in specific pre-indexed databases. It then retrieves full text information from whichever databases that you have chosen. The retrieved data is ranked according to how relevant it is to your search words. These databases are located on a variety of different remote computers. WAIS databases can also be accessed via Gopher or World Wide Web.

5. World Wide Web (WWW)
World Wide Web is an innovative hypertext front-end program that is capable of combining sounds, images, and text on a single "page" that is filled with hyperlinks to other "pages" and other Internet resources.

6. Talk Facility
Internet's Talk allows you to connect your computer with another computer on the net, and then use the connection to type messages back and forth. Some systems do not support talk.

7. Internet Relay Chat (IRC)
IRC is a program that lets you hold live keyboard conversations with people around the world. 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.

When appropriate, UNIX commands are given for each Internet application/tool. However, it should be noted that not all UNIX operating systems are configured alike. In addition, there are many different types and kinds of Graphical User Interfaces (GUI) for these Internet tools. Consult the user documentation for these GUI applications for appropriate commands.

1.2 IP ADDRESSING

- Every computer (host) on the Internet is identified by an IP number.
- Every IP number is different - if two computers had the same IP number, the network would not know which one to deliver data to.
- An IP number is a 32-bit binary number, that is, a string of 32 ones and zeros.

| IP number: | 0000010101000101111001011100000111 |
| Decimal version: | 10 . 139 . 203 . 131 |

Region of IP numbers:

Smallest: 00000000000000000000000000000000 = 0.0.0.0
Largest: 11111111111111111111111111111111 = 255.255.255.255

There are $2^{32} > 4,000,000,000$ IP numbers in total.

Names better than they do numbers, so they created the Domain Name System (DNS). The Domain Name System associates each numerical IP address with an easier-to-remember DNS name. (For example, thanks to the Domain Name System, the IP address 130.160.4.100 becomes the much easier-to-remember UA1VM.UA.EDU).

UKMA numbers: 194.44.142.4
DNS name: roller.ukma.kiev.ua
Both IP addresses and domain names should work equally well.

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDU</td>
<td>Educational sites</td>
</tr>
<tr>
<td>COM</td>
<td>Commercial sites</td>
</tr>
<tr>
<td>GOV</td>
<td>Government sites</td>
</tr>
<tr>
<td>NET</td>
<td>Network administrative organizations</td>
</tr>
<tr>
<td>MIL</td>
<td>Military sites</td>
</tr>
<tr>
<td>ORG</td>
<td>Organizations that don't fit into other categories (usually not-for-profit organizations)</td>
</tr>
<tr>
<td>INT</td>
<td>International Organizations</td>
</tr>
<tr>
<td>SU</td>
<td>Soviet Union (Yes, there is still a Soviet Union, at Ukraine)</td>
</tr>
<tr>
<td>UA</td>
<td>Ukraine</td>
</tr>
</tbody>
</table>

(other countries have their own country codes)

### 1.3 Connecting to the Internet

In order to start our Internet experience, we needed a computer, a modem or LAN adapter, which connected to Internet network, some telecommunications or LAN software, and a service that would give us access to the Internet.

There are many types of communication software available, from shareware to expensive, commercial programs. What type of software you will need depends on your type of computer, what type of operating system you are running (DOS, Windows, etc.) and what type of Internet connection you have.

### 1.4 Levels of Connectivity

There are generally three levels of Internet connectivity, although there are several variations of the three levels. The "three-level approach" to Internet connectivity is a very simplified view of the different ways that you can access the Internet.

#### 1.4.1 Gateway Access Connectivity

Level One connectivity ("gateway access") is access to the Internet from a network that really is not on the Internet. Picture two circles that touch each other at only one point. One of the circles is the Internet, the other circle is a non-Internet network, and the point where the two networks touch is called a gateway. The gateway allows the two networks to "talk" to each other, but users of the non-Internet network are limited in their ability to fully access all of the tools available on the Internet. With Level One connectivity, you are limited in what you can access on the Internet by what your service provider allows you to access.

For Examples: America Online (AOL), CompuServe, Prodigy, and many of the other commercial on-line services have gateway access to the Internet.

#### 1.4.2 Remote Modem Access Connectivity

Level Two connectivity ("remote modem access") is access through a dial-up terminal connection. This is when, by use of a modem, a "host" is accessed and your computer acts as if it were a terminal directly connected to that host. The host that you connect to is actually "on" the Internet, i.e.
it is connected to the Internet by a full time level three" connection (see the next section, "Level Three Connectivity," for details).

As well, with Level Two connectivity you must always remember that everything you are doing is one through the host, NOT through your own computer. If you download a file from somewhere that file will go to the host, NOT to your own personal computer. You will need to download the file one more time -- this time from the host to your computer -- if you want the file to be on YOUR computer (your local Internet Service Provider (ISP) can tell you more about this).

1.4.2.1 Terminal Emulation

Internet services offering terminal emulation are the most common types available. Using terminal emulation software, the user can send needed commands and receive responses from the host computer on the Internet. This kind of interaction is known as terminal emulation because it mimics the relationship of a terminal to the main computer to which it is connected. The typed communication via modem with the Internet host is so immediate that it appears as though the user is using the operating system of the host Internet computer on their own personal computer.

The standard for terminal-based communications is VT100 (or VT220 for up-to-date systems). If you do not have a VT100 terminal, or a terminal that can pretend it's a VT100 terminal, you may have to set your terminal emulation to either your correct terminal type or, if you do not know your correct terminal type, to a "dumb" terminal emulation.

1.4.3 Direct Internet Access

Level Three connectivity ("direct Internet access") is the highest, and most expensive, level of connectivity. With Level Three connectivity, your computer is directly wired into the Internet using high-speed lines, and is on-line twenty-four hours a day, seven days a week. Level Three connectivity is great if you have a mainframe or a major site with hundreds of users, but is not too advantageous if you are a sole user with a beat-up personal computer.

1.4.4 Dial-in Direct Connection

Your computer can use a modem to establish a dial-in direct connection referred to as a SLIP (Serial Line Internet Protocol), CSLIP (Compressed SLIP), or PPP (Point to Point Protocol) connection. With dial-in direct connections, your computer will become a physical part of the Internet, with its own host name, and IP address, rather than emulating a terminal. This type of connection requires special software (TCP/IP) and can be very complicated to set up.

PPP, SLIP, or SLIP/PPP Emulation

A "serial line Internet protocol" (SLIP) or "Point to Point Protocol" (PPP) used to be the ONLY way to allow the user to run a graphical interface, and thus use the native (and familiar) environment of his or her own personal computer, such as Windows or DOS. Currently PPP is said to be more robust, and easier to configure.

PPP or SLIP accounts are distinctly different from UNIX shell accounts, for they lack disk space on an Internet-connected computer. In order to place material on the Internet for access by gopher, FTP, or World-Wide-Web, one needs a shell account. When ordering a PPP account, be sure to ask if a shell account is included.

Software products like The Internet Adapter (TIA) now make it possible to run graphical interface over an ordinary UNIX shell account, so PPP or SLIP accounts are no longer the only way to go graphical. This is fortunate, because plain UNIX shell access is still the most common.

For more information see [1][2].

The Internet Adapter (TIA)
The Internet Adapter is UNIX software which can be configured in the home directory of the individual user of a shell account, or a site can obtain a license. Setup of individual UNIX software requires only a few minutes on a shell account, and is fairly straightforward.

On the Windows side, a SLIP setup for Trumpet Winsock 1.0, used in a manual dialing mode to access a UNIX shell account running The Internet Adapter (TIA), and this seemed quite easy to configure, given a simple set of instructions. Information on The Internet Adapter (TIA) can be obtained by sending a mail message to tia-single@marketplace.com or more extensive information is available by gopher to marketplace.com[5].

1.5 INTERNET ACCESS

There are several ways to connect to the Internet if you are not connected by a direct or dial-in direct connection. Many large companies are connected to the Internet and may allow their employees access. Some government departments have Internet access, and virtually many universities and colleges are connected in Ukraine.

If you cannot get access through your company or college, an alternative is to look for a free community computing service, or Freenet (Ukrainian office of United Nations), or Open Society of Soros Foundation.

If you cannot find a way to access the Internet for free, you can get Internet access by paying for it. There are many companies and organizations that charge you a certain amount per month, along with a fee for connect time.

When looking for a service provider, look for one with service in your area. Even if a provider is based far from you, it may provide a local access number.

1.5.1 Connecting to Workshop UNIX Server

You can run Telnet special computer program, for example NCSA for Macintosh or Microsoft Telnet for Windows. After running NCSA open File - menu and choose "Open connection" where we can write host name our UNIX Server, for example: roller.ukma.kiev.ua[4]. When appear Login prompt you must input your login-name and when appear Password prompt you must input your password.

Example 1: (Run Telnet application)
Connect to remote host: roller.ukma.kiev.ua
login: stud2
Password: Your_password

1.6 UNIX SHELL

As we mentioned, this type of service offers a "command line interface," using simple UNIX commands. The learning curve is steeper than with the graphical interface, though there can be compensation rewards of increased customizability and power. In any case, it good to learn a little UNIX, even if it is not the main interface one will be using. Sooner or later, one will encounter it. Good help files are very useful in overcoming hurdles, as is a good beginning book.
2. ELECTRONIC MAIL (E-MAIL)

E-mail is shorthand for Electronic Mail, and is the most popular and easy-to-use tool on the Internet. There are a variety of software packages for reading and sending E-mail. All should provide help files, and allow you to compose, read and answer mail. They should also have an address book and the ability to maintain files in folders.

Mail Readers:
UNIX: mail, Pine,
Windows: RFDMail, Pegasus Mail, Eudora
Macintosh: Eudora

Mail can be retrieved from any dial-up terminal emulation software, so one can read mail anywhere, though the crudest of temporary Internet access situations. Those skilled in handling some of these basic UNIX mailers can quickly delete or save to a file specific messages based on a keyword search scheme. On the down side, the UNIX mail programs are more difficult to use and less flexible for the average user.

2.1 UNIX ELECTRONIC MAIL PROGRAM “MAIL”

Sending mail. To send a message to one or more other people, Mail can be invoked with arguments which are the names of people to send to.

control-D (or ‘.’) end of the message, must be at the beginning of a new line;
-s a subject specified. (Only the first argument after the -s is used as a subject.)

Reading mail. In normal usage mail is given no arguments. It checks your mail out of your system mailbox, then prints out a one line summary of each message there.

p print the current message
‘+’ and ‘-’ moving backwards and forwards, and simple numbers;
h show the headers;
d delete the message;
r reply to the message;
u undelete the message by giving its number.

Deletion causes the Mail program to forget about the message. This is not irreversible.

Specifying messages. Commands such as print, delete and from can be given a list of messages as an argument in order to apply to a number of messages at once:
delete (or d) 1 2 - deletes messages 1 and 2;
delete (or d) 1-5 deletes messages 1 through 5;
‘^’ addresses the first message;
‘$’ addresses the last message;
exit (or x) Effects an immediate return to the Shell without modifying the user's system mailbox, his mbox file, or his edit file in -f.
quit (or q) Effects an immediate return to the Shell with modifying the user's system mailbox.
save (or s) filename Effects an immediate save your current mail in file with name "filename".

Example 2: (How to send message to stud2@roller.ukma.kiev.ua)
roller:/home/teacher/stud2/->mail stud2@roller.ukma.kiev.ua
Subject: test
This is only test
.
EOT
roller:/home/teacher/stud2/->
New mail for stud2@roller.ukma.kiev.ua has arrived:
----
From:stud2@roller.ukma.kiev.ua (Class Student 2)
Subject: test
This is only test
----
(press enter)
roller:/home/teacher/stud2/->

Example 3: (How to read messages)
[roller] [/pub/home/ teacher/stud2]:mail
"/var/mail/stud2":9 messages 5 new
1 root@roller.ukma.kiev.ua Wed Oct 30 20:51 25/823 "Nvi saved the file vi"
2 knv@roller.ukma.kiev.ua Wed Oct 30 20:56 97/3053 "Text Version of the I"
N 3 stud2@roller.ukma.kiev Fri Nov 1 19:16 12/360 "test"
& 3
Message 3:
From: roller.ukma.kiev.ua/stud2 Fri Nov 1 19:16:51 1996
Date: Fri, 1 Nov 1996 19:16:51 +0200
From: stud2@roller.ukma.kiev.ua (Class Student 2)
To: stud2@roller.ukma.kiev.ua
Subject: test
This is only test
& d3
#delete message
& q
#quit from mail
roller:/home/teacher/stud2/->

Example 4: (How to read old messages from mbox)
roller:/home/teacher/stud2/->mail -f mbox

2.2 **UUENCODE AND UUDECODE**

Historically it turned out that all Internet is covered by English language. This is, of course, not good; this is very bad. In order to overcome this obstacle and introduce national tastes into the net people have figured out different ways of how to incorporate national characters into different software. There is, however, one generic rule here. This rule is hidden in a way of how a computer recognizes characters. Characters are coded according some scheme, and each character corresponds to some number. One of such schemes is called ASCII or American Standard Code for Information Interchange. It has only 128 characters in it: some control characters, special characters like ".", ";" or "!" and letters. It turns out that you need only 7 bits to code all of them: 2 to the 7th power gives you 128. If you want to code something else -- national characters, for Example -- you have to tell your computer that it has to operate in 8 bit mode. In this mode it's possible to compose a table of 256 characters. Usually, ASCII characters sit from 0 to 127, all others are located from 128 up to 255. If you wish to code some Eastern characters you, obviously, need more numbers: it translates to more bits in a numeric grid of your computer. Japanese characters, for Example, demand 16 bits (or 2 bytes)
to be coded. Well, if you told your computer to turn 8th bit on, all you would have to do is to load an appropriate font and have a nice time. This is an ideal situation.

Let's now discuss "Cyrillic" aspects of the internationalization. The problem that comes here is choosing an appropriate coding table. It's a table -- much like ASCII -- that codes actual characters into numbers that a computer may recognize. There are at least 7 different schemes of coding Cyrillic. Note, that there are schemes to code Slavic letters: Ukrainian, Russian, Serbo-Croatian, Macedonian. Those tables are slightly different one from another but the basic rule is the same: all Cyrillic letters are located beyond 127th number of ASCII which is a 7 bit table.

Thus if you want to use Cyrillic letters in your E-mail messages you need use server and client software that support 8 bits coding.

It is possible in real life that you can work at system which does not support 8 bit coding (for example old versions of sendmail program loses 8th bit of character. Sendmail is a responsible for sending and receiving mail program on UNIX hosts).

There is an extremely crude solution for that -- using utilities called uuencode and uudecode. These take a binary file (your 8bit text is a "binary" file for these utilities) and convert it to what they call a "text" file.

In other words, the utility, namely uuencode, "hides" 8th bit inside a 7bit text following some special algorithm: there are always ways to fool a machine. If you look to the result you'll see a garbage. You can send this garbage over the mail. HOWEVER!! And here is the trick: your recipient MUST know that you are using uuencode and decode your 7bit garbage back to a readable 8bit text with uudecode. It means that you are not able to write to an unknown person, to someone who does not have any idea about this business (like a secretary, for example), to someone who doesn't have these two utilities, to a Newsgroups, etc. The circle of your recipients narrows down to a couple of people who know what you are doing and willing to communicate with you in this fashion.

Example 5. (UUENCODE and UUDECODE)

roller:/home/teacher/stud2/--> ls
Mail News mail public_html testdir
roller:/home/teacher/stud2/--> ls > testuu
roller:/home/teacher/stud2/--> uuencode testuu codingfile > test.coding
roller:/home/teacher/stud2/--> cat test.coding
begin 644 codingfile
J36%I; L97=S"FUA:6P*<5B;&EC7VAT;6P*-&5S=&11<<@IT97-T=74*
end
roller:/home/teacher/stud2/--> uudecode test.coding

2.3 UNIX ELECTRONIC MAIL PROGRAM "PINE" (COMMAND PINE)

PINE(TM) is the University of Washington's "Program for Internet News and E-mail". It is intended to be an easy-to-use program for sending, receiving, and filing Internet electronic mail messages and bulletin board (Netnews) messages. Pine supports the following Internet protocols and specifications:

SMTP - Simple Mail Transport Protocol
NNTP - Network News Transport Protocol
MIME - Multipurpose Internet Mail Extensions
IMAP - Internet Message Access Protocol
MIME allows you to attach any kind of file to your message, provided that your recipient also has MIME-capable mail software (which is readily available for most types of computers, although some proprietary mail systems do not yet support MIME).

IMAP allows access to mailboxes on remote mail servers as if they were local.

Although originally designed for novice E-mail users, Pine has evolved to support many advanced features. There are an ever-growing number of configuration and personal-preference options, though which of them are available to you is determined by your local system managers. Pine files and documentation are available via FTP or WWW: ftp://ftp.cac.washington.edu/pine [7], http://www.cac.washington.edu/pine [8]

Example 6:
roller:/home/teacher/stud2/->pine

At any level within Pine, menu commands (and others, including "compose mail") are displayed on the bottom two lines of your screen.

2.3.1 General Pine Commands

MAIN MENU Screen Commands

<table>
<thead>
<tr>
<th>Key</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>?</td>
<td>Show help text</td>
<td>Show all Other available commands</td>
</tr>
<tr>
<td>C</td>
<td>Compose a message</td>
<td>Select Previous command up on menu</td>
</tr>
<tr>
<td>I</td>
<td>FOLDER INDEX screen</td>
<td>Select Next command down on menu</td>
</tr>
<tr>
<td>L</td>
<td>FOLDER LIST screen</td>
<td>Display Pine Release Notes</td>
</tr>
<tr>
<td>A</td>
<td>ADDRESS BOOK screen</td>
<td>Lock Keyboard</td>
</tr>
<tr>
<td>S</td>
<td>SETUP functions</td>
<td>Goto a specified folder</td>
</tr>
<tr>
<td>Q</td>
<td>Quit Pine</td>
<td></td>
</tr>
</tbody>
</table>

2.3.2 Message Header Commands

CURSOR MOTION KEYS

<table>
<thead>
<tr>
<th>Key</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>^B</td>
<td>Left Arrow</td>
</tr>
<tr>
<td>^F</td>
<td>Right Arrow</td>
</tr>
<tr>
<td>^P</td>
<td>Up Arrow</td>
</tr>
<tr>
<td>^N</td>
<td>Down Arrow</td>
</tr>
<tr>
<td>^A</td>
<td>Beginning of line</td>
</tr>
<tr>
<td>^E</td>
<td>End of line</td>
</tr>
<tr>
<td>^Y</td>
<td>Previous page</td>
</tr>
<tr>
<td>^V</td>
<td>Next page</td>
</tr>
<tr>
<td>^@</td>
<td>(Ctrl-SPACE)</td>
</tr>
</tbody>
</table>

EDITING KEYS

<table>
<thead>
<tr>
<th>Key</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>^D</td>
<td>Delete current character</td>
</tr>
<tr>
<td>^H (DEL)</td>
<td>Delete previous character</td>
</tr>
<tr>
<td>^K</td>
<td>Cut marked text or delete current line</td>
</tr>
<tr>
<td>^U</td>
<td>Undelete line(s)</td>
</tr>
</tbody>
</table>

MESSAGE COMMANDS

<table>
<thead>
<tr>
<th>Key</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>^C</td>
<td>Cancel</td>
</tr>
<tr>
<td>^O</td>
<td>Postpone</td>
</tr>
<tr>
<td>^X</td>
<td>Send</td>
</tr>
</tbody>
</table>

GENERAL COMMANDS

<table>
<thead>
<tr>
<th>Key</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>^G</td>
<td>Get help</td>
</tr>
<tr>
<td>^Z</td>
<td>Suspend</td>
</tr>
</tbody>
</table>

SCREEN COMMANDS

<table>
<thead>
<tr>
<th>Key</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>^T</td>
<td>To Addressbook/Browser</td>
</tr>
<tr>
<td>^J</td>
<td>Attach File</td>
</tr>
<tr>
<td>^L</td>
<td>Redraw Screen</td>
</tr>
<tr>
<td>^R</td>
<td>Rich Headers</td>
</tr>
</tbody>
</table>

2.3.3 Folder Index Commands

Navigating the List of Messages

<table>
<thead>
<tr>
<th>Key</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Move to the previous message</td>
</tr>
<tr>
<td>N</td>
<td>Move to the next message</td>
</tr>
</tbody>
</table>

Operations on the Current Message

<table>
<thead>
<tr>
<th>Key</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>View</td>
</tr>
<tr>
<td>R</td>
<td>Reply to message</td>
</tr>
<tr>
<td>Y</td>
<td>Print</td>
</tr>
<tr>
<td>F</td>
<td>Forward</td>
</tr>
</tbody>
</table>

Page 13
Show previous screen of messages
Spc  Show next screen of messages
J  Jump to a specific message
W  Whereis -- search for a
    specific message
|  Pipe to a UNIX Command

D  Mark for deletion  *  Flag
U  Undelete (remove deletion mark)
T  Take Address into Address Book
S  Save into an E-mail folder
E  Export as a plain text file
B  Bounce

Miscellaneous Operations
G  Goto a specified folder
S  Sort order of index
H  Full header mode
X  Expunge/Exclude
Z  Zoom
Tab  Next-New

General Pine Commands
O  Show all other available commands
?  Show Help text
MAIN MENU Screen
Q  Quit Pine
FOLDER LIST screen

C  Compose a new message

2.4 Off-line Electronic Mail Readers for UNIX

An off-line mail reader which can access mail from a UNIX shell account is available for Windows, called RFD Mail. For details on availability, send an E-mail message to yon@world.std.com. This software facilitates ease of use and saves on connect time. It is available with ready-made scripts for logging into CompuServe, Genie, and MCI Mail. Further scripts will effortlessly add more services in future.

Another excellent option exists for the Macintosh (now available for PC users as well), called Eudora, available from Qualcomm. If you have access to a UNIX shell account and have a system administrator willing to install a simple piece of UNIX software called a POP server, you can use Eudora. It will work off a plain UNIX shell account, or on a SLIP or PPP account as well. However, on the Mac version as a safety precaution against possible loss or corruption of mail during transfer, we recommend that the option "Leave mail on server" be checked under the "switches" option, located under the "special" for Eudora. This caution is not needed for using Eudora in SLIP or PPP accounts.

2.5 Some Things to Consider When Using Electronic Mail

Provide your audience with adequate context:
Quote the E-mail to which you are responding;
Avoid pronouns;
Be aware of page layout issues. Try to use:
• Short paragraphs;
• Lines under seventy-five characters;
• E-mail under twenty-five lines;

Additional information about the Internet and E-mail can be found at the Uniform Resource Locator (you will learn about URLs later in the session): http://www.nova.edu/Inter-Links/E-mail/E-mail.html[6].
3. MAILING LISTS

3.1 WHAT IS LISTSERV

LISTSERV is a distribution list management package. LISTSERV servers maintain lists containing names and electronic mail addresses of computer users. Any member of a list can send electronic mail messages addressed to the list, which the server will forward to all other members of the list.

LISTSERV will ignore the Subject: line of the mail header, so your commands must be in the body of the message. Several commands can be sent to LISTSERV in the same mail message, with each command on a separate line.

If you wanted to join the 3D-L mailing list that discusses 3D computer graphics, but are not sure of the address of the LISTSERV server hosting this list, you could send a subscription request to either of the following addresses: LISTSERV@LISTSERV.NET or LISTSERV@LISTSERV(on BITNET).

More than 250 sites in over 30 countries throughout the world run LISTSERV; here are some of the LISTSERV sites:

Host Computer Site Country:
EARNCC EARN Office, Paris France
DEARN GMD, Bonn Germany
HEARN Katholieke Universiteit Nijmegen Netherlands
SEARN Kungliga Tekniska Högskolan, Stockholm Sweden
BITNIC BITNET Network Information Center USA
PUCC Princeton University, New Jersey USA

3.2 USING LISTSERV

LISTSERV provides special commands for list managers, who are given special privileges in order to use them. The commands described here are available for everyone and require no special LISTSERV command privileges. Only the most common commands are included here; a complete list of non-privileged LISTSERV commands is given in the LISTSERV User Guide in the DOC FILELIST from LISTSERV@EARNCC.EARN.NET[46] (or LISTSERV@EARNCC.BITNET).

In the following descriptions, CAPITAL letters indicate acceptable abbreviation, angle brackets (<>) indicate an optional parameter, and vertical bar (| ) indicates a choice of parameters. All parameters are fully explained in each command description.

3.3 LISTSERV COMMANDS

SUBscribe list-name <full-name> - To join a mailing list, or to alter the name (but not E-mail address). The optional full-name allows you to give a name by which you want to be known on a mailing list.

UNSubscribe list-name | |<|<NETWIDE>| | - To leave a mailing list. The list-name parameter is the name (not the address) of a mailing list from which you want to remove your subscription.

List <options> <-F= format> - To get a listing of available mailing lists at a LISTSERV server.

Short This is the default; it displays a summary of all the lists managed by a LISTSERV in a brief.
Long The Long (or Detailed) option will send you a file called node-name LISTS.

Global <pattern> This option gives a complete list of all known LISTSERV mailing lists at all
servers at the time the command is issued. The optional pattern parameter can be used to
match any string in the list name, list title or list address.

REView list-name <> <options> - To receive information about a mailing list, including list control
information and a list of subscribers.

Short This option restricts the information you receive to the control section of a list.

Countries The list of members will be organized by the nationality taken from their E-mail addresses.

Query list-name | * | Can be used to review your personal list options. The list-name parameter is the
name of a list to which you are subscribed. If you use an "*" (asterisk) character, you will
receive information about your personal options for all lists to which you belong at the
LISTSERV to which you send the command.

INdex <filelist> <F= format> - To get a listing of the files in a particular filelist. The filelist
parameter can be used to specify a particular filelist; if no name is specified, an index of
the root filelist will be sent to you.

GETfilename filetype <filelist> <F= format> - To retrieve a specific file or package from a filelist.

ADD new-password - Add a new personal password on the LISTSERV.

CHANGE old-password new-password - Change your personal password on a LISTSERV server.

DELETE old-password - Remove your personal password from a LISTSERV.

DATABASE LIST - To perform a database search.

Help - To get a brief description of the most commonly used LISTSERV commands.

Info <topic> <F= format> - To get a help file from a LISTSERV server.

Examples

You wish to subscribe to the EARNEWS list at the node FRMOP11. Your full name is Mark P.
Waugh. Send the following command to LISTSERV@FRMOP11.CNUSC.FR (or
LISTSERV@FRMOP11.BITNET):

Example 7:

roller:/home/teacher/stud2/-mail LISTSERV@FRMOP11.CNUSC.FR
SUBSCRIBE EARNEWS Mark P. Waugh

You wish to leave the INFO-MAC mailing list (to which you have already subscribed) at the
node CEARN. The command:

Example 8:

roller:/home/teacher/stud2/-mail LISTSERV@FRMOP11.CNUSC.FR
UNSUBSCRIBE INFO-MAC

You wish to receive a listing of all mailing lists that have the text Europe in their name or title.
Send the following command to your nearest (or any) LISTSERV server:

Example 9:

roller:/home/teacher/stud2/-mail LISTSERV@FRMOP11.CNUSC.FR
LIST GLOBAL EUROPE

You want to stop receiving mail from all the lists at CEARN to which you belong. Send the
following command to the LISTSERV server at CEARN:

Example 10:

roller:/home/teacher/stud2/-mail LISTSERV@SEARN.SUNET.SE
SET * NOMAIL

You have received a message from the LISTSERV server at SERN asking you to confirm your
subscription to the EARN-UG list. Send the following command to that server:
Example 11:
roller:/home/teacher/stud2/->mail LISTSERV@SEARN.SUNET.SE
CONFIRM SERN

You wish to retrieve the file PCPROG.ZIP from a filelist, in XXE file format. Send the following command to the LISTSERV server that holds this file:
Example 12:
roller:/home/teacher/stud2/->mail LISTSERV@SEARN.SUNET.SE
GET PCPROG ZIP F=XXE

Detailed documentation on LISTSERV (and related services) is available from the DOC FILELIST at LISTSERV@EARNCC.EARN.NET (or LISTSERV@EARNCC.BITNET). This includes the LISTSERV User Guide which is available in both postscript and plain text formats. To obtain a list of available documents use the INDX command.

A few points to remember when sending the "sign-up" message:
* Do not send messages to the machine/host with a signature file.
* Do Not send a message to the actual mailing list, i.e. INT-LAW@UMINN1.BITNET
* Remember to keep the "Welcome" message. This will give you additional information about the list and additional Listserv commands. For Example the command for unsubscribing to such lists is "unsub" [listname].

3.4 LISTSERV

Listproc (from UNIX ListProcessor) uses very similar commands to Listserv. To subscribe send an E-mail message "sub" to the listserv@[host] or listproc@[host]. The listproc program is not consistent in its use of the term "listserv" or "listproc", so some trial and error it necessary to send the appropriate command. Many listproc hosts are still configured with the name "listserv," and will accept commands addressed to "listserv@[host]" as well as to the correct name, "listproc@[host]."
4. USENET

The thousands of Usenet Newsgroups are electronic forums for discussion, debate, questions, information, talk, and even for the distribution of software, images, sounds, and other information. The newsgroups are distributed via network news feed to computer sites all over the world. Each computer site accumulates the articles and redistributes them to its own users. Using newsreader software, you can read the articles posted to the Usenet newsgroups, reply to articles, post new articles, save articles on your personal computer, or forward articles via E-mail to interested friends and colleagues.

Newsgroups are also used to distribute software, sounds, images, and other binary files. Software, images and other binary files are usually uuencoded and broken into several parts which the reader needs to reassemble using special UNIX, Mac, DOS, or other platform specific software.

All newsreaders allow you to:
1. Select the newsgroup you want to browse;
2. Give you a list of articles in that newsgroup;
3. Allow you to read an article, and save it or reply to it, if you wish;
4. Allow you to view a list of all available newsgroups, or to subscribe to only those newsgroups that you are interested in.

4.1 USENET NEWS READERS

UNIX: nn or tin (rtin), pine
Windows: WinVN, Free Agent
Macintosh: Nuntius or Newswatcher

4.1.1 Rtin

Now we can work with such newsservers in Kiev free:
mitter.ukma.kiev.ua UKMA's newsserver;
news.freenet.kiev.ua freenet's newsserver;
news.isf.kiev.ua Open Society newsserver.

Example 13: (configuring computer to news server “mitter”)
rroll: /home/teacher/stud2/->setenv NNTPSERVER mitter.ukma.kiev.ua

When you enter the rtin news reader, you get a listing of the newsgroups to which you are subscribed:
Example 14: (download rtin)
rroll: /home/teacher/stud2/->rtin
Group Selection (15816) h=help

1 3453 news.announce.conferences Cal
0
9 1135 wstd.help Hef
->10 3740 misc.education.language.english Tea

<n>=set current to n, TAB=next unread, /=search pattern, c)atchup,
g)oto, j=line down, k=line up, h)elp, m)ove, q)uit, r=toggle all/unread,
s)ubscribe, S)ub pattern, u)nsubscribe, U)nsub pattern, y)ank in/out
In `rtin`, you select a newsgroup by using the arrow keys to move the \( \rightarrow \) sign (or ‘j’ and ‘k’ keys) alongside the newsgroup you are interested in and press RETURN to select it.

When you select a group, you get a listing of the articles:

**Example 15:** (for `misc.education.language.english`)

misc.education.language.english (87T 125A 0K 0H R) h=help
1 + 2 donne course d’anglais, Paris Julian Richardson
2 + 33 Reading should be taught BEFORE CONCEPTION to MLevMD
-\( \rightarrow \) 3 - 4 Announcement: English for Business courses Rex Knepp

`rtin` is a threaded news reader: replies to a posting are grouped together with the original posting, so that the reader can follow a thread of discussion. The list above shows the threads, the number of replies in each thread, the subject and the author. The plus sign (+) indicates that not all postings in the thread have been read. Other news readers show these details.

Articles can be saved as file in your home directory, mailed to another person or downloaded directly. To quite type "Q". A list of basic commands is available within "rtin" when you type "h".

**Example 16:** (for search newsgroup press ‘/’-key and type part of the searching text string)

Search forwards [ ] > lang

601 3740 misc.education.language.english Tea
602 14561 misc.emerg-services For
603 77378 misc.entrepreneurs Dis

For unsubscribe all newsgroup you can use texteditor `vi` and special file `.newsrc` (you must replace all symbol "." by "!"):

**Example 17:**

roller:/home/teacher/stud2/->vi .newsrc

0
`:%s//!/g
ZZ
roller:/home/teacher/stud2/->

* Please note that not all news servers may not carry all newsgroups.

* Not all Usenet News servers (machines that you access to read) The Internet provides thousands of discussion groups via E-mail by allowing users to place themselves on electronic mailing lists. Mailing lists are managed by different types of programs, the primary programs used are "listserv" and "listproc". An excellent review of UNIX newsreaders is contained in the book [3].

### 4.1.2 Main `rtin` Group Selection Commands

| y | Yank in subscribed/unsubscribed from | M | Menu of configurable options
|---|-------------------------------------|---|-------------------------------|
| .newsrc | Choose a new group by name | I | Toggle inverse video
| g | Toggle display of groupname or groupname | \( ^D^U \) | Down (\( ^U=\)up) a page
| d | Move current group within group selection | \( ^F^B \) | Down (\( ^B=\)up) a page
| m | List | \( ^R \) | Reset .newsrc
| N | Goto next group with unread news | | Redraw page
| <CR> | Read current group | \( ^L \) | List articles posted by user
| n<TAB> | Goto next group with unread news and enter it | W | | Mark current group as unread
| Y | Yank in active file to see any new news | z | Shell escape
| */? | Group forward (=*/backward) search | ! | Post an article to current group
| ^KZ | Delete (Z=undelete) group from .newsrc | w | |
4.1.3 Main Index Page Commands

K     Kill / Auto select (hot) current article
<TAB> Goto next unread article or group
x     Crosspost current article to another group
b<SPACE> Back (<SPACE>=forward) a page
?     Subject forward (?=backward) search
u     Toggle display of unthreaded & threaded articles
K     Mark article/thread as read & goto next unread
r     Toggle display to show all / only unread articles
s     Save article/thread/hot/pattern/tagged articles to file
X     Mark all unread articles that have not been selected as read
m     Mail article/thread/hot/pattern/tagged articles to someone

4.2 INTERNET "NETIQUETTE"

Like any other community, the Internet has rules of etiquette called "netiquette". Here are some simple rules to follow when sending an E-mail messages and usenet news messages:

- Never say anything in an E-mail message (or a news posting) that you wouldn't say to the recipients face or that you wouldn't say in a long-distance phone.
- Be careful when E-mailing sensitive or confidential material. Sending E-mail is much like sending a post card through the postal service. It can be read by other people.
- Word your messages carefully. Since people cannot see you, they cannot judge the context of your sentence by your body language or voice. It is important to write exactly what you mean.
- Do not expect the message to be delivered immediately. Until the recipient accesses E-mail, your message will remain unread. The recipient may not respond immediately either, so be patient.
- Read the Frequently Asked Questions (FAQ) list. Most newsgroup FAQs (if available) for a specific newsgroup can be obtained via ftp rtfm.mit.edu[10] (see FTP section)

Other Common Courtesies:

Keep your signature file smaller than your text. Generally, signature files should be no more than 6-8 lines. On the mail/news server you are restricted to a maximum of four lines.

When replying to a message, only include as much of the previous senders message as is needed to explain to what your reply refers.

Be careful to reply only to those people to whom you intend to reply.

Don't cross post to every newsgroup on the net. Make certain that news you wish to post goes to the most appropriate group and not every group you think may have an interest in that piece of news.

Be careful when posting follow-up articles to not carelessly attribute something to the wrong person.
5. **TELNET (REMOTE LOGIN)**

Telnet, or remote login, allows you to connect through the Internet to use computers in remote locations; the most commonly used example is to search on-line library catalogs or other databases. The complexity arises in finding out what computer systems are available, and to a lesser extent, in learning the commands that each remote system uses. The **Harvard** library catalog may use a completely different set of search commands than the **Yale** catalog, the **Oxford** catalog, or the **University of Wisconsin** catalog.

5.1 **TELNET INTERFACES:**

Windows: WinQVT, Microsoft Telnet  
Macintosh: NCSA Telnet  
**UNIX Command:** telnet. UNIX telnet itself is a fairly simple, type "telnet" followed by the Internet address of the computer system you wish to access.

5.2 **TELNET SESSION**

**Example 18:** (forsythetn.stanford.edu [12])
roller:/home/teacher/stud2/-> telnet forsythetn.stanford.edu
Account? socrates
OK to proceed? YES
Type of terminal? VT100

```
0
```

**YOUR RESPONSE:** find

**Socrates / Search:** Find TP LANGUAGE
Result limited to first 1000 headings (try BROWSE to see more headings)

1) Title: Language (8 Books, 6 Serials, 1 Film)

```
0
```

5) Title: Language A Science of Human Behavior (1 Book)

**YOUR RESPONSE:**

After you have initiated a telnet session you must use commands issued by the machine you have accessed. Most of these machines should have help files to assist you.

**Example 19:** (date and time)
roller:/home/teacher/stud2/->telnet india.colorado.edu 13
Connected to india.colorado.edu.
Escape character is "^]".
50388 96-11-01 18:38:09 00 0 0 50.0 UTC(NIST) *
Connection closed by foreign host.
roller:/home/teacher/stud2/->

**Example 20:** Harvard Library
roller:/home/teacher/stud2/->telnet ihollis.harvard.edu
Login:ihollis
**COMMAND?** HU
**COMMAND?** TI environment
For more information about article type Number and press enter.
6. FIND FILES, DOCUMENTS AND INFORMATION

6.1 FILE TRANSFER PROTOCOL (FTP)

File Transfer Protocol is the method by which files are moved between computers on the Internet. There are two kinds of FTP: anonymous FTP by which anyone can transfer files from publicly available portions of over 1500 computers on the Internet to their personal computer or computer account, and full service FTP by which you can transfer files between any two computers on the Internet on which you have passwords or access privileges.

6.1.1 Graphic Interfaces for FTP

Windows: WS_FTP
Macintosh: Fetch
UNIX Command: ftp

* Note that in Graphic Interfaces for FTP, you do not have to use the FTP command language, but are instead can use the Macintosh and Windows simple point and click environment. Yet another way of using FTP is to use a communications/terminal emulation program to transfer files to the computer you are using.

To see the FTP commands and for brief help, type help or ?. Personal computers may use a variety of programs to begin the FTP process, but once connected to the remote computer you are under the remote computer's control and using its FTP program, no matter which computer you used to begin the FTP process.

FTP Directory Structure:

Most FTP hosts are organized in the same way as DOS directories or Macintosh folders: in a hierarchical file system with directories, subdirectories, and files. Directory paths are usually cited as directory/subdirectory/subsubdirectory/file.

The following commands are sufficient in most circumstances:

`lcd` local change of directory (to send data to a specific directory)
`open "some.FTP.host.name"` access the named FTP host (for Example: microlib.cc.utexas.edu)
`dir` display the contents of a directory
`cd` change directory
`cd ..` change directory up one level (for UNIX hosts)
`cd [-]` change directory up one level (for VMS hosts)
`ascii` prepare FTP for text-only transfer
`binary` prepare FTP for a binary file transfer
`get [filename]` copy a file from the FTP host to your computer
`close` close connection to remote host, but leave FTP open
`quit or bye` end your FTP session
`help` list FTP commands
`user` identify yourself to the host (login name)

Example 21: ftp.nevada.edu[15]

roller:/home/teacher/stud2/~ > ftp ftp.nevada.edu
login: anonymous
Password: stud2@roller.ukma.kiev.ua
for exit type quit
Example 22: (UN Ukrainian Office [56])
roller:/home/teacher/stud2/ -> ftp ftp.freenet.kiev.ua
login:anonymous
Password: stud2@roller.ukma.kiev.ua
for exit type quit
Example 23: (Open Society [57])
roller:/home/teacher/stud2/ -> ftp ftp.isf.kiev.ua
login:anonymous
Password: stud2@roller.ukma.kiev.ua
for exit type quit

6.1.2 File Types

When downloading files, it is also necessary to know about various file types.

1. **Transfer type ascii or binary?** When using FTP you have to set the transfer type to be binary (programs, graphics) or ascii (plain text). You do this by giving the command ascii (-a) or binary (-b).

2. **Compressed files:** Many computer files are compressed, that is, they are made smaller using special compression programs so that they take up less storage space on the computer. These files can also be transferred around the Internet faster. The Windows program "WinZip" and the Macintosh program, "Stuffit Expander" are useful for decompressing programs. Although these programs may not be able to decompress all compression types.

3. **Archived Files groups:** When several files logically belong together, they will often be bundled together and stored as one archived file. The archived file is given one name which makes it easy to FTP. After you have FTP'd the file and have it on your computer, you must de-archive it or unpack it. Like compressed files, archived files usually have a file extension or ending by which you can recognize them. A common archived file extension is .tar which can be unpacked by using the UNIX program tar.

Notes:

* **Case.** Most anonymous FTP hosts are running UNIX operating systems. UNIX is case sensitive. Most UNIX commands are in lowercase. If an FTP file name includes upper and lowercase letters, or strange symbols and underlining, then that is what you have to type, exactly as shown, in order to transfer the file.

* **"Readme".** Anonymous FTP hosts contain huge amounts of material. There are three types of files on these hosts that can help you find your way: README files, INDEX files, and ls-newsgroup files. README files contain useful descriptions and guidance as to what is in the directories and subdirectories. INDEX files list the names of files contained in the FTP host directory, sometimes with very brief descriptions of the files.

6.1.3 Common File Compression Programs

Many files on FTP archives and other computers are in a text-only format which can be copied directly to your computer and displayed with a text editor without any special processing. You will, however, inevitably encounter computer files which are stored in special formats, and need to be processed in particular ways if you want to be able to use them. WinZip can handle many different compression types for Windows, as can Stuffit for the Macintosh platform.

For More Information: Consult the Usenet newsgroup comp.compression. The three part comp.compression FAQ document lists hundreds of compression programs and gives you anonymous ftp host and directory information so you can acquire the programs for your computer.
6.1.4 Searching for FTP Files

There are several ways to locate FTP files on the Internet. If you know the name of the files you are looking for or can guess at a likely filename for what you want, you can use an Internet tool called Archie. The various Archie host computers search all available FTP files and creates a database of what they find; you can then search one of the Archie databases with word strings and find out which computer has files that match your word string. Many people find anonymous FTP files by joining a listserv discussion group or reading Usenet newsgroups that cover topics that they are interested in. Many useful FTP files are also available on Gopher and the World Wide Web (which will be discussed later in this session). A long list of anonymous FTP sites is regularly posted to the USENET newsgroup news.newusers.questions.

6.1.5 FTP Etiquette

When you are using FTP, you are using another institution's computer. Heavy FTP use can degrade the performance of a host computer. Remember the host computer site is allowing you to use their facilities because they believe in the free flow of information. They do not receive any money from your use. Keep your FTP session short. It is best to avoid FTPing to a host computer between 8am and 5pm their time. Many files are located on several computers, try to choose a computer site that is not in the middle of their working day. Do not use FTP sites outside of Ukraine or Europe (for Ukrainian users) if it can be avoided. Many anonymous FTP sites prefer you to use Gopher to transfer files rather than FTP. Gopher is less of a load on the host machine, since Gopher does not maintain a connection to a host like FTP. Gopher connects only when you are displaying a new menu or transferring a file.

6.2 ABOUT ARCHIE

Archie is a program that maintains a catalog of the world's anonymous FTP archives. Archie contains information on millions of different computer files.
Archie can assist you in finding:
1. If there is a file or directory with a certain name or a certain set of characters. [name search]
2. What files exist on topic X. [file description search]
3. What FTP hosts are monitored by Archie, where they are located, and what files they contain. [site search]. This type of search requires a great deal of server time and its use is not recommended.

6.2.1 Using Archie

You can access and use Archie several different ways. You can install an Archie client program on your desktop Macintosh, Windows, Next, X-Windows or other machine, you can use the Archie client on UNIX or VMS machines, you can use Archie via Gopher or the World Wide Web and you can telnet directly to an Archie server at the following sites: archie.rutgers.edu, archie.unl.edu, archie.ans.net, archie.internic.net, or archie.sura.net[16] and login as Archie, or use Archie by sending an E-mail request to a remote Archie server.

Name Searches: This type of search constitutes 99% of all Archie searches. In this type of search you would enter the name of the file or program you were looking for and Archie would tell you where it was located.

File Description Searches: In this search, you search a specific Archie database that contains descriptions of programs called the "Public Domain Software Description Database." Since many file names do not accurately reflect the contents of the file, this database allows you to search descriptions
of files in hopes of finding the filename you want. Only a small fraction of FTP files have descriptions in this database and for that reason it is not frequently used.

Site Searches: Archie allows you to get information about particular hosts it monitors. You can even search for hosts based on part of Internet address, so you could for example, search for hosts from a particular country.

6.2.2 Archie Commands

Name Search Commands: If you are telnetting to an Archie server, the basic Archie search command is prog. A search Example is: prog rabbit. When you do this though, you are not sure what kind of search you are doing because you will be using the default search method for whatever machine you are connected to. There are four basic search types. To set them you give the command set search followed by one of four options.

- set search exact: Will find only those files that precisely match all of your characters, spacing, your use of upper and lower case, etc.
- set search subcase: Case sensitive substring searches. In this case "prog Pine" would find Pine and Big.Pineapple, but it would not find pineapple.cake or little.pine.
- set search sub: Case insensitive substring searches. The broadest type of search.
- set search regex: Searches are done with regular expressions, similar to the UNIX use of regex.

When using the Archie client on a UNIX or VMS machine, follow the syntax below.

Usage: archie [-cers][L][t][m#][h host][L][N#] string

- c: case sensitive substring search
- e: exact string match (default)
- r: regular expression search
- s: case insensitive substring search
- t: list one match per line
- -m#: specifies maximum number of hits to return (default 95)
- -h host: specifies server host
- -L: list known servers and current default
- -N#: specifies query niceness (priority) level (0-35765). The smaller the number, the higher priority. Please do not abuse this command.

Example 24:
roller:/home/teacher/stud2/-> archie -s -m10 -h archie.rutgers.edu -N500 rabbit

Can be interpreted as: tell the Archie client that I want to do a search and set the search to sub (ignore case), I want only a maximum of ten hits returned to me, and I want to use the Archie host at Rutgers. The search you get back will look like this:

Host knot.queensu.ca
Location:/wuarchive/multimedia/images/gif/j

FILE -rw-rw-r-- 54784 Nov 1 1989 rogerrabbit
Host sparc01.cc.ncsu.edu
Location:/mirrors/wustl/graphics/gif/j

FILE -rw-rw-r-- 54784 Nov 1 1989 rogerrabbit

File Description Search Commands: Type whatis followed by any word. Example: whatis disklibrarian. What you get is a list of filenames and brief descriptions. You then need to do a name
search using prog and the name of the file you are interested in, in order to locate which anonymous
FTP site has the file.

**Partial list of archie servers throughout the world:**

<table>
<thead>
<tr>
<th>Server Name</th>
<th>Server Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>archie.internic.net[18]</td>
<td>archie.unl.net</td>
</tr>
<tr>
<td>archie.rutgers.edu</td>
<td>archie.uqam.ca</td>
</tr>
<tr>
<td>archie.sura.net</td>
<td>archie.ac.il</td>
</tr>
<tr>
<td>archie.ans.net</td>
<td>archie.au</td>
</tr>
<tr>
<td>archie.th-darmstadt.de</td>
<td>archie.nz</td>
</tr>
<tr>
<td>archie.unipi.it</td>
<td>archie.funet.fi</td>
</tr>
<tr>
<td>archie.edvz.uni-linz.ac.at</td>
<td>archie.kuis.kyoto-u.ac.jp</td>
</tr>
<tr>
<td>archie.doc.ic.ac.uk</td>
<td>archie.luth.se</td>
</tr>
<tr>
<td>archie.rc.ac.uk</td>
<td>archie.ncu.edu.tw</td>
</tr>
<tr>
<td>archie.rediris.es</td>
<td>archie.sogang.ac.kr</td>
</tr>
<tr>
<td>archie.univie.ac.at</td>
<td>archie.switch.ch</td>
</tr>
<tr>
<td>archie.wide.ad.jp</td>
<td></td>
</tr>
</tbody>
</table>

### 6.2.3 Archie Graphic Interfaces

- **Windows:** archie (ftp sites: ftp.uwp.edu[20] and ftp.uga.edu[21])
- **Macintosh:** Anarchy (ftp site: microlib.cc.utexas.edu[28])

### 6.3 Gopher

Gopher is a menu-based, hierarchical system for organizing and retrieving networked
information regardless of where the information is stored. An Internet user, by connecting to any
Gopher server, has almost instantaneous access to any other Gopher and the information stored therein.
Many Gophers are "campus-wide information systems," containing material like course listings,
faculty/staff/student directories, local events calendars, and so on. Most also include general interest
material ranging from weather forecasts and song lyrics to scholarly articles. Gopher makes it easy to
retrieve information by having documents E-mailed directly to you.

**Gopher Interfaces:**

- **Windows:** wgopher
- **Macintosh:** TurboGopher

**UNIX Command:** gopher [Followed by the site name]

Gopher also allows you to create your own customized menu of items of interest to you by
using bookmarks. The command to "set" or "add" a bookmark is "a". To view books, type, "v". If you
need to delete a bookmark, select or highlight the entry to be deleted and press "d". (Specific
"bookmarking" commands may differ depending on the type of system you use. Contact your system
administrator for the correct command.)

**Example 25:** (connect to gopher system using lynx browser) [13]

```
roller:/home/teacher/stud2/~>lynx gopher://info.umd.edu
Gopher Menu
(DIR) Using This System and Important Notices
  o
(DIR) Electronic News and Weather
(?) Search titles in InforM
Searching "Gopherspace"
```

### 6.3.1 Veronica

Veronica offers a keyword search of 99% of the Gopher menu titles throughout worldwide
Gopher sites, also known as "gopherspace". After entering your keywords, Veronica returns a list of
Gopher menu items that match your search. By selecting an item from this list, you will be
automatically connected to the source you choose. Veronica is used from within Gopher so you don't have to learn another set of commands or a new interface. The list Veronica returns from your search is essentially an automatically generated Gopher menu, customized to your search keyword specifications.

**Search Commands:** You can enter a single keyword or use multiple words connected with "and", "or" or "not". If your search includes two or more words "and" is the assumed connector. Parentheses can be used for complicated searches. The asterisk "*" can be used as an end of word truncation symbol, for Example: bird* would retrieve bird, birds, and birdying. Exact word strings can be searched if put in double quotes, for Example: imovie reviews".

**Example 26:**

```
 roller:/home/teacher/stud2/->lynx gopher://info.umd.edu[14]
 GORPER MENU
 (DIR) Using This System and Important Notices
  0
 (DIR) Electronic News and Weather
 (?) Search titles in InforM
 Searching "Gopherspace"
 -->13. Search titles in InforM <?
 Search titles in InforM: leg
 Result:
 GORPER MENU
 (FILE) Fins-Iledu-Leg
  0
 (HTML) leg_auth.html
 Select (FILE) Fins-Iledu-Leg
 Result:
 Fins-Iledu-Leg (p1 of 27)
  0
 (CROSS REFERENCE BILLS EXIST)
 Public Law 103-227(03/31/94)
```

### 6.3.2 Jughead

Jughead is a gopher tool which can be used to search files of just one gopher machine. This tool is not provided on all gopher accessible machines. Use it when it is available -- Jughead can reduce your search time.

### 6.4 WAIS

WAIS: WAIS stands for *Wide Area Information Server*. It is a program that allows you to search for keywords in specific pre-indexed databases. It then retrieves full text information from whichever databases that you have chosen. The retrieved data is ranked according to how relevant it is to your search words. These databases are located on a variety of different remote computers. WAIS databases can also be accessed via Gopher or World Wide Web. For more information about WAIS and WAIS interface software, see: [http://www.essex.ac.uk/wais.html](http://www.essex.ac.uk/wais.html)[45]

**Example 27:**

```
 roller:/home/teacher/stud2/-> telnet wais.internic.net

 o
 UNIX(r) System V Release 4.0 (ds1)
 login: wais
```
TERM = (unknown) vt100
001: conf.announce Free
009: INFO Free

Keywords:
<arrows> move, <space> selects, v view info, w search keywords, x exits
For searching of the articles about languages in such database: conf.announce, netpolicy, people, resources

# Database Cost
* 001:conf.announce Free
* 018:resources Free

Keywords: language

The result:

001:[1000] (people) Curtis, A. Kirby (AKC2) kirby@NL
002:[1000] (resources) salminter.b /ftp/resources/education/ 17

Enter keywords with spaces between them; <return> to search; ^C to cancel
You can see the articles using keys:
j - down, k - up, q - quit, enter - view.

For a full listing of WAIS databases, see the Bodleian Access to Remote Databases:
http://www.rl.ox.ac.uk/bardhtml/wais.html[19]

SELECT: Subject list of WAIS databases

ALL WAIS DATABASES SORTED BY ASCII ALL WAIS DATABASES SORTED BY
ASCII

* Applied sciences, Medicine, Technology

* Art, Architecture, Music, Sports

You can use software client "swais" from your host computer, if your host support it.

6.5 WORLD-WIDE WEB

Server, Clients and Protocols on the Net. The key to availability of network resources is the
 provision of servers on computers all over the network. A server consists of special software which
 accepts requests (or queries or commands) and sends a response automatically. Requests received by
 the server may have originated from a user on the same computer as the server software, or from a user
 on a computer on the other side of the world. Many servers accept requests via electronic mail, in
 which case requests can be received from computers which are not even on the same computer network
 as the server. Links have been established between many servers, so that once you have established
 contact with one server, you can easily communicate with other servers as well.

Software programs which ask for resources from servers are called client programs - they are
 clients of the server software. Clients send requests to a server, using a standardized format called a
 protocol. The server responds by supplying information, usually in the form of files containing text or
data of various sorts.

New client software is being developed all the time, providing better and more convenient
 ways of interacting with servers. Different versions of a particular client may be developed for
different desktop computers since these are increasingly more sophisticated, having advanced
graphical, audio and storage capabilities. Thus different versions of a client will be provided for use on IBM PC's, Apple Macintosh, or UNIX computers.

**World-Wide Web** (also called **WWW** or **W3**) is a hypertext-based information system. Any word in a hypertext document can be specified as a pointer to a different hypertext document where more information pertaining to that word can be found. The reader can open the second document by selecting the word (using different methods depending on the interface: in a mouse based system, a user would probably place the mouse over the word and click the mouse button); only the part of the linked document which contains relevant information will be displayed.

The second document may itself contain links to further documents. The reader need not know where the referenced documents are, because they will be obtained and presented as they are needed. World-Wide Web uses hypertext over the Internet: the linked documents may be located at different Internet sites. The World-Wide Web also provides access to many of the other tools described in this guide, and is becoming widely used as the major means of access to Internet resources. Using World Wide Web you can access all the resources available through Gopher, WAIS, tel, the Usenet news groups, or any database available via telnet. The Web provides access both by subject, and by means of protocol such as Gopher or WAIS.

### 6.5.1 What is Hypertext

**Hypertext is text** which is not constrained to be linear. Hypertext is text which contains "*links*" to other texts. The term was coined by "Ted Nelson" around 1965.

**HyperMedia** is a term used for hypertext which is not constrained to be text: it can include graphics, video and "sound", for example. Apparently Ted Nelson was the first to use this term too.

The links in WWW are not confined to text only, so the term hypermedia is more accurate - for example, the link to Ted Nelson might point to a file containing a picture of Ted Nelson. The picture would be displayed on your screen, if your computer had a suitable screen and an image viewer.

### 6.5.2 How to Get to World-Wide Web

Users access the **World-Wide Web** facilities via a client called a browser, which provides transparent access to the WWW servers. If a local **WWW** client is not available on your computer, you may use a client at a remote site: this can be an easy way to start using **WWW**.

### 6.5.3 Local Clients

Use of a local client is encouraged since it will provide better performance and better response time than a remote client. Public domain clients for accessing WWW servers are available for: Macintosh, MS-DOS, VMS, VM/CMS, MVS, NeXT, UNIX, X-Windows. All these platforms support a simple line mode browser. In addition, graphical clients are available for: Macintosh, MS-Windows, X-Windows, NeXT and UNIX.

### 6.5.4 Remote Clients

To access a remote WWW client, telnet to the client site. If you are new to WWW, you should telnet to **info.cern.ch** [47]. No login is needed for this, and you will immediately enter the WWW line mode browser. Most remote clients are at sites with WWW servers holding information on specific areas. Telnet to the client site, and at the login prompt enter **WWW** no password is needed. Some of the publicly accessible clients were locally developed. The following remote client sites are available:
### 6.5.5 Using World-Wide Web

**The line mode browser:**
The line mode browser is a simple user interface: references are shown as a number in square brackets next to each referenced word. Type the number and hit the RETURN key to follow a reference.

**The graphical interface browsers:**
When using a graphical interface, you access the WWW functions by pressing mouse buttons. Words are highlighted or underlined to indicate where a link exists. To follow a link, click on the word.

There are many graphical interface browsers today: Mosaic, Netscape Navigator, Internet Explorer, etc. This browsers can display images in various formats, play sounds and even run Java-programs (Netscape Navigator 3.0 and later). Navigation within the web is intuitive and additional features (mailing feedback, customizing, etc.) are easy to use. This browsers also provides an interface to the other information systems (WAIS, Gopher, etc.) thus giving access to all Internet resources from a single interface.

**Full screen text browsers:**
A good alternative for users without a graphical environment is LYNX.

### 6.5.6 URL’s.

A URL is a Uniform Resource Locator. Think of it as a networked extension of the standard filename concept: not only can you point to a file in a directory, but that file and that directory can exist on any machine on the network, can be served via any of several different methods, and might not even be something as simple as a file: URLs can also point to queries, documents stored deep within databases, the results of a finger or archie command, or whatever. URLs have been used since 1991 as the standard way to cite Internet resources.

**File URLs** Suppose there is a document called "foobar.txt"; it sits on an anonymous ftp server called "ftp.yoyodyne.com" in directory "/pub/files". The URL for this file is then: file://ftp.yoyodyne.com/pub/files/foobar.txt

**Gopher URLs** To visit a particular gopher server (say, the gopher server on gopher.yoyodyne.com), use this URL: gopher://gopher.yoyodyne.com/

**HTTP URLs** HTTP stands for HyperText Transport Protocol (HTTP). HTTP servers are commonly used for serving hypertext documents, as HTTP is an extremely low-overhead protocol that capitalizes on the fact that navigation information can be embedded in such documents directly and thus the protocol itself doesn’t have to support full navigation features like the FTP and Gopher protocols do. A file called "foobar.html" on HTTP server "www.yoyodyne.com" in directory "/pub/files" corresponds to this URL: http://www.yoyodyne.com/pub/files/foobar.html

**Partial URLs** Once you are viewing a document located somewhere on the network (say, the document http://www.yoyodyne.com/pub/afile.html), you can use a partial, or relative, URL to point to another file in the same directory, on the same machine, being served by the same server software. For
Example. If another file exists in that same directory called "anotherfile.html", then anotherfile.html is a valid partial URL at that point.

Telnet URLs To open telnet session to roller.ukma.kiev.ua you can use URL telnet://roller.ukma.kiev.ua

Other URL There are many other types of URLs and when you use Netscape Navigator you can see URL for each link in Location window.

Example 28:
- gopher halcon.dpi.udec.cl - URL for a Chilean gopher main menu [26]
- swais.wais.eff.org:210/comp-acad-freedom - URL for the Electronic Frontier Foundations WAIS files on Academic Freedom [27]
- ftp microlib.cc.utexas.edu - URL for the University of Texas FTP site microlib[28]

6.5.7 Lynx

Lynx is a general-purpose distributed information full screen browser and is part of the World Wide Web project. Lynx was designed to support a Campus Wide Information System (CWIS), but can be used for many other applications. Lynx is using arrows and tab keys, cursor addressing and highlighted or numbered links to navigate within the web. Lynx has no image or sound capabilities: any images or sounds are replaced by a tag at display time and the corresponding files can be retrieved separately. Unlike the line mode browser, documents containing embedded images or enhanced document formats (e.g. formulates) are handled properly by Lynx. It will display HTML documents containing links to files residing on the local system, as well as files residing on remote systems running Gopher, HTTP, FTP, WAIS, and NNTP servers. Lynx can be used to access information on the World Wide Web, or to build information systems intended primarily for local access. Current versions of Lynx run on UNIX and VMS.

Example 29: (browser of the info.cern.ch[47] provided by the W3 coalition)
- roller://home/teacher/stud2/-> telnet info.cern.ch

Example 30: (Lynx of the University of Kansas ukanaix.cc.ukans.edu[24] which requires a vt100 terminal, and in New Jersey Institute of Technology, USA, www.njit.edu[25])
- roller://home/teacher/stud2/-> telnet ukanaix.cc.ukans.edu
- roller://home/teacher/stud2/-> telnet www.njit.edu

Example 31: (University of "Kiev-Mohyla Academy" [29])
- roller://home/teacher/stud2/-> lynx http://www.ukma.kiev.ua

Keystroke Commands for Lynx:

MOVEMENT: Down arrow - Highlight next topic
Up arrow - Highlight previous topic
Return, - Enter Right arrow, - Jump to highlighted topic
- Left arrow - Return to previous topic

SCROLLING: + (or space) - Scroll down to next page
- (or b) - Scroll up to previous page
e - Edit selected file
f - Show a full menu of options for current file
m - Modify the name or location of selected file
r - Remove selected file
t - Tag highlighted file
u - Upload a file into the current directory
a - Add the current link to your bookmark file
c - Send a comment to the document owner
- d - Download the current link
e - Edit the current file
g - Goto a user specified URL or file
i - Show an index of documents
j - Execute a jump operation
k - Show a list of key mappings
m - Return to main screen
0 - Set your options
6.5.8 HTML

HTML (HyperText Markup Language) — the language for designing of hypertext Web pages used in World-Wide-Web. In practical terms, HTML is a collection of platform-independent styles (indicated by markup tags) that define the various components of a World Wide Web document. HTML was invented by Tim Berners-Lee while at CERN, the European Laboratory for Particle Physics in Geneva.

HTML Documents. HTML documents are plain-text (also known as ASCII) files that can be created using any text editor (e.g., Emacs or vi on UNIX machines; BBEdit on a Macintosh; Notepad on a Windows machine). You can also use word-processing software if you remember to save your document as “text only with line breaks.”

HTML Editors. Some WYSIWYG editors are available (e.g., HotMetal, which is available for several platforms or Adobe PageMill for Macintoshes). You may wish to try one of them after you learn some of the basics of HTML tagging. It is useful to know enough HTML to code a document before you determine the usefulness of a WYSIWYG editor.

Tags Explained. An element is a fundamental component of the structure of a text document. Some Examples of elements are heads, tables, paragraphs, and lists. Think of it this way: you use HTML tags to mark the elements of a file for your browser. Elements can contain plain text, other elements, or both. To denote the various elements in an HTML document, you use tags. HTML tags consist of a left angle bracket (<), a tag name, and a right angle bracket (>). Tags are usually paired (e.g., <H1> and </H1>) to start and end the tag instruction. The end tag looks just like the start tag except a slash (/) precedes the text within the brackets. HTML tags are listed below. Some elements may include an attribute, which is additional information that is included inside the start tag. For Example, you can specify the alignment of images (top, middle, or bottom) by including the appropriate attribute with the image source HTML code. Tags that have optional attributes are noted below.

The Minimal HTML Document. Every HTML document should contain certain standard HTML tags. Each document consists of head and body text. The head contains the title, and the body contains the actual text that is made up of paragraphs, lists, and other elements. Browsers expect specific information because they are programmed according to HTML and SGML specifications.

Example 32: (Required elements for bare-bones document)

roller:/home/teacher/stud2/>vi test.html
<html>
<head>
<TITLE>A Simple HTML Example</TITLE>
</head>
<body>
<H1>HTML is Easy To Learn</H1>
<P>Welcome to the world of HTML. This is the first paragraph. While short it is still a paragraph!</P>
<P>And this is the second paragraph.</P>
</body>
</html>

ZZ

Example 33: (test created file)
roller:/home/teacher/stud2/->lynx test.html
The required elements are the <html>, <head>, <title>, and <body> tags (and their corresponding end tags). Because you should include these tags in each file, you might want to create a template file with them.

6.5.9 Basic Markup Tags

1. **HTML**: This element tells your browser that the file contains HTML-coded information. The file extension .html also indicates this an HTML document and must be used. (If you are restricted to 8.3 filenames (e.g., LeeHome.htm, use only .htm for your extension.)

2. **HEAD**: The head element identifies the first part of your HTML-coded document that contains the title. The title is shown as part of your browser's window.

3. **TITLE**: The title element contains your document title and identifies its content in a global context. The title is displayed somewhere on the browser window (usually at the top), but not within the text area. The title is also what is displayed on someone's hotlist or bookmark list, so choose something descriptive, unique, and relatively short. A title is also used during a WAIS search of a server.

4. **BODY**: The second—and largest—part of your HTML document is the body, which contains the content of your document (displayed within the text area of your browser window). The tags explained below are used within the body of your HTML document.

5. **Headings**: HTML has six levels of headings, numbered 1 through 6, with 1 being the most prominent. Headings are displayed in larger and/or bolder fonts than normal body text. The first heading in each document should be tagged <H1>.

The syntax of the heading element is:<HY>Text of heading </HY> where y is a number between 1 and 6 specifying the level of the heading.

6. **Paragraphs**: Unlike documents in most word processors, carriage returns in HTML files aren't significant. So you don't have to worry about how long your lines of text are (better to have them fewer than 72 characters long though). Word wrapping can occur at any point in your source file, and multiple spaces are collapsed into a single space by your browser.

Example 34:
roller:/home/teacher/stud2/->vi test2.html

<P>Welcome to the world of HTML.
This is the first paragraph.
While short it is
still a paragraph!</P>

<P ALIGN=CENTRE>
This is a centered paragraph. [See the formatted version]
</P>

ZZ

In the source file there is a line break between the sentences. A Web browser ignores this line break and starts a new paragraph only when it encounters another <P> tag.

Using the <P> and </P> as a paragraph container means that you can center a paragraph by including the ALIGN = alignment attribute in your source file.

7. **Lists**: HTML supports unnumbered, numbered, and definition lists.
Example 35: (Making an UNNUMBERED, bulleted list)
1. start with an opening list <UL> (for unnumbered list) tag
2. enter the <LI> (list item) tag followed by the individual item; no closing </LI> tag is needed
3. end the entire list with a closing </UL> tag
roller:/home/teacher/stud2/->vi test3.html
<UL>
<LI> apples
<LI> bananas
<LI> grapefruit
</UL>
ZZ
The <LI> items can contain multiple paragraphs. Indicate the paragraphs with the <P>.
A NUMBERED list (also called an ordered list, from which the tag name derives) is identical
to an unnumbered list, except it uses <OL> instead of <UL>. The items are tagged using the same
<LI> tag:
Example 36: (Making an numbered, bulleted list)
roller:/home/teacher/stud2/->vi test3.html
<OL>
<LI> oranges
<LI> peaches
<LI> grapes
</OL>
ZZ
A DEFINITION list (coded as <DL>) usually consists of alternating a definition term (coded as <DT>) and a definition definition (coded as <DD>). Web browsers generally format the definition
on a new line.
Example 37: (Making an definition, bulleted list)
roller:/home/teacher/stud2/->vi test3.html
<DL>
<DT> NCSA
<DD> NCSA, the National Center for Supercomputing Applications, is located on the campus
of the University of Illinois at Urbana-Champaign.
<DT> Cornell Theory Center
<DD> CTC is located on the campus of Cornell University in Ithaca,
New York.
</DL>
ZZ
The <DT> and <DD> entries can contain multiple paragraphs (indicated by <P> paragraph
tags), lists, or other definition information.
8. Addresses: The <ADDRESS> tag is generally used to specify the author of a document, a
way to contact the author (e.g., an E-mail address), and a revision date. It is usually the last item in a
file.
Example 38: (Create address)
roller:/home/teacher/stud2/->vi test3.html
<ADDRESS>
A Beginner's Guide to HTML / NCSA / pubs@ncsa.uiuc.edu / revised April 96
</ADDRESS>
ZZ
9. Horizontal Rules The <HR> tag produces a horizontal line the width of the browser
window. A horizontal rule is useful to separate sections of your document. You can vary a rule's size
(thickness) and width (the percentage of the window covered by the rule). Experiment with the settings until you are satisfied with the presentation:

`<HR SIZE=4 WIDTH="50%">`

10. **Linking**: The chief power of HTML comes from its ability to link text and/or an image to another document or section of a document. A browser highlights the identified text or image with color and/or underlines to indicate that it is a hypertext link (often shortened to hyperlink or link).

   **HTML’s single hypertext-related tag is `<A>`**, which stands for anchor:
   1. start the anchor with `<A` (include a space after the A)
   2. specify the document you’re linking to by entering the parameter HREF= “filename” followed by a closing right angle bracket (`>`)
   3. enter the text that will serve as the hypertext link in the current document
   4. enter the ending anchor tag:`</A>` (no space is needed before the end anchor tag)

Example 39: *(Create a sample hypertext reference)*

```
roller:/home/teacher/stud2/->/vi test4.html
```

```
<A HREF="test3.html">Maine</A>
```

This entry makes the word test4 the hyperlink to the document test3.html, which is in the same directory as the first document.

11. **URLs**: The syntax is: scheme://host.domain [:port]/path/ filename where scheme is one of file a file on your local system WAIS a file on a WAIS server;
ftp a file on an anonymous FTP news a Usenet newsgroup;
server;
http a file on a World Wide Web telnet a connection to a Telnet-based service.
server;
gopher a file on a Gopher server;

The port number can be omitted. *(That means unless someone tells you otherwise, leave it out.)*

**Example 40: *(include a link to NCSA’s Beginner’s Guide to HTML in your document)*

```
roller:/home/teacher/stud2/->/vi test4.html
```

```
<A HREF="http://www.ncsa.uiuc.edu/General/Internet/WWW/HTMLPrimer.html">NCSA’s Beginner’s Guide to HTML</A>
```

12. **Inline Images**: Most Web browsers can display inline images (that is, images next to text) that are in X Bitmap (XBM), GIF, or JPEG format. Other image formats are being incorporated into Web browsers. Each image takes time to process and slows down the initial display of a document. Carefully select your images and the number of images in a document.

   **To include an inline image, enter:**
   ```html
   <IMG SRC = ImageName>
   ```
   where ImageName is the URL of the image file.

   The syntax for `<IMG SRC>` URLs is identical to that used in an anchor HREF. If the image file is a GIF file, then the filename part of ImageName must end with .gif. Filenames of X Bitmap images must end with .xbm; JPEG image files must end with .jpg or .jpeg; and Portable Network Graphic files must end with .png.

**Image Size Attributes**

You should include two other attributes on `<IMG>` tags to tell your browser the size of the images it is downloading with the text. The HEIGHT and WIDTH attributes let your browser set aside the appropriate space (in pixels) for the images as it downloads the rest of the file. *(Get the pixel size from your image-processing software, such as Adobe Photoshop.)*

**For Example 41: to include a self portrait image in a file along with the portrait’s dimensions, enter:**

```html
<IMG SRC = SelfPortrait.gif HEIGHT=100 WIDTH=65>
```
13. **External Images:** You may want to have an image open as a separate document when a user activates a link on either a word or a smaller, inline version of the image included in your document. This is called an external image, and it is useful if you do not wish to slow down the loading of the main document with large inline images.

To include a reference to an external image, enter:

```html
<A HREF="MylImage.gif">link anchor</A>
```

You can also use a smaller image as a link to a larger image. Enter:

```html
<A HREF="LargerImage.gif"><IMG SRC="SmallImage.gif"></A>
```

The reader sees the SmallImage.gif image and clicks on it to open the LargerImage.gif file.

6.5.10 **Searching the World-Wide Web**

Searching the Web can be a daunting task. However, there are many tools available to make it easier. There are general directories, for browsing as well as search engines that allow users to search more or all text within web sites.

**General (Directory-oriented) WWW Sites:** Information Sources: the Internet and Computer Mediated Communication

- WWW Virtual Library: [http://www.w3.org/hypertext/DataSources/bySubject/Overview.html](http://www.w3.org/hypertext/DataSources/bySubject/Overview.html)[34]
- EINet Galaxy: [http://www.einet.net](http://www.einet.net)[33]
- GNN-Whole Internet Catalog: [http://www.gnn.com/wic/newrescat.toc.html](http://www.gnn.com/wic/newrescat.toc.html)[35]

**WWW Search Engines** Note: When using WWW search engines, make sure you look at the searching guidelines for the engine you are using. For Example, some search engines index web documents differently than others and this will affect your search results.

- Alta Vista: [http://www.altavista.digital.com](http://www.altavista.digital.com)[36]
- Magellan: [http://www.mckinley.com](http://www.mckinley.com)[37]
- Lycos: [http://www.lycos.com](http://www.lycos.com)[38]
- InfoSeek: [http://www.infoseek.com](http://www.infoseek.com)[39]
- Open Text: [http://www.opentext.com](http://www.opentext.com)[40]
- Webcrawler: [http://www.webcrawler.com](http://www.webcrawler.com)[41]

**WWW Meta Search Engines:**

Meta search engines search several of the above sites at once. However, you are limited in the number of advanced search features of certain tools.

- Savvy Search: [http://www.cs.colostate.edu/~dreiling/smartform.html](http://www.cs.colostate.edu/~dreiling/smartform.html)[44]
7. FINDING PEOPLE

7.1 FINGER

The Finger service provides information about a particular user on a host computer. By fingering a person, you can find out information such as userid, address, full name and if they are currently logged on to the system. Types of information that are available vary from system to system. To finger a person, you need a userid and address of their host computer.

Example 42: (display information about a person)
roller:/home/teacher/stud2/->finger stud3 roller.ukma.kiev.ua

Example 43: (displays a list of all users who logged on)
roller:/home/teacher/stud2/->finger @roller.ukma.kiev.ua

*** Finger can be used to obtain other types of information.

Example 44: (latest report on solar activity)
roller:/home/teacher/stud2/->finger solar@xi.uleth.ca

7.2 WHOIS

The Whois directory can be used to find a person who is involved in maintaining the Internet network or in network research. The Whois directory is on the InterNIC Registration Services host, which is run by the Defense Data Network Information Center.

There are several Whois servers to which you can telnet. The main civilian Internet service is at whois.internic.net, and the main government directory is at nic.dd.mil.

Example 45: (Access Whois)
roller:/home/teacher/stud2/->telnet whois.internic.net
login: whois
>whois name_of_people
0
0
>quit

7.3 X-500 DIRECTORY

You can look up telephone numbers and electronic mail address of people and organizations by accessing the X-500 directory service. X-500 was started by a group called the International Standards Organization as a method for letting computers search directories. X-500 is referred to as white pages directories, and it organizes its data as a library of telephone books. By specifying the name of the person and/or organization, X-500 will search the corresponding directory for the information you are looking for.

X-500 clients are known as Directory User Agents (DUA). If you do not have a DUA, you access a public DUA by Gopher, World Wide Web, or Telnet.

A common X-500 service is a program called fred (Front End to Directories). Two major public servers that use fred are wp1.psi.com and wp2.psi.com.

Example 46: (access an X-500 directory and search for people or organization)
roller:/home/teacher/stud2/->telnet wp1.psi.com
7.4 NETFIND

Netfind is a program that will actively search through the Internet, looking for a computer that knows about the person you are trying to find. You have to have some idea of where the person is to use Netfind. Netfind will look for a name and mail address, and try to find Finger information about that person.

You can telnet to a public Netfind host:

<table>
<thead>
<tr>
<th>Australia</th>
<th>archie.au</th>
<th>South Korea</th>
<th>nic.nm.kr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>macs.ee.mcgill.ca</td>
<td>USA</td>
<td>redmont.cis.uab.edu</td>
</tr>
<tr>
<td>Chile</td>
<td>malloco.ing.puc.cl</td>
<td>USA</td>
<td>bruno.cs.colorado.edu</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>netfind.vslib.cz</td>
<td>USA</td>
<td>mudhoney.micro.umn.edu</td>
</tr>
<tr>
<td>England</td>
<td>monolith.cc.ic.ac.uk</td>
<td>USA</td>
<td>netfind.oc.com</td>
</tr>
<tr>
<td>Singapore</td>
<td>lincoln.technet.sg</td>
<td>USA</td>
<td>ds.internic.net</td>
</tr>
<tr>
<td>Slovakia</td>
<td>nic.uakom.sk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example 47: (access Netfind and search for people or organization)

roller:/home/teacher/stud2/->telnet nic.uakom.sk
Login: netfind
Top level choices:
1. Help
2. Search
   
   Select: 2
Enter person and keys (blank to exit)--> name part_of_the_person_address
   
   Select: quit
8. ELECTRONIC MAIL ACCESS FOR MAIN INTERNET SERVICES

If you have only E-mail access to Internet you can use other Internet services such as FTP, Gopher, WWW, WAIS, Archie through E-mail.

8.1 FTPMAIL

To use this service you have send letter to one of ftpmail servers with body consist of ftp command you want.

Example 48:
roller:/home/teacher/stud2->mail ftpmail@ftp.uni-stuttgart.de
open ftp.microsoft.com
mode binary
get /services/whql/audio/drivers/crd423x.exe
quit

BRIEF LIST OF POSSIBLE COMMAND:

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>help</td>
<td>get help from ftpmail server</td>
</tr>
<tr>
<td>reply-to address</td>
<td>send the answer to address</td>
</tr>
<tr>
<td>open host login_name</td>
<td>open ftp connection to host for user login_name</td>
</tr>
<tr>
<td>password</td>
<td>hadwin</td>
</tr>
<tr>
<td>cd directory</td>
<td>change directory</td>
</tr>
<tr>
<td>ls directory</td>
<td>list of directory contents</td>
</tr>
<tr>
<td>dir directory</td>
<td>get extended list of directory contents</td>
</tr>
<tr>
<td>get filename</td>
<td>get file and send it to you by E-mail</td>
</tr>
<tr>
<td>gzip</td>
<td>compress all delivered files and directory list with gzip</td>
</tr>
<tr>
<td>uuencode</td>
<td>code binary files with uuencode (default)</td>
</tr>
<tr>
<td>force uuencode</td>
<td>code all files with uuencode</td>
</tr>
<tr>
<td>mode ascii</td>
<td>set ascii mode for deliverance</td>
</tr>
<tr>
<td>mode binary</td>
<td>set binary mode for deliverance</td>
</tr>
<tr>
<td>quit</td>
<td>close ftp session</td>
</tr>
</tbody>
</table>

FTPMAIL Servers List
This is a list of all the ftpmail servers in the world. To add new servers to this list please mail the E-mail address of the server and details of any restrictions to lmjm@doc.ic.ac.uk.

EUROPE.
- ftpmail@doc.ic.ac.uk[50]. using ftpmail 1.23 (experimental). Restrictions: none listed.
- ftpmail@grasp.insa-lyon.fr[49] using ftpmail 1.23 (experimental), with a few modifications for trapping jobs from people who request well-known packages from other places. Restrictions: Policy of use for this server. If you don't agree, don't use it!

1. Do not request files already stored on the local archive from remote sites. We have some stuff on-line: FAQs, GNUs, RFCs, BSD, UNIX mail and news applications and many others!. Remember our ftp server does online files compression/uncompression and tarring if needed.
2. All transfers must obey the French laws as well as other's.
3. We are located in France, Europe. Avoid connecting to sites outside of Europe.
4. Please European users only (except for the local archive where all users may use this ftpmail server). Other ftpmail services exist!

5. Only "anonymous" transfers are allowed.

6. All transfers are logged. In case of problems caused by a request we will give out the logs to the complaining site.

- ftpmail@ftp.uni-stuttgart.de[51] using ftpmail 1.20 with local nodes. Restrictions: ls -R disabled.
- ftpmail@ieunet.ie[52] using Squirrel Mail Server Software V3.01B. Restrictions: none listed.
- ftpmail@census.gov[53] using ftpmail 1.20. Restrictions: none listed.

**8.2 ARCHIE THROUGH ELECTRONIC MAIL**

You send letter with filename or template of filename as a body to archie@hostname (where hostname is address of Archie server) and server return You list of founded files and address of servers.

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>help</td>
<td>get help info from server</td>
</tr>
<tr>
<td>prog template</td>
<td>return information about files with appropriate filenames</td>
</tr>
<tr>
<td>whatis template</td>
<td>return whatis description database elements which comply with template</td>
</tr>
<tr>
<td>compress</td>
<td>set compression for server answers</td>
</tr>
<tr>
<td>path address</td>
<td>rsend answer to address</td>
</tr>
<tr>
<td>servers</td>
<td>return list of Archie servers</td>
</tr>
<tr>
<td>quit</td>
<td>close Archie session</td>
</tr>
</tbody>
</table>

**Brief list of Archie servers:**

<table>
<thead>
<tr>
<th>Address</th>
<th>Country</th>
<th>Country</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>archie.doc.ic.ac.uk</td>
<td>Great Britain</td>
<td>archie.luth.se</td>
<td>Sweden</td>
</tr>
<tr>
<td>archie.hensa.ac.uk</td>
<td>Great Britain</td>
<td>archie.switch.ch</td>
<td>Switzerland</td>
</tr>
<tr>
<td>archie.edvz.uni-linz.ac.at</td>
<td>Austria</td>
<td>archie.unipi.it</td>
<td>Italy</td>
</tr>
<tr>
<td>archie.univie.ac.at</td>
<td>Austria</td>
<td>archie.au</td>
<td>Australia</td>
</tr>
<tr>
<td>archie.funet.fi</td>
<td>Finland</td>
<td>archie.rutgers.edu</td>
<td>USA</td>
</tr>
<tr>
<td>archie.th-darmstadt.de</td>
<td>Germany</td>
<td>archie.internic.net</td>
<td>USA</td>
</tr>
<tr>
<td>archie.rediris.es</td>
<td>Spain</td>
<td>archie.sura.net</td>
<td>USA</td>
</tr>
<tr>
<td>archie.uqam.ca</td>
<td>Canada</td>
<td>archie.unl.edu</td>
<td>USA</td>
</tr>
</tbody>
</table>

**8.3 GOPHER THROUGH ELECTRONIC MAIL**

1. Send letter with empty body to gophermail server. It return its start page.
2. To choose a menu items in received page check this items with x and send page back to gophermail server. Server will return contents of selected pages.
Some of gophermail servers:

<table>
<thead>
<tr>
<th>Address</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:gophermail@calvin.edu">gophermail@calvin.edu</a></td>
<td>USA</td>
</tr>
<tr>
<td><a href="mailto:Gopher@ucmpl.berkeley.edu">Gopher@ucmpl.berkeley.edu</a></td>
<td>USA</td>
</tr>
<tr>
<td><a href="mailto:gophermail@mercury.forestry.umn.edu">gophermail@mercury.forestry.umn.edu</a></td>
<td>USA</td>
</tr>
<tr>
<td><a href="mailto:Gopher@pip.shsu.edu">Gopher@pip.shsu.edu</a></td>
<td>USA</td>
</tr>
<tr>
<td><a href="mailto:Gopher@earn.net">Gopher@earn.net</a></td>
<td>France</td>
</tr>
<tr>
<td><a href="mailto:Gopher@dsv.su.se">Gopher@dsv.su.se</a></td>
<td>Sweden</td>
</tr>
<tr>
<td><a href="mailto:Gopher@join.ad.jp">Gopher@join.ad.jp</a></td>
<td>Japan</td>
</tr>
</tbody>
</table>

8.4 WORLD-WIDE WEB THROUGH ELECTRONIC MAIL

Example 49: (this URL point to reference page of wwwmail server)
roller:/home/teacher/stud2/->mail agora@agora.w3.org
Subject:
SEND http://www.w3.org/pub/WWW/MailRobot/send.html

To request master document and all linked documents use command deep instead of send.
If you want get pages in HTML form instead of plain text use command source instead of send.

8.5 WAIS THROUGH ELECTRONIC MAIL

Example 50: (WAISmail server)
roller:/home/teacher/stud2/->mail waismail@think.com.
Subject:
maxres 25
search jargon kludge hack fudge

EOT
Where maxres indicates number of records to return, jargon indicates document to search in,
kludge, hack, fudge – keywords to search for in jargon.
Server will return list of pointer in such form:
Result # 1 Score:1000 lines:0 bytes:69 Date:0 Type: TEXT
Headline: kludge
DocID:501356 501425 /src/wais/wais-sources/jargon.txt:/src/wais/wais-sources/
jargon@hal.gnu.ai.mit.edu:8000%TEXT

Example 51: (Request document - send command retrieve with received exact document identifier)
roller:/home/teacher/stud2/->mail waismail@think.com.
Subject:
retrieve 501356 501425 /src/wais/wais-sources/jargon.txt:/src/wais/wais-sources/
jargon@hal.gnu.ai.mit.edu:8000%TEXT
9. INTERNET RESOURCES RESEARCH STRATEGIES

General Search Strategy

The Internet contains untold millions of information files: journals, music, images of manuscripts, radio programs, books, software, maps, movies, access to library catalogs around the world, courseware, etc. It is not always easy for the novice or even an experienced Internet traveler to find what they need. A systematic search using Internet tools appropriate to your information need is the key to finding what you want.

9.1 HOW TO FIND ANYTHING ON THE INTERNET IN 5 STEPS

1. Browse by subject
   - Gopher Subject Trees
   - WWW Subject pages

2. Keyword Searches
   - Jughead (Search a local Gopher only)
   - Veronica (search all Gophers worldwide)
   - Spiders, Robots, & Wanderers (World Wide Web search engines)
   - WAIS (indexes full text databases)
   - Archie (indexes anonymous FTP sites)

3. Internet Citations: Uniform Resource Locators (information at known locations)
   - Telnet
   - FTP
   - Gopher
   - WWW

4. Discussion groups and newsgroups: Communication and current awareness
   - Usenet newsgroups
   - "Real news" via Clarinet (A.P., Reuters, others)
   - Listserv discussion groups

5. Internet Information Guides
   - Guides via Gopher and WWW
   - FAQ's

9.2 TWO MINUTE SEARCH STRATEGY

A. Use Veronica (searches all Gophers worldwide) and Jughead (searches the Gopher you are using only). This is a quick way to search 15-20 million different Internet resources and to make a connection to the desired resource. They do not search document contents or subject headings or abstracts. You can use "and" "or" and "not" in your searches, and you can use an asterisk "*" as a end of word wildcard.

B. Use the World Wide Web keyword search tools. There are more than a dozen of these and they all work differently, but they all allow you to input keywords and retrieve a listing of links to WWW resources. Most of the Web search tools are compiled by robot software programs that roam the web creating databases that you then search.
9.3 TEN MINUTE STRATEGY

A. Browse the pre-compiled subject listings on Gopher and World Wide Web. If you are not sure what resources are available, this will give you a feel for the resources in the subject area. It is a particularly good way to find useful databases that will not turn up in most keyword searches. For example, late breaking news about events around the world are always covered by the Voice of America, but the topics will not appear in Gopher or Web keyword searches - you have to be aware that the Voice of America resource exists and that it is a good resource to find the information you want. The "Yahoo" Internet Directory is a good place to start looking for subject-oriented information: URL: http://www.yahoo.com

B. For some types of current information a quick look at the relevant Usenet Newsgroups is a good way to answer your question. The Usenet Newsgroup articles are not indexed in The Gopher or Web search tools unless a particular article has been permanently saved as a Gopher/Web resource.

Strategy Tips

- The Internet is not like a library where human knowledge has been organized according to widely accepted rules. It is more like a vacant lot where anything and everything may spring up at random.
- Everything on the Internet has a tendency to be improved, updated, changed, and moved frequently. A citation that is more than a few weeks old may no longer be any good.
- No one is an expert on the Internet. It is made up of too many different computer types, with daily contributions from millions of different people and organizations - each with their own ideas and their own cultural and intellectual perspectives.

Are you using the correct tool? Consider using Internet tools in light of what your searching for. For example, if you are looking for pictures of a specific painting, use the World Wide Web, instead of gopher (a text-based resource).

- Keep your search parameters specific, you can always widen them later. Try to anticipate methods for narrowing or broadening a search.
- Good searching is interactive. Think of a search as a hypotheses, as in scientific inquiry.
- Use choosing search terms, think of synonyms. Everyone may not have the same perspective as you do and thus choose different terms to represent their topic.
- Be flexible, look at a search in more than one way.
- Serendipity is important for effective retrieval. Browse.

9.4 EVALUATION OF INFORMATION RESOURCES

Here are some useful criterion for evaluating various information resources on the Internet:

1. Coverage
   - Do the resources provided have the necessary subject emphases?
   - What is the focus of the material? (i.e. popular or research oriented?)
   - What is the range of dates of the material?
   - What is the quality of material indexed? What is the extent of coverage in terms of "world's literature"?

2. Currency
   - How current is the resource?
   - How often is it updated?

3. Authority
   - Who is providing the information?
   - Is the authority appropriate and/or reliable?

4. Presentation
   - Can you access information easily?
   - Is the resource well-organized?
10. INTERNET TALK AND INTERNET RELAY CHAT

10.1 INTERNET TALK

Talk - talk to another user. Talk is a visual communication program which copies lines from your terminal to that of another user.

When first called, talk sends the message:
Message from TalkDaemon@his_machine.
talk: connection requested by your_name@your_machine.
talk: respond with: talk your_name@your_machine to the user you wish to talk to. At this point, the recipient of the message should reply by typing talk your_name@your_machine.

Example 52:
First computer: roller:/home/teacher/stud2/->talk stud3@Roller.UKMA.Kiev.UA
Second Computer: roller:/.../stud3/-> talk stud2@Roller.UKMA.Kiev.UA

It doesn't matter from which machine the recipient replies, as long as his login-name is the same. Once communication is established, the two parties may type simultaneously, with their output appearing in separate windows. Typing control-L "L" will cause the screen to be reprinted, while your erase, kill, and word kill characters will behave normally.

To exit, just type your interrupt character; talk then moves the cursor to the bottom of the screen and restores the terminal to its previous state.

10.2 INTERNET RELAY CHAT

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. 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 evinces '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

Example 53: (access Internet Relay Chat)
roller:/home/teacher/stud2/-> irc
*** Connecting to port 6667 of server world.std.com
*** Welcome to the Internet Relay Network, adamg
o
o
MOTD - ->Spike
* End of /MOTD command.
  ...

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
*** Channel  Users  Topic
*** #Money1  School  CASH (msg SOS_AID help)
  o
*** #DragonSrv  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.

/who #channel-name
Choose one with a number of users, so you can see IRC in action.

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

/away You're still connected but just away from your terminal or computer for awhile.
/help There is a help file. You will get a "topic:" prompt. 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 List of all available public channels.
/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 would change your name for the present session to fleepo.
/query This sets up a private conversation between you and another IRC user.
/query nickname where nickname is yours, then you have established a private conversation. To exit this mode, type /query by itself.

/quit Exit IRC.
/signoff Exit IRC.
/summon Asks somebody connected to a host system with IRC to join you on IRC.
/topic When you've started a new channel, 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.
/whois 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 Gives information for people who recently signed off IRC.
11. OTHER ISSUES

11.1 CITATION OF INTERNET RESOURCES

When referring to Internet Resources in papers, adapt a citation style to include:

• Uniform Resource Locator
• Date the URL was last accessed
• Any other information needed to retrieve document.


An excellent manual for citation of Internet-based information is by Xia Li and Nancy B. Crane, Electronic Style: A Guide to Citing Electronic Information (Westport: Meckler, 1993).

11.2 COPYRIGHT AND THE INTERNET

Always remember that Internet-based documents (and software), just like paper-based documents and software are subject to copyright law. Authors of Internet-based information usually put notices on their products detailing how their information may be used and reproduced. When in doubt, always assume that copyright law is in effect. Contact the copyright owner for permission to use their work. More often than not, they will be happy to give permission.

Particularly useful sites regarding copyright include:

* http://www.bocklabs.wisc.edu/ims/writers.html - Database of Published Writers (A way to find copyright owners.)
* http://www.kentlaw.edu/ - Chicago-Kent College of Law - Home Page
* http://www.gsu.edu/~lawadmin/gsulaw - Georgia State - Law Resources
* gopher://arl.cni.org:70/11/scomm - Assoc. of Research Libraries
12. REFERENCE


5. Crispin P.D. ROADMAP96, Internet training workshop . ROADMAP96@LISTS.INTERNIC.NET


13. USING SITES

1. gopher.eff.org
2. info-deli-server@netcom.com
3. archie.internic.net
4. roller.ukma.kiev.ua
6. http://www.nova.edu/Inter-Links/E-mail/E-mail.html
9. sluaxa.slu.edu/pub/millesjg
10. rtfm.mit.edu
11. liberty.uc.wlu.edu
12. forsythtn.stanford.edu
13. ftp.nevada.edu
14. info.umd.edu
15. ftp.ac.washington.edu
16. archie.sura.net
17. http://www.rsl.ox.ac.uk/bardhtml/wais.html
18. archie.sura.net
20. ftp.uwp.edu
22. microlib.cc.utexas.edu
23. info.cern.ch
24. ukanaix.cc.ukans.edu
25. www.njit.edu
26. swais.wais.eff.org:210/comp-acad-freedom
27. gopher.halcon.dpi.udc.cl
28. ftn.microlib.cc.utexas.edu
29. www.ukma.kiev.ua
32. http://www.w3.org/hypertext/DataSources/bySubject/Overview.html
36. http://www.lycos.com
37. http://www.mckinley.com
42. http://www.cs.colostate.edu/~drilling/smartsform.html
43. TAUNIVM.BITNET
44. VM.TAU.AC.IL
45. LISTSERV@EARNCC.EARN.NET
46. info.cern.ch
47. ftpmail@doc.ic.ac.uk
48. ftpmail@grasp.insa-lyon.fr
49. ftpmail@ftp.uni-stuttgart.de
50. ftpmail@ftp.sunet.se
51. ftpmail@ftpmail@ieunet.ie
52. ftpmail@ieunet.ie
53. ftpmail@census.gov
54. ftpmail@ieunet.ie
55. ftpmail@sunsite.unc.edu
56. ftp.freenet.kiev.ua
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archie.internic.net(18)
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archie.edvz.uni-linz.ac.at
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