Introduction to CUNYGS

November 1992

With an account on **CUNYGS**, you can access thousands of libraries, participate in hundreds of electronic discussion groups, send and receive electronic mail, transfer files, edit and process text, as well as write programs in a number of programming languages. This document is an introduction to **CUNYGS**. Topics include: commands for directory and file management; the VMS mail utility; the GNU Emacs display editor; and other topics of interest to the Graduate School community.

Revision/Update Information: Version 1.1

Copyright ©1992 George McClintock III

This document is released under the terms of the GNU General Public License as published by the Free Software Foundation, Inc., 675 Mass Ave., Cambridge, MA 02139, USA. Accordingly:

❶ Permission is granted to copy and distribute this document for no commercial gain, provided that the copyright notice and this permission notice are preserved on all copies.

❷ Permission is granted to copy and distribute modified versions of this document for no commercial gain, provided that the entire resulting derived work is distributed under the terms of a permission notice identical to this one.

❸ This document is still evolving, thus the information in this document is subject to change without notice. The author of this document cannot be held responsible for any errors that may appear in this document.

For more information about the GNU General Public License, see the file ``COPYING,'' located in *CUNYGS*'s EMACS_LIBRARY:(ETC) directory, or write to the Free Software Foundation.

Comments and suggestions for improvements may be forwarded to **mcc@cunyvms1.gc.cuny.edu**.

DISCLAIMER: The software described in this document is provided ``**as is**''. No guarantee is made by the author as to the suitability, reliability, security, usefulness, or performance of this software.

This document is **not authorized** by the Computer Center, and should not be construed as a commitment by the Graduate School and University Center of the City University of New York, which assumes no responsibility for any errors that may appear in this document.

Table 1 presents trademarks of the Digital Equipment Corporation:

Table 1 DEC Trademarks

DEC	DECnet	ULTRIX
VAX	VAXcluster	VMS
DECsystem	DECwindows	VT

Contents

PREFACE v

CHAPTER 1 GETTING STARTED 1–1

1.1 CUNYGS ACCOUNTS 1–1

1.2 ACCESSING CUNYGS 1–1

1.3 LOGIN 1–2

1.4 SET A NEW PASSWORD 1–2

CHAPTER 2 COMMANDS FOR DIRECTORY & FILE MANAGEMENT 2–1

2.1 VMS FILE EXTENSIONS 2–1

2.2 FILE MANAGEMENT COMMANDS 2–1
- 2.2.1 DIRECTORY 2–1
- 2.2.2 TYPE 2–2
- 2.2.3 COPY 2–2
- 2.2.4 RENAME 2–2
- 2.2.5 DELETE & PURGE 2–3
- 2.2.6 PRINT 2–3
- 2.2.7 Wildcards 2–3

2.3 DIRECTORY MANAGEMENT COMMANDS 2–4
- 2.3.1 SHOW DEFAULT 2–4
- 2.3.2 CREATE/DIRECTORY 2–4
- 2.3.3 SET DEFAULT 2–4
- 2.3.4 Moving Files 2–5

2.4 HELP! 2–5

Contents

CHAPTER 3 THE VMS MAIL UTILITY 3–1

3.1 SENDING MAIL 3–1
3.1.1 Sending Mail to Network Addresses 3–2
3.1.2 Sending Files 3–2
3.1.3 Full-Screen Mode 3–3
3.1.4 Aborting Mail Messages 3–3

3.2 READING MAIL 3–3

3.3 MAIL COMMANDS 3–4
3.3.1 Reading Mail in Folders 3–4
3.3.2 Replying to Mail 3–5
3.3.3 Quoting Mail in Your Reply 3–5
3.3.4 Forwarding Mail 3–5
3.3.5 Saving Mail in Files 3–5
3.3.6 Deleting Mail 3–6
3.3.7 ''Undeleting'' Deleted Mail 3–6
3.3.8 Printing Mail 3–6
3.3.9 Mail Help 3–7
3.3.10 Quitting Mail 3–7

CHAPTER 4 MAIL ALIASES 4–1

4.1 CREATING ALIASES 4–1

4.2 ALIAS HELP! 4–2

CHAPTER 5 GNU EMACS 5–1

5.1 INTRODUCTION 5–1
5.1.1 Emacs Conventions 5–1

5.2 GETTING STARTED 5–2
5.2.1 Issuing Emacs Commands 5–2
5.2.2 The .emacs File 5–3

5.3 EDIT COMMANDS 5–4
5.3.1 Search and Replace 5–5
5.3.2 Cut and Paste 5–6

5.4 EMACS HELP 5–8

5.5 EMACS DOCUMENTATION 5–8

APPENDIX A LOGIN.COM A–1

APPENDIX B GOPHER B–1

APPENDIX C ACCESSING CUNYGS FROM THE GRACE BLDG. C–1

FIGURES

5–1 A GNU Emacs Buffer 5–3

TABLES

1 DEC Trademarks ii
2 Keyboard Conventions v
3 Command Key Conventions vi
3–1 Network Syntax 3–2
5–1 Emacs Command Conventions 5–1
5–2 Cursor Commands 5–4
5–3 File Commands 5–4
5–4 Buffer Commands 5–5
5–5 Formatting Commands 5–5
5–6 Search Commands 5–5
5–7 Kill and Yank Commands 5–7
5–8 Help Command Key Sequences 5–8

Preface

CUNYGS is the name of a VAX 4000 multi-user computer manufactured by Digital Equipment Corporation and owned by the Graduate School. **CUNYGS** features the VMS (Virtual Memory System) operating system, related tools and utilities, and supports the EDT and GNU Emacs text editors, as well as the TeX and LaTeX text processors. **CUNYGS** also supports a variety of programming languages including FORTRAN, C, PASCAL, PL/1, APL, LISP, and OPS5.

CUNYGS is connected to the Internet network, which provides mail, file transfer service, and remote login capability to thousands of computer systems located all over the world. File transfer protocols include KERMIT (VMS & C), TELNET/FTP, and RZ/SZ (XYZmodem). Also available to **CUNYGS** users are the VNEWS, RNEWS, and NEWSRDR electronic ''newsreaders'', which display articles from hundreds of discussion groups.

Intended Audience

This document is in production for the benefit of the faculty, students and staff of the Graduate School and University Center of The City University of New York.

Conventions

Typeface conventions in this document appear as follows:

❶ Commands can be entered in either uppercase or lowercase and are depicted in **UPPERCASE boldface**.

❷ Command qualifiers modify command behavior and are preceded by a slash (/).

❸ Arguments to commands, depicted in *oblique* type, signify variables supplied by the user, such as directory and file names. For example, *filename* is a generic argument indicating a file of any name.

❹ Electronic mail addresses are depicted in **boldface**.

Table 2 presents **CUNYGS** keyboard conventions.

Table 2 Keyboard Conventions

Key	Function
<CTRL>	Press the Control key.
DEL	Press the DELETE or BACKSPACE key.
RET	Press the Return key.
SPC	Press the SPACEBAR.
TAB	Press the Tab key.

Commands combining two (or more) function keys are enclosed in left and right angle brackets (<>); different keys within the same command are separated by a slash (/).

Table 3 presents **CUNYGS** command key combinations.

Table 3 Command Key Conventions

Key	Function
<CTRL/C>	Hold down the Control key and press C.
<CTRL/Z>	Hold down the Control key and press Z.

Document Production Information

This document was produced with VAX DOCUMENT, an electronic publishing system developed by the Digital Equipment Corporation. VAX DOCUMENT is installed on **CUNYGS** (**cunyvms1.gc.cuny.edu**) on a trial basis. Requests for information should be forwarded to **mcc@cunyvms1.gc.cuny.edu**.

Related Documents

Additional information can be found in the following documents:

- *VMS General User's Manual*

1 Getting Started

1.1 CUNYGS Accounts

With an account on **CUNYGS**, you can access thousands of libraries and ''anonymous *ftp*'' sites,† participate in hundreds of electronic discussion groups, send and receive electronic mail, transfer files, edit and process text, as well as write and run programs in a number of programming languages.

1. Pick up an account application in the User Area of the Computer Center.
2. Choose a ''username'' and a ''password'' that you will not forget.
3. Obtain a signature from a Graduate School faculty member assigned to your Program and complete the application.
4. Return your signed application to a member of the Computer Center consulting staff, who will ask to see your Graduate School ID.
5. Allow seven working days for processing.

Note: If the username you have chosen has already been assigned to another user, you will be given a different username than the one you requested.

1.2 Accessing CUNYGS

During Computer Center hours, **CUNYGS** is accessed through TELNET, connected by the Novell and AppleShare networks to the IBM PCs and the Macintosh computers located in the User Area, MacLab and Statistics Lab. Ask a consultant for assistance if you need help accessing **CUNYGS** in the Computer Center.

CUNYGS can also be accessed by telephone from a remote location with a modem. Set your telecommications software parameters as follows:

1. 8 data bits
2. 1 stop bit
3. No parity.

Set your modem dialer to one of two telephone numbers, depending on the speed of your modem, as follows:

1. 212-642-2761 for 300-2400 baud
2. 212-642-1950 for V32bis

† For an excellent discussion of anonymous *ftp*, see *Zen and the Art of the Internet* in the CUNYGS **DOCSETS** directory.

1.3 Login

When you have accessed **CUNYGS**, **CUNYGS** will identify itself and prompt you for your username and password. Respond to the prompts as follows:

```
Graduate Center Academic Computer V5.4-2

Username:
```

Type your username and press RET. **CUNYGS** will prompt you for your password.

```
Password:
```

Type your password and press RET. Your password will not be displayed as you type. Several lines of text will scroll up your screen, communicating information about **CUNYGS**, installed software, and various timely announcements.

Finally, **CUNYGS** will display the date and time of your last login, followed by the Digital Command Language [DCL] prompt–a dollar sign ($) on the left side of your screen. Next to the DCL prompt you will see your ''cursor'', a blinking box or an underscore marking the place where characters appear when keys are pressed.

```
 Last interactive login on Friday, 1-APRIL-1992 13:13
   Last non-interactive login on Friday, 13-APRIL-1992 13:13
No files to receive for USR
If you get errors after this message check your LOGIN.COM

****WARNING You do not have a LOGIN.COM in your directory ****

$
```

Despite the warning, a LOGIN.COM is not necessary for operations such as electronic mail and file transfer. For more information about LOGIN.COMs, refer to the Appendix at the end of this document. To obtain a skeleton LOGIN.COM, type the following command at the DCL prompt ($):

```
$ copy skel:login.com sys$login RET
```

The next time you login, **CUNYGS** will recognize the LOGIN.COM and no warning will appear.

Note: If you have never logged in to CUNYGS, you will receive a message indicating that your password has expired. You must change your password before you logout from your first session. See below.

1.4 Set a New Password

The first time you login to **CUNYGS**, a message indicating that your password has expired will be displayed. (Periodically **CUNYGS** requires that you change your password in order to assure account security.) You must change the password before you logout from your first **CUNYGS** session or you will not be able to access the system again without the help of the Computer Center operations staff.

To change your password:

❶ Type **set password** at the DCL prompt ($) and press RET.

```
$ set password RET
```

❷ **CUNYGS** will respond with a prompt:

```
OLD PASSWORD:
```

❸ Type the same password that you used to login, and press RET. **CUNYGS** will prompt you for a new password (from 6 to 8 characters):

```
NEW PASSWORD:
```

❹ Type a new password and press RET. **CUNYGS** will ask you to verify your new password:

```
VERIFICATION:
```

❺ Type the new password again and press RET. When the DCL prompt ($) appears, your new password will be valid. *Do not forget your password!*

2 Commands for Directory & File Management

CUNYGS features the VMS (Virtual Memory System) operating system. All the commands described in this section are VMS commands and are entered at the DCL prompt ($). For more information about VMS commands and the Digital Command Language, see the *VMS General User's Manual*.

2.1 VMS File Extensions

VMS file names have three components: the filename; the file extension (sometimes called file type); and the version number. For example:

```
MYFILE.TXT;1
```

MYFILE. is the filename. The filename can have from one to 39 characters chosen from letters A through Z and/or numbers one through 9. The filename is always followed by a period (.).

TXT is the file extension. Although some programs require specific file extensions, most extensions are arbitrary, permitting files to grouped according to user-defined categories. For example, a file extension of *DAT* is often used for data files. *TXT* is the standard extension for text files.

1 is the version number. Version numbers are always preceded by a semi-colon (;). The version number represents the number of times a file is opened and saved; each time a file is saved, **CUNYGS** automatically increments the version number by one, preserving the previous versions of the file. These older versions of the file will not be erased until you issue the the **DELETE** or **PURGE** commands.

Note: New users are currently limited to three versions of a file. Upon creation of a fourth version, the first (or oldest) version is deleted.

2.2 File Management Commands

Below is a brief description of VMS commands for file management. Commands can be entered in upper- or lowercase and abbreviated to their first identifying letters; for example: **dir** for **DIRECTORY**, **del** for **DELETE**, etc. Press RET to complete the command.

For more information about VMS commands and the Digital Command Language, see the *VMS General User's Manual*.

2.2.1 DIRECTORY

The **DIRECTORY** command displays a list of the files in the ''default'' or current working directory. For example, if your username were USR and you typed **DIR** the DCL prompt ($) during your first **CUNYGS** session, **CUNYGS** would respond:

```
$ dir RET
 Directory USERS:[PROGR.USR]
 No files found.
```

USERS:[PROGR.USR] is the name of a VMS directory path. **USERS:** is the name of the disk drive where directories and files are stored. **[PROGR.USR]** is an example of a program affiliation (PROGR) and a username (USR), which together identify the location and name of a user's ''default login'' directory.

In the following example, note the different versions of one file, as well as subdirectories (identified by the extension **DIR**), listed with the files:

```
$ dir RET
 Directory USERS:[PROGR.USR]
 ART.DIR;3      ART.TXT;1      COURSE.DIS;1      DATA.DOC;1
 EDTINI.EDT;1   LOGIN.COM;1    REF.DIR;1
 Total of 7 files.
```

2.2.2 TYPE

To view a file on your screen, issue the **TYPE** command at the DCL prompt ($):

```
$ ty filename.txt RET
```

The file will scroll rapidly up the screen.

Scrolling is controlled with Control key combinations: <CTRL/S> to stop scrolling; <CTRL/Q> to resume scrolling.

To view a file screen by screen, issue the **TYPE** command with the **/PAGE** qualifier:

```
$ ty/p filename.txt RET
```

2.2.3 COPY

To copy a file, issue the **COPY** command at the DCL prompt ($):

```
$ cop myfile.txt yourfile.txt RET
```

In the above example, *myfile.txt* is copied, and the copy is renamed to *yourfile.txt*.

2.2.4 RENAME

To rename a file, issue the RENAME command at the DCL prompt ($):

```
$ ren myfile.dat yourfile.dat RET
```

Note: The RENAME command is also used to move files from one subdirectory to another.

2.2.5 DELETE & PURGE

The **DELETE** and **PURGE** commands are used to remove files from your directory. **PURGE** ''purges'' all but the most recent version of a file; **DELETE** deletes the file.

```
$ pur filename.txt RET
```

Note: The PURGE command issued without an argument removes all versions of all files except the most recent version from the current working (''default'') directory.

To remove a specific file from your directory, issue the **DELETE** command at the DCL prompt ($):

```
$ del filename.txt;2 RET
```

Note: If the file's version number (or a wildcard) is not entered with the DELETE command, CUNYGS will respond with an error message.

2.2.6 PRINT

To print a draft copy of a file (non-letter quality) on 132-column computer paper, issue the **PRINT** command at the DCL prompt ($):

```
$ pri filename.txt RET
```

Note: To print a specific version of a file, specify the version number.

Printouts can be found in bins located on the west side of the Computer Center and organized according to the first initial of the username.

Letter-quality printing options are also available. The following commands will send *MYFILE.TXT* to the laser printers CASTOR or POLLUX located in the User Area:

```
$ PRINT/QUEUE=CASTOR myfile.txt RET
$ PRINT/QUEUE=POLLUX myfile.txt RET
```

2.2.7 Wildcards

When using commands, a ''wildcard,'' represented by an asterisk (*), can be used as a substitute for any character or group of characters in a filename. For example, the **DIRECTORY** command issued with *MYFILE.** as an argument will list all files beginning with *MYFILE*, such as *MYFILE.DAT*, *MYFILE.TXT*, etc.

```
$ dir myfile.* RET
 Directory USERS:[PROGR.USR]
 MYFILE.DAT     MYFILE.DAT     MYFILE.LET
 Total of 3 files.
```

There are other wildcards; refer to the *VMS General User's Manual* for more information.

2.3 Directory Management Commands

Below is a brief description of VMS commands for directory management. Commands can be entered in upper- or lowercase and abbreviated to their first identifying letters; for example: **create/dir** for **CREATE/DIRECTORY**, etc. Press RET to complete the command.

2.3.1 SHOW DEFAULT

The word ''directory'' refers both to a place where files are stored, and to a command that lists the files. Every directory has a name; your default login directory is identified by your username. When **CUNYGS** displays a directory name in response to a command, the directory appears within brackets ([ ]). For example, if a person with a username of USR logged in and issued the **SHOW DEFAULT** command, the following would be displayed:

```
USERS:[PROGR.USR]
```

USERS: is the name of the disk drive where user directories reside.
PROGR is the name of the user's program affiliation directory.
USR is the user's default login directory.

The **SHOW DEFAULT** command is used to display the name of your ''default'' directory, or the directory in which you are currently working.

2.3.2 CREATE/DIRECTORY

The **CREATE/DIRECTORY** command is used to create a subdirectory. To create a subdirectory named *DATA*, substitute your program affiliation directory and your default login directory for our example ([PROGR.USR]), and type at the DCL prompt ($):

```
$ create/dir [progr.usr.data]  RET
```

In our example, *DATA* is the name of a subdirectory to be created in USR's default login directory. **CUNYGS** will create the subdirectory, adding the extension *DIR* to USR's chosen subdirectory name.

Note: A period (.) can be used to abbreviate the current default directory, thus:

```
$ create/dir [.data] RET
```

2.3.3 SET DEFAULT

The **SET DEFAULT** command is used to move from one directory to another directory. In our example, USR issues the **SET DEFAULT** command to move into the *DATA* subdirectory:

```
$ set def [.data] RET
```

To return to the default login directory, type at the DCL prompt ($):

```
$ set def sys$login RET
```

Note: *SYS$LOGIN* is a system ''logical name'' for a default login directory. It is not necessary include the *SYS$LOGIN* identifier within square brackets.

2.3.4 Moving Files

To move a file from one directory to another directory, issue the **RENAME** command at the DCL prompt ($):

```
$ ren myfile.txt [progr.usr.data] RET
```

In our example, *MYFILE.TXT* is a file to be moved from USR's default login directory to the *[PROGR.USR.DATA]* the destination directory. A period (.) may be used to abbreviate the default directory name; in this case the command would read:

```
$ ren myfile.txt [.data] RET
```

A different filename can be specified after the directory name in order to rename the file. In our example, USR moves *MYFILE.TXT* to *[progr.usr.data]* and renames it to *YOURFILE.TXT*:

```
$ ren myfile.txt [.data]yourfile.txt RET
```

Note: The directory path is part of a filename; when simultaneously moving and renaming files, do not leave a blank space between the destination directory and the new filename.

2.4 Help!

CUNYGS has an excellent online help utility. Type **HELP** at the DCL prompt ($) to access the VMS HELP Facility.

```
$ help RET

HELP

   The HELP command invokes the VMS HELP Facility to display
   information about a VMS command or topic.  In response to the
   "Topic?" prompt, you can:

      o Type the name of the command or topic for which you need help.

      o Type INSTRUCTIONS for more detailed instructions on how to
        use HELP.

      o Type HINTS if you are not sure of the name of the command or
        topic for which you need help.

      o Type a question mark (?) to redisplay the most recently
        requested text.

      o Press the RETURN key one or more times to exit from HELP.


Press RETURN to continue ...
```

3 The VMS Mail Utility

With the VMS Mail Utility, **CUNYGS** users can communicate with one another and with computer systems located all over the world. This document presents basic mail commands for newcomers to **CUNYGS**. For more advanced mail management, please see the *VMS General User's Manual*.

The VMS Mail Utility is invoked with the **MAIL** command. Type **MAIL** at the dollar prompt (**$**). The **MAIL>** prompt will appear on your screen:

```
$ MAIL RET
MAIL>
```

3.1 Sending Mail

To send a message to another user on **CUNYGS**:

❶ Type **MAIL** at the dollar prompt (**$**). The **MAIL>** prompt will appear on your screen:

```
$ MAIL RET
MAIL>
```

❷ Type **SEND** at the **MAIL>** prompt. The **To:** prompt will appear:

```
MAIL>send RET
To:
```

❸ Enter the address at the **To:** prompt and press RET. The three-letter username serves as the address for **CUNYGS** users. The **Subj:** prompt will appear:

```
MAIL>send RET
To: usr RET
Subj:
```

❹ Enter a subject and press RET, or simply press RET. **CUNYGS** will respond:

```
MAIL>send RET
To: usr RET
Subj: Sending Mail RET
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
```

❺ Type your message, pressing RET at the end of each line of text.

❻ When you have finished your message, type <CTRL/Z>. There will be a short pause as your message is sent, then the **MAIL>** prompt will reappear.

❼ To send another message, repeat steps 1 through 6.

3.1.1 Sending Mail to Network Addresses

CUNYGS users can also send mail to users on systems connected to the BITNET, Internet and UUCP networks. Addresses consist of the MX identifier (MX%), quotation marks (" "), the username, and the host or node name, followed by an extension identifying the network path MAIL will take to its destination. Note the syntax for the different networks:

Table 3–1 Network Syntax

Network	Syntax
Internet	MX%"user@host.subdomain.domain"
BITNET	MX%"user@node.bitnet"
UUCP	MX%"user@node.UUCP"

To send mail to network addresses:

❶ Type **MAIL** at the dollar prompt (**$**) and press RET. The **MAIL>** prompt will appear.

```
$ mail RET
MAIL>
```

❷ Type **SEND** and press RET. The **To:** prompt will appear. Type the address and press RET.

Pay strict attention to network syntax. Although BITNET addresses are often specified in uppercase, they can be written in lowercase; Internet addresses are usually written in lowercase; UUCP addresses are usually written in lowercase with the UUCP extension written in uppercase. If you are not certain about the proper syntax for a network address, write the address in lowercase.

Attention: Addresses must be preceded by the MX% identifier and enclosed in quotation marks (" ").

```
MAIL> send RET
To: mx%"usr@gide.uchicago.edu" RET
```

❸ Now follow the procedure for sending mail as described above.

3.1.2 Sending Files

To mail a file, such as *MYFILE.TXT*:

❶ Type **SEND** at the **MAIL>** prompt, followed by the name of the file, then press RET. The **To:** prompt will appear.

```
MAIL>send myfile.txt RET
To:
```

❷ Now follow the procedure for sending mail as described above.

3.1.3 Full-Screen Mode

Unlike a word processing program, the Mail utility will not automatically wrap text to the next line. For wordwrap, you must invoke the EDT editor with the **MAIL/EDIT** command.

❶ Type **MAIL/EDIT** at the dollar prompt ($). The EDT asterisk prompt (*) will appear.

❷ Type **C** at the EDT prompt (*) for full-screen mode. Respond to the usual prompts, **To:**, **Subj:**, etc.

❸ The EDT end-of-buffer symbol ([EOB]) will appear. Enter your message.

❹ When you have finished your message, type <CTRL/Z>. The EDT prompt (*) will reappear.

❺ Type **EXIT** at the EDT prompt (*) to send your message.

```
$ MAIL/EDIT RET
    .
    .
    .
*c RET
    .
    .
    .
[EOB]
    .
    .
    .
 CTRL/z
    .
    .
    .
*ex RET
MAIL>
```

3.1.4 Aborting Mail Messages

If you decide not to send your message, type <CTRL/C> to cancel the procedure. If you have invoked the EDT editor in MAIL, type **QUIT** (instead of **EXIT**) at the EDT prompt (*).

3.2 Reading Mail

If mail has been sent to your **CUNYGS** address, a message will appear on your screen when you login. For example:

```
Last interactive login on Thursday, 19-MAR-1992 23:20
Last non-interactive login on Wednesday, 18-MAR-1992 13:37

       You have 10 new Mail messages.
```

To read your mail, do the following:

❶ Type **MAIL** at the dollar prompt (**$**) and press RET. **CUNYGS** will repeat the NEWMAIL message and the **MAIL>** prompt will appear.

❷ Press RET again. The first of your messages will be displayed on the screen. Then the **MAIL>** prompt will reappear. If the message is longer than one screenful, **CUNYGS** will tell you:

```
Press RETURN for more...
MAIL>
```

❸ Press RET at the **MAIL>** prompt to finish reading your message. After your message has been displayed, the **MAIL>** will reappear.

❹ Press RET to read additional messages. When all your new messages have been displayed, **CUNYGS** will tell you:

```
MAIL> RET
No more messages

MAIL>
```

3.3 Mail Commands

At the end of each message, the **MAIL>** prompt reappears, at which time you may perform other MAIL operations, such as replying, forwarding, deleting, or filing messages.

3.3.1 Reading Mail in Folders

Mail messages are filed in folders. The default folder is called MAIL. After mail is read, all undeleted messages are filed in the MAIL folder. Unread mail remains in the NEWMAIL folder. Deleted mail is found in the WASTEBASKET.

To list the messages in your MAIL folder:

❶ Select the MAIL folder with the **SELECT** *MAIL* command, then press RET. The total number of messages in the folder will be reported, then the **MAIL>** prompt will reappear.

❷ Enter the **DIRECTORY** command and press RET. **CUNYGS** will list your messages by number, sender, date, and subject. The folder name will be located in the upper right corner of the screen. At the end of the list, the **MAIL>** prompt will reappear.

```
MAIL> sel mail RET
5 messages selected

MAIL> dir RET

                                                MAIL
# From                    Date            Subject

1 CUNYGS::SAT             3-OCT-1991      TESTS
2 CUNYGS::GDM             3-OCT-1991      VAX.TXT
3 CUNYGS::ANL             3-OCT-1991      RESTAURANTS
4 CUNYGS::QED             3-OCT-1991      INCOMPLETES!
5 MX%"AIO@junebug.gc.cu 3-OCT-1991      Earth to USR

MAIL>
```

❸ Type the number of the message you want to read at the **MAIL>** prompt and press RET. The selected message will scroll down your screen.

Note: For more information about mail folders, refer to the *VMS General User's Manual*.

3.3.2 Replying to Mail

To reply to a message:

1. Read the message. The **MAIL>** will reappear.
2. Type **REPLY** and press RET.
3. Respond to the usual prompts.
4. Type <CTRL/Z> to send your reply.

3.3.3 Quoting Mail in Your Reply

To include the original message in your reply, use the **REPLY/EXTRACT** command:

1. Type **r/ext** and press RET.
2. Respond to the usual prompts.
3. Type <CTRL/Z> to send the reply.

3.3.4 Forwarding Mail

To forward a message to another user:

1. Type **FORWARD** and press RET.
2. Respond to the usual prompts.
3. Type <CTRL/Z> to forward your message.

3.3.5 Saving Mail in Files

To save a copy of the current message as a file to be edited or printed, you must ''extract'' the message from MAIL:

1. Type **EXTRACT** and press RET.
2. **CUNYGS** will prompt you for a filename.
3. Enter the filename and extension you have chosen and press RET.
4. **CUNYGS** will confirm the file's creation in your current working directory and the **MAIL>** prompt will reappear.

```
[current message]
MAIL> ext
_File: message.txt
USERS:[PROGR.USR]MESSAGE.TXT;1 created

MAIL>
```

3.3.6 Deleting Mail

To delete a message, type **DELETE** at the **MAIL>** prompt and press RET.

Messages can also be deleted by entering the **DELETE** command and the message number or numbers separated by a comma (,). For example:

```
MAIL> d 1,3,5-8,10 RET
MAIL>
```

Deleted messages are filed in the WASTEBASKET until you **PURGE** the WASTEBASKET.

To **PURGE** the WASTEBASKET, issue the **PURGE** command at the **MAIL>** prompt and press RET. The WASTEBASKET will be emptied and the **MAIL>** prompt will reappear. For example:

```
MAIL> pur RET
7 messages deleted

MAIL>
```

3.3.7 ''Undeleting'' Deleted Mail

If you have deleted a message by accident and have not yet purged the WASTEBASKET or issued the **QUIT** command, it is possible to ''undelete'' the deleted message with the following procedure:

1. Use the **SELECT** *WASTEBASKET* command to ''select'' the WASTEBASKET. The **MAIL>** prompt will reappear.
2. Display the message you have deleted by accident by pressing RET if the WASTEBASKET contains only one message. If you have deleted several messages, issue the **DIRECTORY** command and, when the **MAIL>** prompt reappears, enter the number of the message to be ''undeleted'' and press RET.
3. When the selected message is displayed, type **FILE** *MAIL* at the **MAIL>** prompt and press RET. Your message will be filed in the MAIL folder.

3.3.8 Printing Mail

We recommend that messages be ''extracted'' from MAIL before printing. See above.

Nevertheless, the current message can be sent to the printer from the **MAIL>** prompt with the following procedure.

1. Type **PRINT** and press RET to print the message. When you exit MAIL, **CUNYGS** will respond:

```
Job MAIL (queue SYS$PRINT, entry nnn) started on LG$PRINT
```

2. In approximately thirty minutes, you may retrieve the printout of your message from the boxes to the left of Room 306 in the west hallway of the Computer Center.

3.3.9 Mail Help

The VMS Mail utility provides excellent online help. Type **HELP** at the **MAIL>** prompt to access the HELP library.

3.3.10 Quitting Mail

To exit the VMS Mail utility, type **EXIT** at the **MAIL>** prompt. The dollar prompt (**$**) will reappear:

```
MAIL> ex RET
$
```

4 MAIL Aliases

Mail ‘‘aliases’’ are nicknames that users create to simplify long mail addresses. The MX_ALIAS procedure offers a convenient method for defining, displaying, and updating aliases. The first time you use the MX_ALIAS **ADD** command, an ALIAS file will be created for your aliases. To activate these definitions every time you login, you should add the line:

```
$ @SYS$LOGIN:MX_ALIASDEF.COM
```

to your LOGIN.COM procedure. **Do not edit the MX_ALIASDEF.COM file with the EDT or another editor.** Use the MX_ALIAS procedure to **ADD**, **SHOW**, **REMOVE**, or **MODIFY** your aliases.

4.1 Creating Aliases

To create an alias:

❶ Type **alias** at the dollar prompt **$** and press RET. The **MX_ALIAS>** command list and prompt will appear:

```
$ alias RET
Use one ADD/SHOW/REMOVE/MODIFY/HELP/EXIT
MX_ALIAS>
```

❷ Type **ADD**, a nickname you have chosen, and press RET. **CUNYGS** will prompt you for the address:

```
Use one ADD/SHOW/REMOVE/MODIFY/HELP/EXIT
MX_ALIAS> add bozo RET
Enter mail address for alias BOZO:
```

❸ Type the address in **lowercase**. **Do not include the MX identifier (MX%) or quotation marks (" ") in the address.**

❹ Press RET. **CUNYGS** will prompt you for remarks. For example:

```
Use one ADD/SHOW/REMOVE/MODIFY/HELP/EXIT
MX_ALIAS> add bozo RET
Enter mail address for alias BOZO: bzogc@cunyvm.bitnet RET
Enter associated remarks (if any):
```

❺ Press RET with no comment, or write a comment and press RET, as in the following example:

```
Use one ADD/SHOW/REMOVE/MODIFY/HELP/EXIT
MX_ALIAS> add bozo RET
Enter mail address for alias BOZO: bzogc@cunyvm.bitnet RET
Enter associated remarks (if any): Our friend.  RET
%MXALIAS-I-ADDED, alias BOZO added
```

❻ If you have entered the address incorrectly, MX_ALIAS will respond with an error message. If all is well with your alias, the **MX_ALIAS>** command list and prompt will reappear. Enter the **SHOW** command and press RET to see your alias.

4.2 Alias Help!

❶ Type **HELP** for a summary of MX_ALIAS command procedures:

```
MX_ALIAS> help

      MX_ALIAS -- procedure for manipulating Mail ALIAS names

ADD alias               Add address-equivalent for specified alias-name
EXIT                    Exit from the MX_ALIAS procedure
HELP [topic]            Display HELP information
MODIFY alias            Modify address-equivalent for specified alias-name
REMOVE alias            Remove the specified alias-name
SHOW [string]           List (formatted) alias definition records which
                         contain the specified string (or list all, if
                         "*" or no string at all is specified).
SEARCH [string]         Like SHOW command, but definition records are
                         listed without reformatting.

Additional topics:
    Overview    (Description of the general scheme)
    Commands    (Specify commands on DCL command line or interactively)
    Addresses   (Types of address specifications allowed as equivalence names)

        Use one ADD/SHOW/REMOVE/MODIFY/HELP/EXIT

        MX_ALIAS> exit RET
        $
```

5 GNU Emacs

GNU Emacs is a full-screen, ''self-documenting, customizable, extensible real-time display'' editor first developed at the Massachusetts Institute of Technology Artificial Intelligence Laboratory by Richard Stallman and Guy Steele. Distributed by the Free Software Foundation (FSF), ''GNU Emacs is *free* ... everyone is free to use it and free to redistribute it on a free basis.''† This chapter presents summaries of those commands needed most by the new user.‡

5.1 Introduction

Unlike other text editors, Emacs offers users a total computing environment. Countless operations can be performed in multiple windows: files can be edited, copied, renamed and deleted; text can be formatted for text processors; directories can be listed; programs compiled; UNIX shell commands executed. Macros can be created to facilitate the execution of repetitive commands; abbreviations can be written to reduce repetitive editing tasks.

5.1.1 Emacs Conventions

Emacs employs a variety of command key sequences composed of the Control and ''Meta'' or Escape keys, plus another key or keys. A number of conventions for these command key sequences have been standardized in Emacs documentation. Table 5–1 presents Emacs command key sequence conventions.

Table 5–1 Emacs Command Conventions

Key	Function
C–	Press the Control key.
DEL	Press the Delete or Backspace key.
M–	Press the Esc or ''Meta'' key.
RET	Press the Return or Enter key.
SPC	Press the SPACEBAR.
TAB	Press the Tab key.

Note: If your Escape key does not function properly (or if you do not have an Escape key), which sometimes happens when using a modem to connect to CUNYGS, use C–[(Control left-bracket).

† Richard Stallman, *GNU Emacs Manual*, 3. For more information about GNU Emacs, write to the Free Software Foundation, 1000 Mass Ave. Cambridge, MA 02138.

‡ Future versions of this document will contain a more detailed discussion of the GNU Emacs display editor.

5.2 Getting Started

To access Emacs, type **emacs** at the command prompt and press **RET**. A blank Emacs **scratch* buffer* window will open on your screen. Buffers are temporary storage areas for text. All editing is done in buffers, then saved to files. The Emacs window is composed of four functional areas:

❶ The ''buffer'' is the area in which you edit text.

❷ The ''point,'' represented by the ''cursor,'' marks your position in the buffer.

❸ The ''mode line,'' located near the bottom of the screen, displays information about your Emacs session, including the buffer name, the name of major and minor modes associated with the buffer, the position of the cursor in the buffer, and the modification status.

❹ The ''minibuffer,'' also known as the ''echo area,'' located beneath the mode line, prompts you for commands and reports status information.

5.2.1 Issuing Emacs Commands

The Emacs editor is written in a dialect of the LISP programming language called, not surprisingly, ELISP. Emacs commands are LISP symbols named after functions defined to perform specific tasks. Command key sequences are ''bound'' to these symbols. Thus to find and read a file in an Emacs buffer, you can type

```
M-x find-file
```

or you can type

```
C-x C-f
```

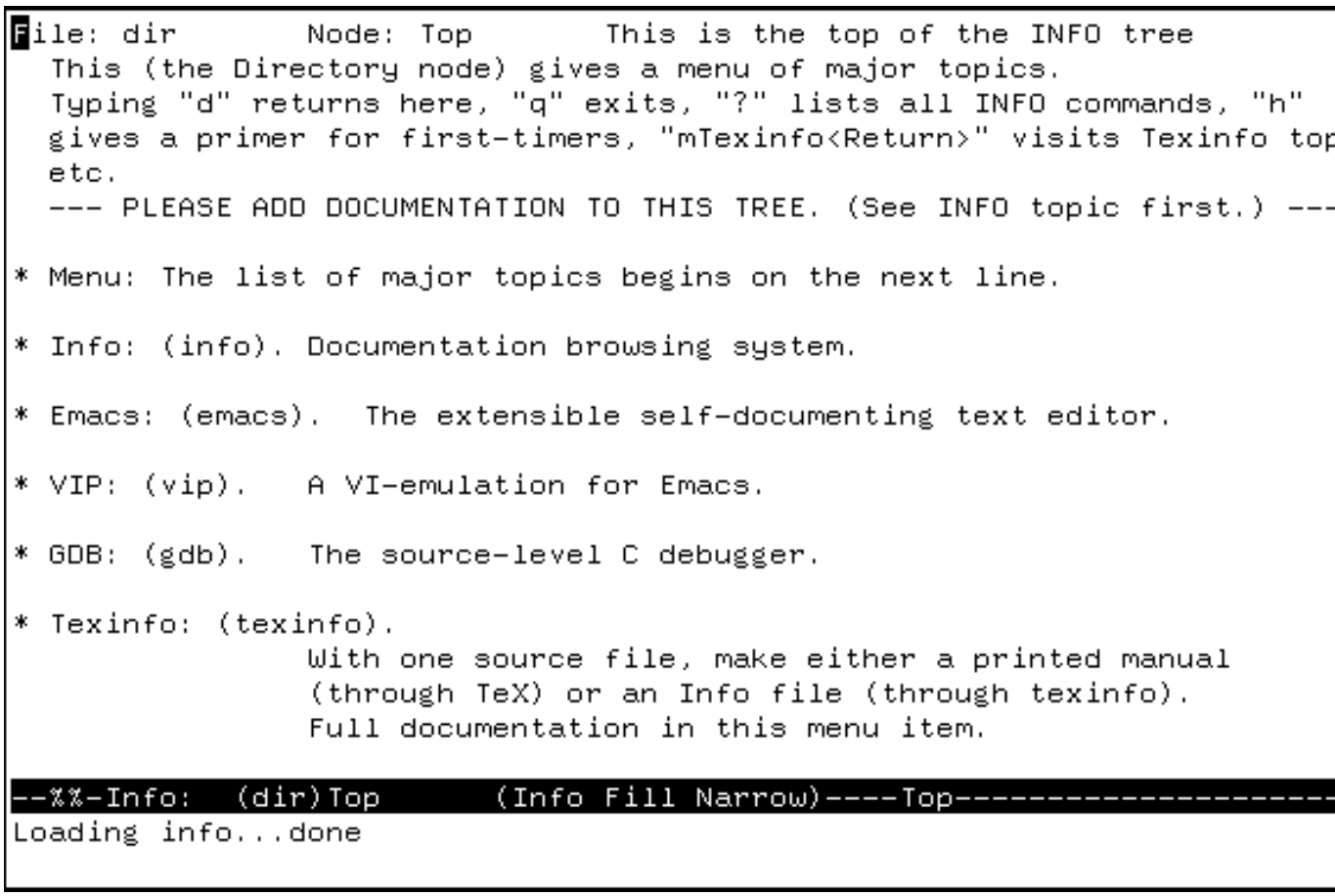
because the command key sequence **C–x C–f** is bound to the **find-file** command. While key bindings can be changed to suit the needs of a particular user or operating system, the function that performs the command remains the same.

To issue an Emacs command using the Control key, press **C–** and the following key *simultaneously*. For example, to issue the ''find-file'' command (**C–x C–f**), press **C–** and **x f** at the same time.

To issue an Emacs command using the Escape key, press **M–**, *release it*, then press the following key.

''Command line completion'' is one of the great advantages of GNU Emacs. For example, after typing the first few letters of a filename in response to the **C–x C–f** command (find-file), press TAB. Emacs will complete the filename, create a ''completion list'' if the letters indicate more than one file, or complain if there is ''No match.''

Figure 5–1 A GNU Emacs Buffer



5.2.2 The .emacs File

Although Emacs will run properly without an initialization file (often called a ''dotfile''), it is always better to have a *.emacs* file in your home directory. The Network Operations group has provided an excellent *.emacs* file. To copy this file into your top-level directory (known as SYS$LOGIN), use the following command *as written*:

```
cop SKEL:.EMACS SYS$LOGIN RET
```

Note: It beyond the scope of this document to explain the significance and the syntax of the *.emacs* file; nevertheless, from time to time I will offer a line of code which, if entered in your .emacs file, will make Emacs easier to use.

5.3 Edit Commands

Table 5–2 lists command key sequences used to move the cursor in buffers.

Table 5–2 Cursor Commands

Sequence	Command	Cursor Movement
C–f	forward-char	Forward one character
C–b	backward-char	Back one character
C–p	previous-line	Up one line
C–n	next-line	Down one line
C–a	beginning-of-line	To beginning of line
C–e	end-of-line	To end of line
C–v	scroll-up	Scroll forward one screen
M–v	scroll-down	Scroll backward one screen
M–f	forward-word	Forward one word
M–b	backward-word	Back one word
M–a	backward-sentence	Back one sentence
M–e	forward-sentence	Forward one sentence
M–(	backward-paragraph	Back one paragraph
M–)	forward-paragraph	Forward one paragraph
M–<	beginning-of-buffer	Back to beginning of buffer
M–>	end-of-buffer	Forward to end of buffer

Table 5–3 presents command key sequences used to manipulate files in buffers.

Table 5–3 File Commands

Sequence	Command	Action
C–l	recenter	Redraw the screen display
C–x C–f	find-file	Display file in buffer
C–x i	insert-file	Insert another file at the cursor point
C–x C–w	write-file	Write contents of buffer to file
C–x C–s	save-buffer	Save buffer contents to file
C–x s	save-some-buffers	Save buffer contents to file
C–x C–c	save-buffers-kill-emacs	Quit Emacs

Note: Depending on your terminal emulation, the standard key binding for the ‘‘save-buffer’’ command (C–x C–s) may not function

properly, because the control key sequence <CTRL/s> is used to freeze the screen. Not to worry. To save the contents of a buffer to a file, use the ''save-some-buffers'' command: first type C–x followed by an s, as listed in the table above. Emacs will ask you to confirm the save in the minibuffer. Type y and the file will be saved to disk.

Table 5–4 presents command key sequences used to manipulate buffers.

Table 5–4 Buffer Commands

Sequence	Command	Action
C–x b	switch-to-buffer	Move to specified buffer
C–x o	other-window	Move cursor clockwise to another window
C–x 4 b	switch-to-buffer-other-window	Move to buffer in another window
C–x C–b	list-buffers	Display buffer list
C–x k	kill-buffer	Delete specified buffer
C–x 0	delete-window	Delete current window
C–x 1	delete-other-windows	Delete all but current window

Table 5–5 presents command key sequences used to format text.

Table 5–5 Formatting Commands

Sequence	Command	Action
M–q	fill-paragraph	Format paragraph
M–g	fill-region	Format region
C–u M–q		Justify paragraph

5.3.1 Search and Replace

Emacs offers a variety of methods to search and replace text, including simple searches of words and phrases, ''incremental'' searches, which begin with the first character of the search text, ''regular expression'' or ''pattern matching'' searches, and ''query-replace'' searches, which request confirmation before replacing the found text with new text specified by the user.

Table 5–6 presents command key sequences used to search for character strings in buffers.

Table 5–6 Search Commands

Sequence	Command	Action
C–s Esc C–w	word-search-forward	Search forward for word

Table 5–6 (Cont.) Search Commands

Sequence	Command	Action
C–r Esc C–w	word-search-backward	Search backward for word
C–r	isearch-backward	Search backward to beginning of buffer
C–s	isearch-forward	Search forward to end of buffer
M–%	query-replace	Search forward and wait for confirmation of replacement

As stated above, **C–s** is used to freeze the screen. The most commonly used search command is ''isearch-forward'', bound to **C–s**. To avoid this problem, use the command name when specifying a forward search, as follows:

```
M-x isearch-forward
```

If typing ''**M–x isearch-forward**'' seems tedious, there is a more efficient way to perform a forward incremental search: create a key binding for the command. This is done by adding a line of ELISP code in your *.emacs* file. For example, if you would like to bind **M–s** to the ''isearch-forward'' command, insert the following line *as written* in your *.emacs* file:

```
(define-key global-map "\M-s" 'isearch-forward)
```

5.3.2 Cut and Paste

To ''cut and paste'' in Emacs parlance is to ''kill and yank''. Text can be deleted by character, word, line, region, and buffer. (A ''region'' of text is a section ''marked'' or selected for various operations, such as deletion.) Deleted words, lines, regions, and buffers are placed in a ''kill ring,'' where they can be recovered with a ''yank'' command.

To mark text for deletion, place the cursor at the beginning of the text you wish to delete and enter the **C–SPC** or **C–@** command. The message, ''Mark set,'' will appear in the minibuffer. Move the cursor to the end of the text to be deleted and enter the **C–w** command. The text region will disappear into the kill ring, where it will stay until the kill ring is full, or until you end your Emacs session. If you wish to yank the deleted text elsewhere in the current buffer, move the cursor to the desired point and enter the **C–y** command. To yank the text in another file, open the file with the **C–x f** command and yank the text with **C–y**.

By default, the kill ring contains 30 deletions. The ''yank-pop'' command (**M–y**) is used to retrieve those deletions from the kill ring. **M–y** replaces the most recent yank with the yank that precedes it in the kill ring. The ''yank-pop'' command can be repeated in order to move through the kill ring. **M–y** is helpful when trying to choose between adjectives; for example, if you have deleted ''dark and stormy'' from the phrase, ''It was a dark and stormy night,'' and replaced it with ''hot and steamy,'' then

replaced that with ''cool and breezy,'' you can use the ''yank-pop'' command to repeat each adjectival phrase in sequence until you find the one that best expresses your idea.

Note: Marked regions are invisible; other than the ''Mark set'' message in the minibuffer, there is no indication that a region has been marked. If you would like to verify the marked region, use the C–x C–x command, ''exchange-point-and-mark.'' The cursor will move to the beginning of the region. Repeat the C–x C–x command and the cursor will move back to the end of the region.

Table 5–7 presents command key sequences used to mark, kill, and yank text.

Table 5–7 Kill and Yank Commands

Sequence	Command	Action
C–x u	advertised-undo	Undo last edit command
C–g	keyboard-quit	Cancel current command
DEL	delete-backward-char	Delete previous character
C–d	delete-char	Delete the character under the cursor
M–d	kill-word	Delete the word under the cursor
C–k	kill-line	Delete from the cursor to line's end
C–w	kill-region	Delete marked region
M–w	copy-region-as-kill	Copy marked region into kill ring
C–y	yank	Paste deleted text
M–y	yank-pop	Paste most recent deletion
C–SPC	set-mark-command	Mark beginning or end of region
C–@	set-mark-command	Mark beginning or end of region
M–h	mark-paragraph	Mark a paragraph
C–x h	mark-whole-buffer	Mark entire buffer
C–x C–x	exchange-point-and-mark	Move cursor to begining or end of region

5.4 Emacs Help

Emacs offers extensive online help, including an excellent tutorial.

Table 5–8 Help Command Key Sequences

Sequence	Command	Action
C–h	help-command	Begin help command
C–h i	info	Display INFO menu
C–h ?	help-for-help	Describe help command
C–h t	help-with-tutorial	Begin interactive tutorial
M–x doctor		Call online psychoanalyst

5.5 Emacs Documentation

A number of fine manuals about GNU Emacs are commercially available, some of which are listed here:

❶ Richard Stallman's *GNU Emacs Manual* (Free Software Foundation, 1986)

❷ *Learning GNU Emacs* (O'Reilly & Associates, 1992)

❸ *GNU Emacs: UNIX Text Editing and Programming* (Hewlett Packard, 1992)

A LOGIN.COM

The following example presents a typical LOGIN.COM file, based on the LOGIN.COM located in the SKEL subdirectory. Commands are defined with ''qualifiers'' that modify command behavior. For more information about commands and command qualifiers, see the *VMS General User's Manual*.

```
$!
$! SAMPLE LOGIN.COM
$!
$! The next few lines tell the VAX to look for a MAIL Alias file.
$! Mail aliases simplify long addressses in MAIL.
$!
$ HAVEALIAS = F$PARSE( "MX_ALIASDEF","SYS$LOGIN:.COM")
$ IF F$SEARCH(HAVEALIAS) .EQS. "" THEN GOTO REST
$ @SYS$LOGIN:MX_ALIASDEF.COM
$ REST:
$!
$! ADD YOUR OWN SYMBOLS AND DEFINITIONS BELOW THIS LINE.
$!
$! LOGIN.COM symbols and definitions must follow a dollar sign ($).
$! An exclamation point (!) must precede any explanations.
$!
$ SET TERMINAL/DEVICE_TYPE=VT100  ! VT100 terminal emulation
$ define emacs_term "vt100" ! EMACS terminal definition must be in lowercase.
$! Note: The .EMACS init file is located in the SKEL subdirectory.
$!
$ mail :== mail/edit=(send,reply,forward)  ! Invokes the EDT editor in MAIL
$!
$ ed*it :== edit/edt/command=sys$login:edtini.edt ! Invokes the EDT editor
$! Note: A sample EDTINI.EDT init file is located in the SKEL subdirectory.
$!
$ cd :== set def  ! UNIX and DOS command used to change directories.
$ cop :== copy/log
$ del :== delete/confirm/log  ! Asks for confirmation of deletions
$ dir :== dir/size/acl/protection  ! Includes file size and protection mask
$ pur :== purge/log
$ ren :== rename/log
$ ty :== type/page  ! Scrolls screen by screen
$!
$! LOGICAL NAMES
$!
$ DEFINE HOME USERS:SYS$LOGIN
$!
```

To copy the SKEL LOGIN.COM to your default login directory, use the **COPY** command, as follows:

```
$ COPY skel:login.com sys$login RET
$
```

Follow the same procedure to copy the .EMACS and EDTINI.EDT init files from the SKEL subdirectory to your default login directory.

B Gopher

The Gopher Information Server provides easy access to online databases, libraries, and computer systems located all over the world.

To invoke the Gopher Information Server, type **gopher** at the dollar prompt ($) and press RET, as in the following example:

```
$ gopher RET
            Internet Gopher v0.6 Copyright 1991 Univ. of Minnesota
                                Root Directory

   -->   1.  About CUNY Gopher Server.
         2.  About Graduate School at CUNY/
         3.  About New York City/
         4.  Documentation Online/
         5.  Finding People/
         6.  Libraries and Related Stuff/
         7.  Lots of interesting stuff (from MSEN Inc)/
         8.  Other Gopher and Information Servers/
         9.  Weather/



Press '?' for Help, 'q' to QUIT, 'u' to go Up          Page: 1/1
```

Gopher directories are chosen with the up and down arrow keys. Note the instructions at the botton of the display. In the above example, the root directory, ''About CUNY Gopher Server,'' is chosen. Press RET and the following screen will be displayed:

Gopher

Last update: 10/31/92 Next update: 11/92

Welcome to the Graduate School and University Center of CUNY
GOPHER SERVER
[SAVE A TREE FEED A GOPHER PROJECT]

A "gopher" is a distributed document delivery service. It allows a neophyte user to access various types of data residing on multiple hosts spread over many domains spanning countries and continents in a seamless fashion. This is accomplished by presenting the user a hierarchical arrangment of documents and by using a client-server communications model.

Gopher code and documentation is distributed by U of Minnesota. Obtain by using Gopher or anonymous FTP from:

boombox.micro.umn.edu in /pub/gopher

The information database for the Graduate Center (short for Graduate School and University Center of City University of New York) server is in its infancy now, and should be considered experimental during this process. If you want any information service or have suggestions please feel free to send email to

gopher@netops.gc.cuny.edu
gopher-master@gopher.gc.cuny.edu

Under New York City: Bookstores Guide
Theatre Guide
Hotel Information
Facts about New York City

This gopher is enhanced and maintained by the Network and Operations Staff during off-hours. The work on this project is totally on volunteered time -- mostly on Saturdays.

Interested people are welcome to drop by and chat about this and other projects with the staff after 5:00 PM on week-days and on Saturdays in either

Rm 302A, 302B or Rm 303 in the Computer Center.

Press RETURN to continue, s to save, or p to print:

C Accessing CUNYGS from the Grace Bldg.

The Computer Center Network Operations group (NETOPS) provides high speed modem access to **CUNYGS** for PC users located in the Grace building. ProComm, a menu-driven telecommunications software, is installed with the System 85 access service. The following code example presents a command file users can use to facilitate access to **CUNYGS**.

```
EMULATE VT100
SET BAUDRATE 19200
SET PARITY EVEN
SET DATABITS 7
SET DUPLEX HALF
BACK:
BREAK
BREAK
PAUSE 1
TRANSMIT "^M"
WAITFOR "DIAL:" 3
IF NOT WAITFOR
GOTO BACK
ENDIF
TRANSMIT "5050!"
SET PARITY NONE
SET DATABITS 8
SET BAUDRATE 19200
SET DUPLEX FULL
WAITFOR "LOCAL>" 3
TRANSMIT "^M"
WAITFOR "Local>"
TRANSMIT "C CUNYGS^M"
```

To use this command file:

❶ Using the DOS editor or a word processor, copy this command file *exactly as written*.

❷ Name the file *VAX5050.CMD*.

❸ Save the file as an ASCII text.

❹ Copy the file into the **PROCOMM** directory located on the **C:** drive.

❺ Move to the **PROCOMM** directory.

❻ Type **procomm /fVAX5050.CMD** to access **CUNYGS**, as follows:

```
C:\> cd procomm RET
C:\PROCOMM\> procomm /fVAX5050.CMD RET
```

Note: Press ALT F5 for a list of available command files.