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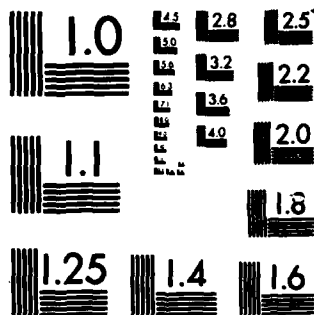              COMPUTER PROGRAM(U) NAVAL POSTGRADUATE SCHOOL MONTEREY
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# NAVAL POSTGRADUATE SCHOOL
## Monterey, California

# THESIS

DEFENSE DATA NETWORK/TOPS-20 TUTORIAL
AN INTERACTIVE COMPUTER PROGRAM

by

Mark Klause Herman Herkert
and
Sheri Lynn Smith

December 1985

Thesis Advisor:          Gary K. Poock

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Defense Data Network/TOPS-20 Tutorial
an Interactive Computer Program

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Submitted in partial fulfillment of the
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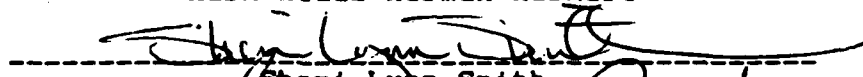(Command, Control and Communications)

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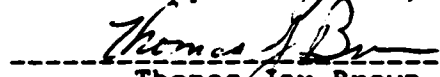
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Sheri Lynn Smith
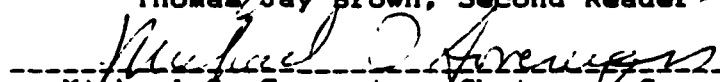
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# ABSTRACT

The DDNTUT program is an interactive tutorial, located on the ISIA host computer in Marina del Rey, California. The program is designed to first acquaint the new user on the Defense Data Network with the TOPS-20 operating system and its executive level commands. Following this, the user is taken step by step through nine different programs available on TOPS-20, knowledge of which is integral to effective use of the network. The user can, at any time, quit the tutorial, return to previously studied at sections, and/or skip sections he may be familiar with.

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## I. HISTORY OF THE DEFENSE DATA NETWORK

A. INTRODUCTION

The Defense Data Network (DDN), an approaching world-wide military data communications networking system, was founded by and remains under the aegis of the Defense Communication Agency (DCA) for the Department of Defense (DoD). The DDN is not one, but rather several networks, with a wide variety of compatible hardware and software which allows interoperability and communications. The most commonly used of these networks are the ARPANET (Advanced Research Projects Agency Network), the MILNET (an unclassified operational Military Network) and the MINET (Movement Information Network, which is relatively new.

A look into how these networks and others of a similar nature came into existence must, perforce, start with the development of the concept of "packet switching."

B. PACKET SWITCHING

Packet switching is a means of handling data being transmitted through the various communication channels or linkages within a network. The theory is simple: local Interface Message Processors (IMPs) break up or subdivide the messages, files, programs, etc., being transmitted, into smaller "packets" which are then treated as individual

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messages, all labeled and sequentially ordered as part of
the larger message. Located throughout the network are
"switching nodes", which receive each packet and check for
and correct any errors or glitches which may have occurred
during transmission. The node will then either collect and
order all of the separate packets of a message before for-
warding the completed whole to the intended recipient, or
will simply forward each individual packet on as it is
received and corrected. (See Figure 1.1.)

Packet switching is highly cost effective: switching
nodes are completely automated, as well as reliable and
inexpensive. Easy to install and keep up, there are now
over a hundred of them scattered across the USA, and
spreading rapidly throughout Europe and the Far East.
Encryption of the system to permit vastly increased
classified material handling capability has been budgeted
for and is more slowly being incorporated throughout the
system, with full online capabilities expected by the late
1980s.

C. ARPANET

The first of the packet switching networks was devel-
oped under a 1969 program run by the Defense Advanced Re-
search Project Agency (DARPA). The experimental network
thus conceived and put into operation was dubbed ARPANET.
The network became a major success in the rapid, reliable,

Figure 1.1

7
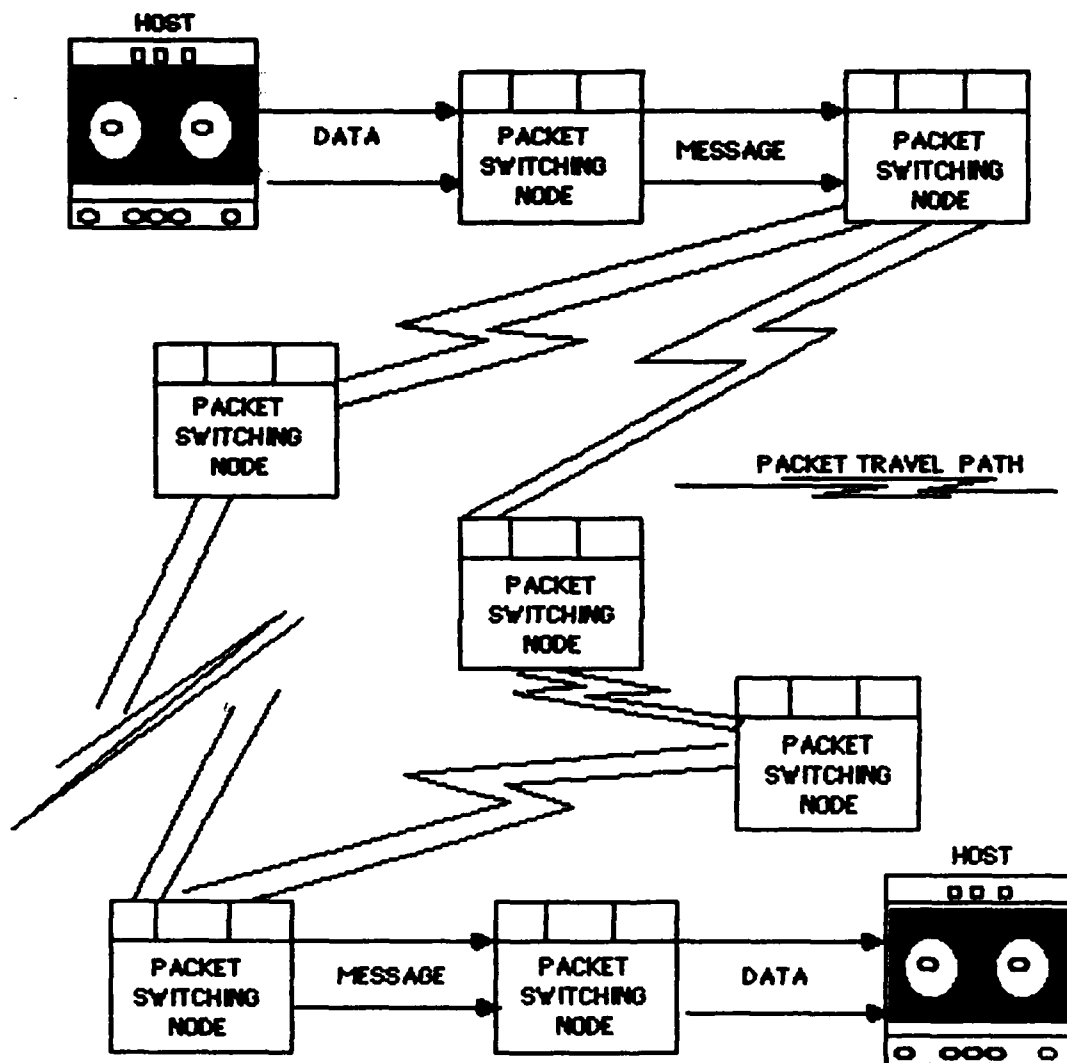
and inexpensive sharing of data, ideas, theories, resources, and software. By 1975, a considerable number of operational users as well as researchers and experimenters had been authorized access to the net, and control of the asset was shifted to the Defense Communication Agency. Both military and civilian research projects are supported by ARPANET. The knowledge and experience, tools and services developed over the years have formed the basis for most if not all packet switching networks, both commercial and military, currently under development or in use today.

D. AUTODIN II

A DoD study initiated in 1974 predicted such imminent major advances and increases in the use of computer technology by the military services that a decision was made to develop a packet switching network dedicated to and internal to the DoD itself. This network was to have the full heterogenous hardware and software capabilities already found in ARPANET, and was, additionally, to have the added features of standard military message precedence handling and encrypted transmission for classified material.

In 1976, the contract for this new network was awarded to Western Union and given the name AUTODIN II. (AUTODIN I is the Western Union message switching network currently leased by the government since the early 1960's). Between 1976 and 1982, however, improvements in technology and

increased cost conciousness on the part of the government, coupled with an added emphasis on redundancy and survivability, resulted in the government terminating the AUTODIN II contract and the subsequent development of the DDN under the DCA.

E. FORMATION OF THE DDN

DoD, in 1979, began interconnecting a number of its isolated computer networks through internet protocols resulting in a series of node computers linked by high-speed telephone lines. This was to become the "backbone" of the DDN. By 1983 ARPANET had grown to include over 300 computers, and was woefully inadequate in its ability to accommodate the increasing numbers of military would-be ARPANET users. Thus, in September 1984, ARPANET was officially divided into two separate unclassified networks, with military research and development remaining under the ARPANET heading, and control reverting to DARPA, while operational military communication uses were directed to the newly designated MILNET, which remained under DCA control. Electronic mail can still be sent between the two networks, but, as security safeguards are added to the MILNET, traffic will increasingly be limited and controlled by so-called "gateways".

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## II. AN OVERVIEW OF THE DEFENSE DATA NETWORK

### A. INTRODUCTION

The DDN is envisioned as a worldwide unified packet switching network dedicated to meeting the data communication requirements of the DoD. The network is subdivided into two functional areas: (1) the network backbone, comprising the trunk circuits and switching nodes, and (2) the access network, comprising local circuits and interfacing equipment allowing individual authorized users to connect to the backbone. TOPS-20 is one of several timesharing operating system in current usage on the DDN. Additional information on TOPS-20 can be found in the <DOCUMENTATION> directory, as noted in the tutorial.

### B. THE BACKBONE

The DDN backbone (IMPs and TACs) will eventually consist of some 200 nodes located at some 100 sites. Again, as mentioned earlier, redundancy and survivability are of key interest to DoD. Most of the transmission trunks will be via leased landline circuits, although some satellite transoceanic links are already in operation. (See Figure 2.1.)

### C. THE ACCESS NETWORK

Individual user terminals normally access the DDN via a host computer, which is in turn connected to the

10
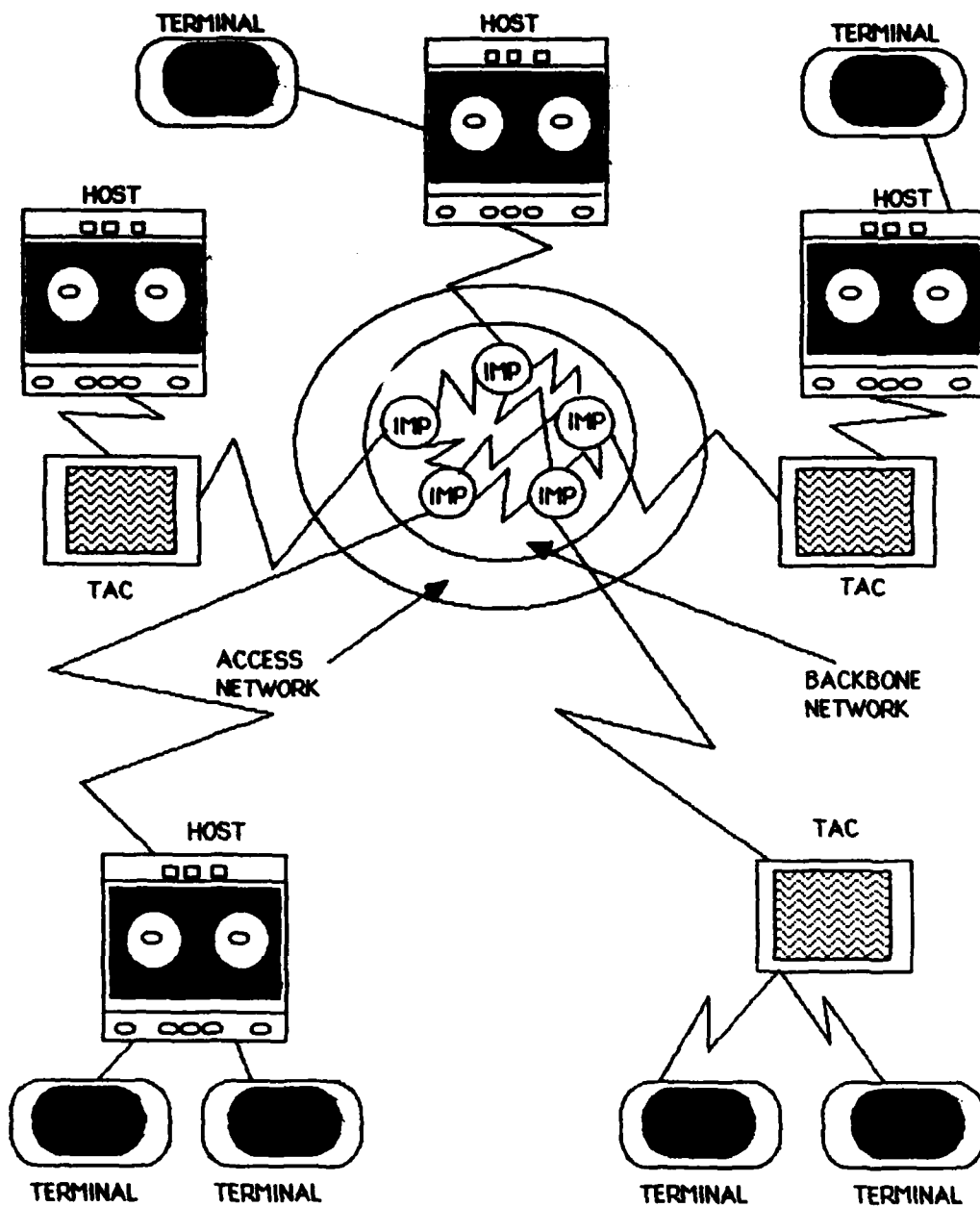
Figure 2.1

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aforementioned IMP. It is also possible, however, to connect a hardwired or dial-up terminal to the DDN via a Terminal Access Controller (TAC). (See Figure 2.2.)

Each host computer has a hostname and address as its primary means of identification. Additionally, each network has a network address associated with it. While hostnames (usually menemonic acronyms) are all that is necessary for sending electronic mail around the net, should you access the net via a TAC, you must use the equivalent numerical host address instead.

Examples of hostnames and addresses are:

| Host address | Host name | Location | Network type |
|---|---|---|---|
| 24.1.0.7 | MINET-LON-TAC | DCA London | MINET |
| 26.3.0.16 | AMES-VMSB | NASA, Moffet Fld, CA | MILNET |
| 10.0.0.15 | ROCHESTER | UNIV of Rochester, NY | ARPANET |

Figure 2.2

13
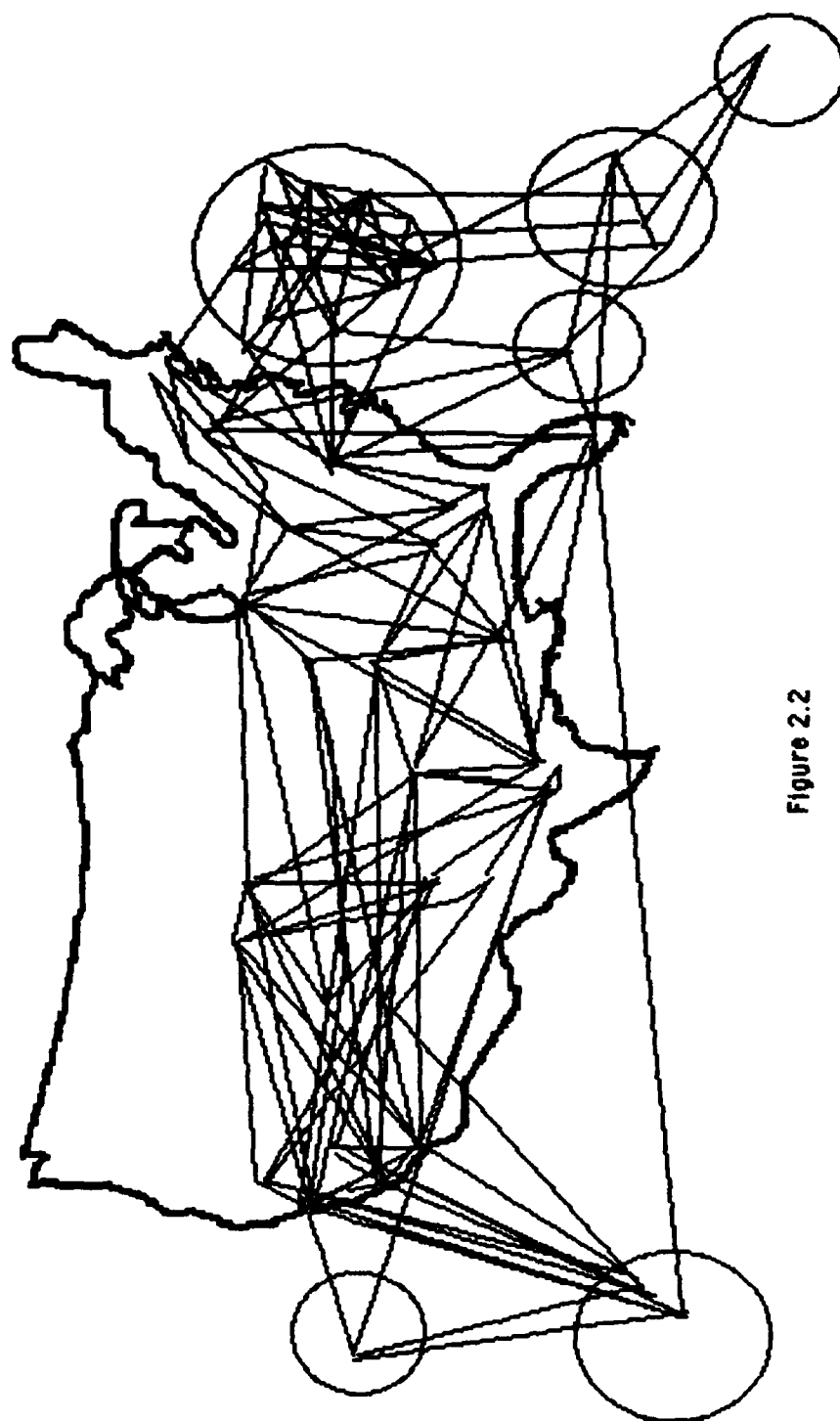
APPENDIX A

USER'S GUIDE

TO THE

DEFENSE DATA NETWORK/TOPS-20 TUTORIAL

# TABLE OF CONTENTS

# USER'S GUIDE TO THE DDN/TOPS-20 TUTORIAL

This User's Guide to the Defense Data Network/TOPS-20 Interactive Tutorial presupposes that the user has worked or is working through the DDNTUT.FOR program. Access to the program is gained by entering the follwoing at the "@" prompt:

### EXECUTE <DECAIDS> DDNTUT.FOR

Compilation of the program, if required, will occur automatically. Once the program has been loaded by the system, you will see the opening line "WELCOME TO THE DDN", and you are off and running.

This guide is intended to serve strictly as a reference manual for users of the tutorial. It provides short descriptions of the Executive Level commands and the nine system level programs the user encounters while working through the tutorial.

Examples are not provided herein, as that is the purpose of the tutorial itself. Should the user remain uncertain regarding the correct procedure to follow in utilizing a system program, he/she is encouraged to refer to the tutorial.

At the end of this Guide is a recap of the "Where To Go From Here" portion of the tutorial. Users who wish to increase their knowledge of the TOPS-20 operating system and/or the Defense Data Network are urged to utilize these sources.

NOTE: Filename, Filetype, and Generation Number are abbreviated: FN.FT.NU respectively throughout this User's Guide and the tutorial.

# EXECUTIVE LEVEL COMMANDS

The Executive Level (EXEC) of the TOPS-20 operating system is entered after you log on or after execution of system routines, and is noted by the display of the "@" prompt. Commands here fall into three categories:

1. Cursor Commands
2. Directory-Related Commands
3. System-Related Commands

Notes:

1. The " ^ " character refers to the control (CTRL) key.
2. ESC refers to the escape key.
3. <CR> refers to the carriage return or enter key.
4. DEL refers to the delete dey.

## CURSOR COMMANDS

| KEY | USE(S) |
|-----|--------|
| ESC | Completes a command or Filename once you have typed enough for the system to recognize your intentions are. |
| CTRL | Used with another key to enter a command; must be held down while the other key is typed. |
| ^C | Used to abort a partially completed command or to stop printing something you don't want to see. to see. Will return you to the EXEC level if you are not already there. |
| ^T | Used to show that the system is still running. |
| ^S | Freezes typeout on the screen and acts as a no-scroll key. |
| ^Q | Resumes typeout on screen after use of ^T command. |

| | |
|---|---|
| @ | Prompt for the EXEC level. Must be typed twice to enter it into text while in XED and most other programs if accessing your host through a TAC. |
| DEL | Deletes characters from right to left. |
| ^O | Stops terminal output. |
| ^W | Deletes words from right to left. |
| ^Z | End-of-file. Used whenever you have finished entering data, text, messages, etc. |
| <CR> | Carriage return. Confirms a given command and permits execution of the command. |

## DIRECTORY-RELATED COMMANDS

A compete listing of these commands can be seen by typing "?" after the "@" prompt. The following is a listing of those most often used:

| COMMAND | USE(S) |
|---|---|
| DIRECTORY | Or "DIR<CR>"; lists the names of all your files. |
| TYPE | Types the contents of a file. |
| APPEND | Appends one file to the end of another. |
| ARCHIVE | Places a file in off-line storage. |
| DELETE | Deletes a file from your directory. |
| UNDELETE | Restores DELETEd files back to your directory, unless you have expunged or logged off or sometimes if the system crashes. |
| EXPUNGE | Permanently erases all DELETEd files. |
| SET DIR PASS | Allows you to change your password. |
| PROTECTION | A six digit number which restricts access to any file in your directory. 775200 is the default. For more info, type HELP PROTECTION at the EXEC level. |

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## SYSTEM-RELATED COMMANDS

| COMMAND | USE(S) |
|---|---|
| SYSTAT | Used to see everyone on a host. To see if a particular user is up on the host, type SY <USERNAME> <CR>. The system will respond with a job number, etc., if the user is on the host or with just a "0" if the user is not up. |
| FINGER | Used to find out information about a specific user and is invoked by typing FINGER <USER-NAME> <CR> at the EXEC prompt. |
| ATTACH | Attaches a job to your current job. |
| TER NO RAISE | Makes your terminal accept both upper and lower case letters. |
| INFO MAIL | Asks system check for new messages. |
| INFO DISK | Lists information about your current page allocation. |
| TALK TO < > | Creates a communication link with another specified user, if on-line. If you are LINKed to, remember to type a ^C to place a hold on whatever it is you were doing before responding to the LINK. Use the symbol ; or ! to preface each line of type. |
| BREAK | Either individual LINKed can type this to terminate the link. |
| CONTINUE | Restores a user, following a LINK, to the place where a ^C was typed. |
| REFUSE | Type this in your LOGIN.CMD file if you do not wish to be interrupted by anyone LINKing to you. |
| RECEIVE | Type this in your LOGIN.CMD file if you don't mind being interrupted (receive is also the default). |

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# MSG

MSG is a program which allows the user to create, send, file and read messages, referred to also as mail. A listing below provides the commands which may be used within MSG. They may also be seen from within MSG by typing a "?" after the MSG prompt, which appears as "<-". To enter MSG, type MSG at the EXEC prompt.

## MSG COMMAND LEVEL COMMANDS

COMMAND    USE(S)

| | |
|---|---|
| A | Answer a message |
| B | Back up to previous message (also ^ or ^H) |
| C | Current message |
| D | Delete a message |
| E | Exit and update message file |
| F | Forward a message |
| G | Go to mesage number < > |
| H | Headers   (HA:  Headers ALL) |
| I | Inclusion of length of header |
| J | Jump into lower fork |
| K | Koncise - provide shorter prompting |
| L | List of messages |
| M | Move message into a file (deletes it as a message) |
| N | Next message number |
| O | Overwrite old file |
| P | Put a message into a file (does not delete it as a message) |
| Q | Quit, return to EXEC level without update of MSG file |
| R | Read in a file (specified) |
| S | Send a message |
| U | Undelete a message |
| V | Verbose - provides more prompting |
| W | Write file sorted by message arrival time |
| X | XED - enter XED |
| Z | Zap profile |
| ' ' | Marks message as examined |
| - | Marks message as not examined |

```
:              Display current time and date
?              Type  with the command character for its  descrip-
                  tion, alone for summary of commands available
;              Comment
^N             Abort message
^Z             Message completion
```

## COMMANDS WITHIN MESSAGE SEQUENCE

If  you ask the system to type out a message (T  - type)
or output headers (H - headers),  etc.,  the system will ask
you  for the message sequence.   Usually,  all you desire is
one message,  so you just type that message number  followed
by a carriage return. If you desire to have several messages
printed you may use the following:

```
10:15      Prints messages 10 through 15
>15        Prints all message numbers greater than 15
6:3        Prints, in reverse order, messages 6 through 3
24,7       Prints message 24, then message 7
```

Other  ways  of responding to the message  sequence  request
from the system are:

```
ESC            Current message
^I             Last sequence specified
A              All message or headers
D              Deleted messages or headers (prior to  EX-
                  PUNGE or EXIT)
E              Examined messages
F              String search of headers
I              Inverse order
L              Last message sequence
N              Not examined messages
O              Old messages/headers
R              Recent messages only
S              String search of subject
U              Undeleted messages
```

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# XED

XED is a text editor; specifically a line editor. It allows you to both create and edit text, one line at a time. Entry into XED is by typing XED at the EXEC prompt. Some helpful definitions are:

Text Buffer       –   Your current working space
Print Buffer     –   Area where KILLed material is sent
Command Level –   Level you are at when entering XED, distinguished by the ":" prompt
Line Number     –   Assigned by XED to each line in your text buffer; for your reference only, not stored in the file

## XED COMMAND LEVEL COMMANDS

**COMMAND     USE(S)**

| Command | Use(s) |
|---|---|
| A | APPEND, used to enter text after the current line |
| B | BACK UP, used to create a back up file |
| C | CHANGE, to modify current line(s) |
| E | EXIT, to leave XED, after a file save |
| F | FIND, to locate a specific letter, word or phrase in text |
| G | GROUP, to join current line with following line |
| I | INSERT, used to enter text before current line |
| J | JAM, puts contents of print buffer after current line |
| K | KILL, places current or specified line(s) into print buffer |
| L | LIST, Outputs entire text buffer without line numbers |
| P | PRINT BUFFER or DUMP, prints contents of print buffer |
| Q | QUIT, leaves XED prior to file save |
| R | READ, puts into XED the contents of specified file |
| S | SEARCH, like FIND, but locates all occurrences |
| T | TYPE, prints current line |
| V | VIEW, prints current and following 15 lines |
| W | WRITE, prints contents of text buffer to a file |
| X | EXCHANGE, used to search for and replace text |
| Z | ZAP, puts your entire file into the print buffer |

| | |
|---|---|
| ' ' | SWITCH DUMP, swaps contents of the print and text buffers |
| , | TYPE CONTEXT, types current line and five lines before and after |
| / | TYPE, types current line |
| × | SENDMSG, uses current text buffer as body of a message |
| $ | LAST LINE, places you at end of file |
| ? | Displays available commands |
| ^J | TYPEs the next line |
| ^Q | ABORTs partially completed commands |
| _ | FORMAT, right justifies a paragraph |

## COMMANDS WITHIN INSERT AND APPEND

| COMMAND | USE(S) |
|---|---|
| DEL KEY | Deletes letter to left of cursor |
| ^R | RETYPES current line, leaving cursor at end |
| ^X | KILLs LINE to left of cursor |
| ^W | DELETEs WORD to left of cursor |
| ^Z | RETURNs you to the command level |

# FILE TRANSFER PROTOCOL (FTP)

FTP is a program employed to transfer files around the net. This can be done from within a host or between hosts. It does necessitate that you have access to a directory on each host...the directory which has the material you desire and the directory to which you wish the material transferred. The following prompts are unique to FTP:

     FTP>                  FTP command level prompt
     USC-ISIE.ARPA>        Sample foreign host command level
                           prompt


## FTP COMMAND LEVEL COMMANDS

| COMMAND | USE(S) |
|---------|--------|
| FTP | Invokes the FTP protocol |
| CONNECT | Connects you from the local host you are logged onto, to the foreign host you are attempting to reach |
| SEND | Sends a file from your local directory to the foreign directory |
| GET | Retrieves a file from the foreign directory to your local directory |
| BYE | Disconnects you from the foreign host |
| DISCONNECT | Same as BYE |
| QUIT | Leaves FTP |
| EXIT | Same as QUIT |

## TELNET (TN)

TN is a program which allows a user on one host to access another host. It actually appears as though you are logged into the foreign host directly from a TAC rather than through your local host. The program also has the advantage of making your control characters do what you expect them to do, even if the control characters on the foreign host are different.

Using TN is actually quite simple. All you need do is type "TN", followed by the foreign host name, after the EXEC prompt. If a pathway to the foreign host is available and the host is up and running, you will connect to the foreign host ready to log into a directory. The standard "@" EXEC prompt will be displayed. Everything from then on is the same as logging into your own directory. When you are finished, simply log out of the foreign directory, and you're back in your own directory at your local host.

Note: If you access the foreign host by using the TN command, and then enter <HOSTNAME> <CR> at the TN> prompt, when you LOGOut of the foreign directory, you will be returned to the TN> prompt. Simply type EXIT <CR> and you'll be back home.

One additional idiosyncracy of TN is, since all control characters are meant to behave on the foreign host as they would on the local host, you cannot use "^C" to return to

your own EXEC level. There is a way around this, however. You simply type "^^C". The proper method of quitting TN, however, is to LOGOut of the foreign host.

# PHOTO

PHOTO is a program which allows you to record, or save, portions of a session on the net. It is invoked by typing "PHOTO <CR>" at the EXEC prompt. You will then be asked to supply a filename to which the PHOTO session is to be recorded. PHOTO will record what you type, as well as the responses from the computer. While you are in PHOTO, everything will work as normal. The control characters remain as before, and you still get the same prompts. What this means is, you cannot use ^C to exit from PHOTO. The normal means of exiting PHOTO is to type the command "POP <CR>" at any EXEC prompt.

There is one control character peculiar to PHOTO: "^Y" is used to suspend the PHOTO session. When you are ready to continue recording, simply input another ^Y.

If you check your directory after POPing out of PHOTO, you will see the new file. You can use the TYPE command or enter XED, READ in the file, and view it. While you are in XED, you can also edit the file.

While you are in PHOTO, the system beeps at you periodically to remind you that you are recording the session. The periodicity of the beeps is set at 30 seconds by default; you may change this, or eliminate them entirely through use of the following command:

```
@PHOTO/INTERVAL:0     Cancels the beeps
@PHOTO/INTERVAL:60    Gives  beeps every  60  seconds,  or
                      whatever interval you prefer
```

And  finally,  a  reminder that you must POP  out  of  PHOTO

before the system will allow you to log out.

# REMIND

REMIND is a program which allows you to create reminders for yourself or others to be sent by the system at a later time, as specified by you. You may schedule a reminder to be sent only once, or as frequently as you like. You may also select whether the reminder will be MAILed (delivered via normal message service), SENT (delivered directly to addressee's screen, however, if the addressee is not logged on, the message is lost forever) or by BOTH methods (recommended).

To use the REMIND program, type "REMIND <CR>" at the EXEC prompt. Use the CREATE command to initiate a reminder message. A variety of prompts will be provided such as who the message is to be sent to, when, how often, how sent, etc. All of these prompts are fairly self-explanatory, but if you get stuck, simply type a question mark.

REMIND is the fastest way to send a message, as it doesn't force you to read the headers of any unlooked-at messages, etc., as with the MSG program.

REMIND COMMAND LEVEL COMMANDS

| COMMAND | USE(S) |
|---------|--------|
| CREATE | Used to CREATE a message |
| DAYTIME | Prints the exact date and EST time |
| DELETE | DELETEs remind messages |
| EXIT | EXITs out of REMIND |

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| | |
|---|---|
| HEADERS | Lists subject line of all your REMIND messages |
| HELP | Gives info about all options; or a specific command |
| MODIFY | Changes the parameters (ex: time msg to be sent) |
| QUIT | Same as EXIT |
| SURVEY | Lists all recent remind messages you have sent |
| TYPE | TYPEs a remind message already looked at |
| UNDELETE | UNDELETEs remind messages |

# INQUIR

INQUIR allows you to enter information into a file which can be read by yourself or others using the "FINGER / VERBOSE <USERNAME> command. INQUIRE is entered by typing "INQUIR <CR>" after the EXEC prompt, following which you type the command "MODIFY <USERNAME> <CR>" where username is your own directory name. The system now will be at its entry level, and will either respond with a >> prompt, if data is already in your file, or with questions if there in no information in the file or in a specific field in the file.

While you are building or modifying an INQUIR file, the normal XED editing commands (DEL key, ^R, ^W, etc.) may be used. ^Z will signal the system that you have completed the file. The REMARKS section of the file allows you to leave short messages for people INQUIRing about you.

When you are at a >> prompt, there are a few commands available which can be useful:

| COMMAND | USE(S) |
|---|---|
| ALL | Allows you to review/change the entire data base. |
| <FIELD NAME> | Allows you to change a specific field |
| SHOW | Shows you the entire data base as it would appear with a FINGER/VERBOSE command |
| EXIT | Exits to the > prompt from the >>, or to @ from >. |

32

# FINGER

FINGER is a program to help locate and identify users on a system. It is called from the EXEC Level by typing "FINGER <CR>". Its main features are personal name and line location output. If you leave a message, called a "plan", in a FINGER.PLAN file, it will print out when someone FINGERs you and you are not logged on. This file is a free-form text file created in XED, and the file protection (SET PROTECTION command) should be at least 775252 to allow all other users to read it.

Calling sequences for FINGER include:

1. @FINGER <USERNAME>
   Prints whatever message user has in their .PLAN file; tells you if user is logged on.

2. @FINGER / <SWITCHES> <USERNAME>      OR
   @FINGER <USERNAME> / <SWITCHES>
   If username is blank, all users at a switch will be summarized alphabetically. If username specified, info about that particular user on that switch is printed in more detailed fashion.

3. OTHER SEQUENCES:

   /DETACHED      Displays detached jobs
   /DIAL-IN       Displays dial-in jobs only
   /HELP          Show this message
   /NO-DETACHED   Suppress display of detached jobs
   /NO-OPERATOR   Suppress display of operator jobs
   /OPERATOR      Display operator jobs only
   /TERSE         Output line job status only
   /VERBOSE       Output plan and mail info, plus INQUIRE
                  database, not including account. <USER-
                  NAME> must be specified.
   /WHOIS         Useful for remote users; displays site
                  dependent info about a specific user.

33

# ELECTRONIC MAIL HOST (EMH)

An Electronic Mail Host, or EMH, is a special kind of host. The only capability an EMH has is sending and receiving messages. To use an EMH, you must be authorized access, and have a directory name and one or two passwords, as required. The passwords change frequently to prevent idle chitchat, user abuse, and large, inexplicable bills.

To access an EMH host, use the TN command. When the connection is established, log on and give passwords just as if you were logging into any directory. There are a number of command options in EMH useful in creating and sending messages, reading, deleting, and filing other messages, etc. They are largely self-explanatory, and bear a strong resemblance to the commands previously discussed for MSG, REMIND, and other programs found on the system. Remember to use a ? if you get stuck.

The following are some unique EMH commands:

| COMMAND | USE(S) |
| --- | --- |
| COMPOSE | Used to create a message. |
| REPLY | Used to reply to a message. |
| .<CR> | Used to end a message when entered alone on a separate line. |

## EMACS

The EMACS text editor portion of the tutorial has not yet been written.

## GRAPH

The GRAPH or graphics portion of the tutorial has not yet been written.

# WHERE TO GO FROM HERE

The following materials serve as excellent sources of information on the TOPS-20 operating systems and sub-systems, including:

HELP, ?, ACTION, DOCUMENTATION, FTP, TN, FINGER, MM, HERMES, XED, EMACS, REMIND, PHOTO, WHOIS, ARCHIVE AND SCRIBE.

```
USER'S  GUIDE TO TOPS-20
WAYNE TURNER
SEPT 1983 & APRIL 1984
USC INFORMATION SCIENCE INSTITUTE
4676 ADMIRALTY WAY
MARINA DEL REY, CALIFORNIA  90291
(213)822-1511 EXT 289
ACTION @ USC-ISI.ARPA


TOPS-20,
CHLOE  SOMMERS  HOLG
AUGUST  1983
USC INFORMATION SCIENCE INSTITUTE
4676 ADMIRALTY WAY
MARINA DEL REY, CA 90291
(213) 822-1511 EXT 289
ACTION @ USC-ISI.ARPA


PROFESSOR GARY POOCK
CODE 55PK
NAVAL POSTGRADUATE SCHOOL
MONTEREY, CA 93943
POOCK@USC-ISI.ARPA
```

The following are informative sources on the creation
of the Defense Data Network, where it's at today and where
it's going:

```
DDN NEW USER GUIDE (NIC 50001)
MARCH 1985
DDN NETWORK INFORMATION CENTER
DDN PROGRAM MANAGEMENT OFFICE
DEFENSE COMMUNICATION AGENCY
WASHINGTON, D.C.
(703) 285-5025
```

Useful addresses:

```
BOLT, BERANEK AND NEWMAN INC.
50 MOULTON STREET
CAMBRIDGE, MASSACHUSETTS 02238
```

```
COMPUTING ANALYSIS CORPORATION
1400 WILSON BLVD, SUITE 1101
ARLINGTON, VA    22209
```

```
DIGITAL  EQUIPMENT  CORPORATION
PO BOX CS-2008
NASUA, NEW HAMPHSHIRE 03061
```

```
DOCUMENT DISTRIBUTION,
USC INFORMATION SCIENCES INSTITUTE
4676 ADMIRALTY WAY, SUITE 1100
MARIA DEL REY, CALIFORNIA   90291
```

```
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
ARTIFICIAL INTELLIGENCE LABORATORY
ATTN:   PUBLICATIONS
545 TECHNOLOGY SQUARE
CAMBRIDGE, MASSACHUSETTS   02139
```

```
UNILOGIC, LTD
160 N. CRAIG
PITTSBURG, PENNSYLVANIA 15213
```

APPENDIX B




MAINTENANCE MANUAL

TO THE

DEFENSE DATA NETWORK/TOPS-20 TUTORIAL

## TABLE OF CONTENTS

```
C
C
C
C          ==========DDN TUTORIAL===============MAIN PROGRAM===============
C          =                                                             =
C          =        AN INTERACTIVE TUTORIAL FOR THE DEFENSE DATA NETWORK =
C          =                                                             =
C          =                LCDR M. K. H. HERKERT, USN                   =
C          =                                                             =
C          =                LT S. L. SMITH-MOREAU, USN                   =
C          =                                                             =
C          =     US NAVAL POSTGRADUATE SCHOOL, MONTEREY, CALIFORNIA      =
C          =                                                             =
C          ===============================================================
C
C
C          ==========PURPOSE=================MAINTENANCE==================
C          =                                                             =
C          = THIS TUTORIAL IS DESIGNED TO INTRODUCE THE NEW USER TO THE  =
C          = COMMANDS AND SYSTEMS IN USE ON THE TOPS-20 VERSION OF THE   =
C          = DEFENSE DATA NETWORK (DDN).                                 =
C          =                                                             =
C          = THIS PROGRAM IS WRITTEN IN FORTRAN AND WILL PERFORM EQUALLY =
C          = WELL ON EITHER A FULL SCREEN VDT OR A SPOOL PAPER TERMINAL. =
C          =                                                             =
C          = QUESTIONS ON THIS PROGRAM AS WELL AS REQUESTS FOR EXTERNAL  =
C          = DOCUMENTATION AND MAINTENANCE SHOULD BE MADE TO PROFESSOR   =
C          = GARY POOCK (POOCK@ISI.ARPA).                                =
C          =                                                             =
C          ===============================================================
C
C
C          ==============INSTALLATION OF PROGRAM=========================
C          = THE FOLLOWING ACTIONS ARE REQUIRED TO INSTALL THIS PROGRAM: =
C          =                                                             =
C          = 1.  PLACE COPY OF "DDNTUT.FOR" IN THE DIRECTORY FROM WHICH IT =
C          =     IS TO BE RUN.                                           =
C          = 2.  EXECUTE THE PROGRAM (EXECUTE DDNTUT.FOR) UNTIL YOU GET TO =
C          =     TO THE INITIAL INTRODUCTION.  THIS COMPILES THE PROGRAM; =
C          =     CREATES A "DDNTUT.REL" FILE.                            =
C          = 3.  SET PROTECTION AS FOLLOWS:                              =
C          =          DIRECECTORY     777740                            =
C          =          DDNTUT.FOR      777700                            =
C          =          DDNFOR.REL      777752                            =
C          =                                                             =
C          = THE PROGRAM CAN NOW BE RUN FROM ANY ACCOUNT ON THE HOST BY  =
C          = THE USER ENTERING:                                         =
C          =         "EXECUTE <DIRECTORY WHERE INSTALLED> DDNTUT.FOR"   =
C          ===============================================================
C
C
C
C
      INTEGER INPUT
      DIMENSION DEM1(1)
```

1

```
        DUM=0
C
C       **** PROVIDE INITIAL INTRODUCTION
C
        TYPE 1600
        TYPE 100
        READ(05,130,ERR=15) DEM1
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
15      TYPE 110
16      TYPE 120
C
C       **** PROVIDE FOR SELECTION OF DESIRED AREA OF INSTRUCTION
C
        READ(05,*,ERR=16) INPUT
        IF(INPUT.LT.1.OR.INPUT.GT.16)GO TO 16
        IF(INPUT.EQ.16)GO TO 500
        GO TO(1,2,3,4,5,6,7,8,9,10,11,12,13,14,17)INPUT
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO HELP, ?, AND ACTION
C
1       CALL INTRO(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR BASIC EXECUTIVE LEVEL COMMANDS
C
2       CALL ELC1(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR ADVANCED EXECUTIVE LEVEL COMMANDS
C
3       CALL ELC2(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO MSG
C
4       CALL AMSG(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO XED
C
5       CALL AXED(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO FTP
C
6       CALL AFTP(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO TN
C
7       CALL ATN(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO PHOTO
```

```
C
8       CALL APHOTO(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO REMIND
C
9       CALL ARMND(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO INQUIRE
C
10      CALL AINQR(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO FINGER
C
11      CALL AFNGR(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO ELECTRONIC MAIL HOSTS (EMH)
C
12      CALL AEMH(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR INTRODUCTION TO EMACS -**CURRENTLY EMPTY**-
C
13      CALL AEMACS(DUM)
        GO TO 15
C
C       ***** SUBROUTINE FOR INTRODUCTION TO GRAPH -**CURRENTLY EMPTY**-
C
14      CALL AGRAPH(DUM)
        GO TO 15
C
C       **** SUBROUTINE FOR BIBLIOGRAPHY
C
17      CALL BILBO(DUM)
        GO TO 15
C
C       **** SIGN-OFF ROUTINE
C
500     TYPE 1240
        TYPE 1370
        READ(05,130,ERR=510) DEM1
510     STOP
520     TYPE 1250
        TYPE 1370
        READ(05,130,ERR=530) DEM1
530     STOP
C
C
C       *****************MAIN PROGRAM FORMATS**************************
C
C       **** INTRODUCTION
C
```

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```
100    FORMAT(//,'                    WELCOME TO THE DEFENSE DATA NETWORK
      *(DDN)',//,'    THE FOLLOWING TUTORIAL IS DESIGNED TO ACQUAINT YOU
      *WITH VARIOUS FEATURES OF',/,' THE NETWORK, PROVIDING INSTRUCTIONS
      *AND ALLOWING YOU TO GAIN SOME DEGREE OF',/,' PROFICIENCY.  THE TUT
      *ORIAL IS INTERACTIVE.',//,' ADDITIONAL SOURCES OF INFORMATION ON T
      8HE DDN ARE LISTED IN THE WHERE TO GO',/,' NEXT SECTION OF THIS TUT
      *ORIALL.',//,' ENTER A "q" TO QUIT, ANY OTHER CHARACTER TO CONTINUE
      *:  ',$)
C
C     **** SELECTION OF AREA OF INSTRUCTION
C
110    FORMAT('    TO BEGIN THIS SESSION, SELECT ONE OF THE FOLLOWING TOP
      *ICS:',//,
      *'      1.   INTRODUCTION (HELP,?,ACTION)',/,
      *'      2.   TOPS-20 EXECUTIVE LEVEL COMMANDS (BASIC)',/,
      *'      3.   TOPS-20 EXECUTIVE LEVEL COMMANDS (ADVANCED)',/,
      *'      4.   MESSAGE PREPARATION, SENDING, READING (MSG)',/,
      *'      5.   LINE EDITOR (XED)',/,
      *'      6.   FILE TRANSFERRING (FTP)',/,
      *'      7.   CONNECTING TO ANOTHER COMPUTER (TN)',/,
      *'      8.   COPYING YOUR WORK (PHOTO)',/,
      *'      9.   REMINDERS TO YOURSELF/OTHERS (REMIND)',/,
      *'     10.   FINDING OUT ABOUT (INQUIR)',/,
      *'     11.   IDENTIFYING YOURSELF/OTHERS (FINGER)',/,
      *'     12.   ELECTRONIC MAIL HOSTS (EMH)',/,
      *'     13.   SCREEN EDITOR',/,
      *'     14.   GRAPHICS',/,
      *'     15.   WHERE TO GO FROM HERE',/,
      *'     16.   QUIT',//)
C
120    FORMAT('    ENTER THE NUMBER CORRESPONDING TO YOUR SELECTION, FOLL
      *OWED BY A <CR>: ',$)
C
130    FORMAT(1A1)
1240   FORMAT(' This terminates the TOPS-20 system tutorial.',//)
1250   FORMAT(' Sorry to see you quit so soon.',//)
1370   FORMAT(' Enter any key: ',$)
1600   FORMAT(////)
       END
C
C
C
```

```fortran
C
C
      SUBROUTINE INTRO(DUM)
C
C     **************INTRODUCTION SUBROUTINE**************************
C     *        PROVIDES INTRODUCTION TO HELP, ? AND ACTION          *
C     ===========================================================
C
      DIMENSION INPUT(1), SLCTN(2)
      TYPE 1600
C
C     **** INTRODUCTION TO SYSTEM HELP AIDS
C
      TYPE 100
      TYPE 200
      READ(05,1400,ERR=10) INPUT
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
C
C     **** INTRODUCTION TO HELP AND ?
C
10    TYPE 105
      TYPE 200
      READ(05,1400,ERR=13) INPUT
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
C
C     **** INTRODUCTION TO DOCUMENTATION AND ACTION
C
13    TYPE 110
      TYPE 200
      READ(05,1400,ERR=15) INPUT
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
C
C     **** DEMONSTRATION
C
15    TYPE 120
      READ(05,1410,ERR=20) SLCTN
      IF(SLCTN(1).EQ.'Q'.OR.SLCTN(1).EQ.'q')GO TO 520
      IF(SLCTN(1).EQ.'HELP '.AND.SLCTN(2).EQ.'     '.OR.SLCTN(1).EQ.
     *'help '.AND.SLCTN(2).EQ.'     ')GO TO 30
      IF(SLCTN(1).EQ.'?')GO TO 40
      IF(SLCTN(1).EQ.'HELP '.AND.SLCTN(2).EQ.'ACTIO'.OR.SLCTN(1).EQ.'hel
     *p '.AND.SLCTN(2).EQ.'actio')go to 50
      IF(SLCTN(1).EQ.'HELP '.AND.SLCTN(2).EQ.'SYSTE'.OR.SLCTN(1).EQ.'hel
     *p '.AND.SLCTN(2).EQ.'syste')GO TO 60
      IF(SLCTN(1).EQ.'QUIT'.OR.SLCTN(1).EQ.'quit')GO TO 500
20    TYPE 135
      GO TO 15
30    TYPE 140
      GO TO 15
40    TYPE 150
      GO TO 15
50    TYPE 160
      GO TO 15
60    TYPE 170
      GO TO 15
```

```fortran
C
C      **** SIGN-OFF ROUTINE
C
500    TYPE 1240
       TYPE 1370
       READ(05,1400,ERR=510) INPUT
510    RETURN
520    TYPE 1250
       TYPE 1370
       READ(05,1400,ERR=530) INPUT
530    RETURN
C
C
C      ***************FORMATS FOR INTRODUCTION SUBROUTINE***************
C
C      **** INTRODUCTION
C
100    FORMAT(12X,'HELP,ACTION,? AND DOCUMENTATION',//,
      *          ' The DDN network, or more specifically the Tops-20 system,
      1 allows the user to',/,' receive help at almost all levels.  The f
      2ollowing is an explanation and',/,' demonstration of commands to r
      3eceive help at the Executive Level, but the first',/,' two may be
      4used at almost any time.',//,
      5' Notes:',//,
      6'    1.  You are in the executive level when you first log on or a
      *fter you have',/,
      7' finished with any of the system routines.  You will know that yo
      *u are in the',/,
      8' Executive Level because the "@" prompt will be displayed by the
      *system.',//
      9,'    2.  Commands may be entered using either upper or lower case
      * letters.',//,
      1'    3.  Commands below are presented within quotes.  This is for
      2emphasis only.',/,' The quotes are not entered.',//)
C
C      **** HELP
C
105    FORMAT(' The HELP Command:',//,
      1' This command, by itself, will give you guidance on how to get mo
      2re in depth',/,' knowledge on a particular subject.  It is invoked
      3 by typing "HELP" after the ',/,' "@" prompt, followed by a carria
      *ge return.',//,
      4' The ? command:',//,' This command, when invoked after the "@" pr
      5ompt, or almost anywhere else,',/,' will give you a menu of approp
      6riate commands from which to select.',//,
      7' The HELP NAME command:',//,' This command provides specific info
      8rmation on the subject named.  It is invoked',/,' by typing "HELP
      9 NAME" followed by a carriage return after the "@" prompt.',/,' "N
      *AME is the subject on which you desire further information.',//)
C
C      **** DOCUMENTATION & ACTION
C
110    FORMAT(' DOCUMENTATION:',//,' DOCUMENTATION provides additional in
      1formation about specific subjects.  To see',/,' the available subj
      2ects, type "DIR <DOCUMENTATION>*.*.*" after the "@" prompt,',/,' f
```

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```
            3ollowed by a carriage return.  To see a specific documentation fil
            4e, enter',/,' "TYPE <DOCUMENTATION>FILENAME.FILETYPE", followed by
            5 a carriage return; FILENAME',/,' and FILETYPE are those as shown
            6in the directory.',//,
            7' ACTION:',//,' Having exhausted the above and still not satisfied
            8, or if you have comments',/,' about the system, etc. you can send
            9 a message to ACTION.  The procedure for',/,' sending a message is
            * covered in the MSG section of this tutorial.',//)
      C
      C     **** DEMONSTRATION SELECTION
      C
120   FORMAT(' To see a demonstration of the above commands, type one of
      1 the following commands',/,' after the "@" prompt, followed by a c
      2arriage return.',//,'    HELP',//,'    ?',//,'    HELP ACTION',//,
      3'    QUIT',//,' @',$)
      C
135   FORMAT(//,' YOU HAVE NOT SELECTED AN APPROPRIATE CHOICE',//)
      C
      C     **** HELP
      C
140   FORMAT(' HELP command ====',//,' The HELP command prints helpful d
      1ocumentation on various system',/,' features.  The "@" is printed
      2by the system.  You type the rest.',/,' of the line followed by ca
      3rriage return.',//,' @HELP NAME',//,' will look for, and print ou
      4t information about the system feature',/,' named in "NAME".  If t
      5his is your first time using this system',/,' please type: HELP SY
      6STEM-MESSAGES',//,' @HELP ?',//,' will give a list of features fo
      7r which HELP is available and',/,' retype @HELP to wait for any ad
      8ditional input.',//,' To see this text again type HELP followed by
      9 a carriage return.',//,' [End of HELP.HLP]',//)
      C
      C     **** AVAILABLE WITH HELP
      C
150   FORMAT(' Command, one of the following:',/,' ACCESS',/,' ADVISE',/
      1,' APPEND',/,' ARCHIVE',/,' ASSIGN',/,' ATTACH',/,' BACKSPACE',/,'
      2 BDDT',/,' BLANK',/,' BREAK',/,' BUILD',/,' CANCEL',/,' CD',/,' CL
      3OSE',/,' COMPILE',/,' CONNECT',/,' CONTINUE',/,' COPY',/,' CREATE'
      4,/,' CREF',/,' CSAVE',/,' DAYTIME',/,' DDT',/,' DEASSIGN',/,' DEBU
      5G',/,' DECLARE',/,' DEFINE',/,' DELETE',/,' DEPOSIT',/,' DETACH',/
      6,' DIRECTORY',/,' DISABLE',/,' DISCARD',/,' DISMOUNT',/,' DO',/,'
      7ECHO',/,' EDIT',/,' ENABLE',/,' END-ACCESS',/,' EOF',/,' ERUN',/,'
      8 EXAMINE',/,' EXECUTE',/,' EXPUNGE',/,' FDIRECTORY',/,' FINGER',/,
      9' FORK',/,' FREEZE',/,' GET',/,' HELP',/,' IDDT',/,' INFORMATION',
      */,' KEEP',/,' KKJOB',/,' KMIC',/,' LIST',/,' LOAD',/,' LOGIN',/,'
      1LOGOUT',/,' MAIL',/,' MAP',/,' MERGE',/,' MODIFY',/,' MOUNT',/,' N
      2AME',/,' NO',/,' ORIGINAL',/,' PLOT',/,' POP',/,' PRINT',/,' PUNCH
      3',/,' PUSH',/,' QDIRECTORY',/,' R',/,' RDIRECTORY',/,' RECEIVE',/,
      4' REENTER',/,' REFUSE',/,' REMARK',/,' RENAME',/,' REPLACE',/,' RE
      5SET',/,' RETRIEVE',/,' REWIND',/,' RUN',/,' SAVE',/,' SET',/,' SKI
      6P',/,' START',/,' SUBMIT',/,' SYSTAT',/,' TAKE',/,' TALK',/,' TDIR
      7ECTORY',/,' TERMINAL',/,' TRANSLATE',/,' TYPE',/,' UNATTACH',/,' U
      8NDECLARE',/,' UNDELETE',/,' UNKEEP',/,' UNLOAD',/,' UNMAP',/,' VDI
      9RECTORY',/,' WDIRECTORY',/,' XPRESS',/,'  or kept fork name,',/,'
      * or "^L"',/,'  or system program name',//)
      C
```

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```
C      **** ACTION
C
160    FORMAT(' The directory  <ACTION>  exists to receive user messages
      1concerning questions,',/,' suggestions,  documentation  or  proble
      2ms  with  subsystem  software,  systems',/,' operation, director
      3ies,  or  terminals.    <ACTION>''s  message file is scanned',/,'
      4constantly during the day, and all requests are acted  upon  by  U
      5ser Services',/,' personnel.',//,' The purpose of this centralized
      6 mailbox is to insure that:',//,'   1.  all comments are readily
      7recognized and acted upon.',//,'   2.  action requests are not de
      8layed in personal message files due to',/,'          unexpected abse
      9nces.',//,' When in doubt as to where your question, suggestion, e
      *tc.  should be sent',/,' to <ACTION>.  Your comments are also welc
      1e.',//,' See MSG section of this tutorial for instructions on send
      2ing a message.',//)
170    FORMAT(' Whenever a user los into TOPS-20, any new system messages
      1 are printed on',/,
      2' on their terminal.  The purpose of these messages is to inform u
      3sers of',/,
      4' changes to the system.',//,
      5' If this is your first session, the system did not display the ne
      6w system',/,
      7' messages to you yet.  On the next session you will see all the s
      8ystem',/,
      9' messages.  There may be a lot of messages because we keep 2 mont
      *hs of',/,
      1' messages on line.  On later sessions you will see only the new m
      2essages.',//)
C
200    FORMAT(' TYPE Q TO QUIT, ANY OTHER CHARACTER TO CONTINUE')
C
C      **** SIGN-OFF ROUTINE FORMATS
C
1240   FORMAT(' This concludes the introduction section.',//)
1250   FORMAT(' Sorry to see you quit so soon.',//)
1370   FORMAT(' ENTER ANY KEY TO RETURN TO THE MAIN MENU: ',$)
1400   FORMAT(1A1)
1410   FORMAT(2A5)
1600   FORMAT(/////)
       END
C
C
C
```

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```
C
C
        SUBROUTINE ELC1(DUM)
C
C       =========BASIC EXECUTIVE LEVEL COMMANDS SUBROUTINE================
C       =    THIS SUBROUTINE EXPLAINS AND DEMONSTRATES BASIC COMMANDS
C       =    USEFUL AT THE EXECUTIVE LEVEL OF THE DDN/TOPS-20 SYSTEM.
C       ==================================================================
C
        DIMENSION INPUT(1)
        DUM=0
        NEXT=0
C
C       INTRO TO CURSOR COMMANDS
C
        TYPE 1600
        TYPE 1100;GO TO 200
15      TYPE 1110;GO TO 200
20      TYPE 1115;GO TO 200
C
C       INTRO TO DIRECTORY RELATED COMMANDS
C
25      TYPE 1120;GO TO 200
30      TYPE 1125
        NEXT=NEXT+1
        READ(05,1400,ERR=35) INPUT
C
C       QUERY IF USER DESIRES DEMONSTRATION
C
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 100
C
C       DEMONSTRATION SUBROUTINES
C
35      CALL DIRECT(DUM)
        GO TO 200
40      CALL TYPE(DUM)
        GO TO 200
45      CALL APPEND(DUM)
        GO TO 200
50      CALL RENAME(DUM)
        GO TO 200
55      CALL ARCHIV(DUM)
        GO TO 200
60      CALL DELETE(DUM)
        GO TO 200
65      CALL UNDEL(DUM)
        GO TO 200
70      CALL EXPUNG(DUM)
        GO TO 100
100     NEXT=12
C
C       INTRO TO SYSTEM RELATED COMMANDS
C
        TYPE 1200
        GO TO 200
```

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```
105    TYPE 1205
       GO TO 500
C
C      QUERY TO SEE IF USER DESIRES TO CONTINUE
C
200    TYPE 1300
       NEXT=NEXT+1
       READ(05,1400,ERR=205) INPUT
       TYPE 1600
       IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
205    GOTO (15,20,25,30,35,40,45,50,55,60,65,70,105) NEXT
C
C      **** SIGN-OFF ROUTINE
C
500    TYPE 1240
       TYPE 1370
       READ(05,1400,ERR=510) INPUT
510    RETURN
520    TYPE 1250
       TYPE 1370
       READ(05,1400,ERR=530) INPUT
530    RETURN
C
C
C      ******FORMATS FOR BASIC EXECUTIVE LEVEL COMMANDS SUBROUTINE*******
C
C      **** LISTING OF EXECUTIVE LEVEL COMMANDS
C
1100   FORMAT(20X,'EXECUTIVE LEVEL COMMANDS (BASIC)',//,
      1' You are in the Executive (EXEC) Level of the TOPS-20 operating a
      2ystem after',/,
      3' you log on or after execution of system routines; noted by the d
      4isplay of ',/,
      *' the "@" prompt.  Commands here fall into three categories:',//,
      5'    1.  Cursor Commands',/,
      6'    2.  Directory-Related Commands',/,
      7'    3.  System-Related Commands',//,
      8' The more basic/most often used of these commands are presented i
      9n this section',/,' of the tutorial.  The remainder are presented
      *in section three.',//,
      1' Notes:',//,
      2'    1.  The " ^ " character refers to the control (CTRL) key.',/,
      3'    2.  ESC refers to the escape (ESC) key.',/,
      4'    3.  <CR> refers to the carriage return or enter key.',/,
      5'    4.  DEL refers to the delete (DEL) key.',//)
C
C      **** CURSOR COMMANDS
C
1110   FORMAT(20X,'BASIC CURSOR COMMANDS',//,
      1' KEY (s)    USE (s)',//,
      2' ESC        This key usually completes a command or FileName.  On
      3ce you have',/,'            typed enough of a command or FileName
      4for the system to recognize',/,'            it, type the Escape ke
      5y to complete it.  If you haven''t typed',/,'            enough, t
      6he system simply beeps and waits for you to type more.',//,
```

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```
      7' CTRL       Used with another key to enter a command.  You may ho
     8ld down the',/,'             CTRL key as long as you want, but shou
     9ld press the other key only',/,'          once (the same as you
     *would use the shift key on a typewriter).',//,
     1' ^C          Used to abort a partially typed or partially complete
     2d command  ',/,'            (sometimes this may require several ^C
     3s).  If you are in the middle ',/,'           of a program, typin
     4g ^C will return you to the EXEC level. (This is',/,'             n
     5ot usually the best way to leave a program).',//)
C
 1115 FORMAT(' @           Prompt for the EXEC level.  (To enter this cha
     1racter into text,',/,
     2'             while accessing the host through a TAC, type it twice
     * -- the system',/,
     *'             will respond with a third "@").',//,
     3' DEL         Deletes characters from right to left.',//,
     6' ^O          Stops terminal output.',//,
     *' ^W          Deletes words from right to left.',//,
     1' ^Z          End-of-file.  Used whenever you have finished enterin
     2g data, text,',/,'            messages, etc.',//,
     3' <CR>        Confirms a given command.  Most commands are not exec
     4uted until you',/,'           type a carriage return.',//)
C
C     LISTING OF DIRECTORY RELATED COMMANDS
C
 1120 FORMAT('                 DIRECTORY-RELATED COMMANDS',//,
     1' A complete listing of Directory-Related commands can be seen by
     2typing "?"',/,' after the "@" prompt.  The following is a listing
     3of those most often used.',//,
     4' Note: A filename within the TOPS-20 system is composed of a nam
     5e, a type and',/,' a generation number. Thus, HOMEWORK.EXE.5 is a
     6file with a name of "HOMEWORK",',/,' a type of "EXE" and is the fi
     7fth generation.  In the following material, we',/,' abreviate file
     8name with "FN"; filetype with "FT"; generation number with "NU".',
     *//,
     5' Command     Use (a)',//,
     6' DIRECTORY   Lists the names of all of your files.',//,
     7' TYPE        Types the contents of a file.',//,
     8' APPEND      Appends one file to another',//)
C
 1125 FORMAT(' RENAME      Renames a file.',//,
     1' ARCHIVE     Places a file in off-line storage.',//,
     2' DELETE      Deletes a file from your directory.',//,
     3' UNDELETE    Puts "DELETEd" files back in your directory unless yo
     4u have',/,'            "EXPUNGEd" or logged off or occassionally,
     *if the system crashs',/,
     5'            after you "DELETEd" the files.',//,
     6' EXPUNGE     Permanently erases all "DELETEd" files.',//,
     7' WOULD YOU LIKE A DEMONSTRATION OF THE ABOVE COMMANDS (Y or N)?',
     8$)
C
C     LISTING OF SYSTEM RELATED COMMANDS
C
 1200 FORMAT('                   SYSTEM-RELATED COMMANDS (BASIC)',//,
     1' System related commands include:',//,
```

```
      2' FINGER      SYSTAT       TALK         REF',/,
      3' REC         INFO DISK    INFO MAIL    TER NO RAISE',//,
      4' FINGER and SYSTAT are discussed in the following.  The others ar
      4e',/,' presented in the third section (TOPS-20 LEVEL COMMANDS - AD
      5VANCED).',//)
C
1205  FORMAT (' FINGER:',//,
      1' FINGER is used to find out information about a specific user, an
      2d',/,' is invoked by typing "FINGER USER <CR>" after the "@" promp
      3t (USER',/,' refers to the account name).',//,
      4' SYSTAT:',//,
      5' SYSTAT is used to see everyone, or if a specific individual is l
      *ogged on a',/,
      6' specific host.  Typing SYSTAT after the "@" prompt followed by a
      * <CR> will',/,
      7' list everyone on the net.  To see if a particular individual is
      *on the net,',//,
      8' type "SY USER <CR>" after the "@" prompt.  The system will answe
      *r with the',/,
      9' Job Number, etc. for that individual, or with just an "@" prompt
      *.  The latter',/,
      1' indicates that the USER is',/,' not on the net.',//)
C
C     **** SIGN-OFF ROUTINE
C
1240  FORMAT(' This concludes the "basic" Executive Level Command sectio
      1n of the',/,' tutorial.',//)
1250  FORMAT(' SORRY TO SEE YOU LEAVE SO SOON',//)
1300  FORMAT(' DO YOU WISH TO CONTINUE (Y or N)?',$)
1370  FORMAT(' ENTER ANY KEY TO RETURN TO THE MAIN MENU: ',$)
1400  FORMAT(A1)
1600  FORMAT(////)
      END
C
C
```

```
C
C
      SUBROUTINE DIRECT(DUM)
C
C     =================DIRECTORY SUB-SUBROUTINE==================
C     *    DEMONSTRATION OF VIEWING YOUR DIRECTORY OF FILES LISTING    *
C     ==========================================================
C
      DIMENSION DEMO(2),INPUT(1)
      NUM=0
5     TYPE 100
10    READ(05,105,ERR=15) DEMO
      IF(DEMO(1).EQ.'Q'.OR.DEMO(1).EQ.'q')GO TO 40
      IF(DEMO(1).EQ.'DIREC'.AND.DEMO(2).EQ.'TORY'.OR.DEMO(1).EQ.'direc'.
     1AND.DEMO(2).EQ.'tory'.OR.DEMO(1).EQ.'DIR'.AND.DEMO(2).EQ.' '.OR.DE
     2MO(1).EQ.'dir'.AND.DEMO(2).EQ.' ')GO TO 35
15    NUM=NUM+1
      GO TO (20,25,30)NUM
20    TYPE 110
      GO TO 10
25    TYPE 115
      GO TO 10
30    NUM=0
      TYPE 120
      READ(05,125,ERR=15) INPUT
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y') GO TO 5
      GO TO 40
35    TYPE 130
40    RETURN
C
C     **** FORMATS FOR DIRECTORY SUB-SUBROUTINE*********************
C
100   FORMAT(///' DIRECTORY:',//,
     1' Typing in "DIRECTORY" or just "DIR" after the "@" prompt followe
     2d by a <CR>',/,' will list the current contents of your directory.
     3 Give it a try.',//,' @',s)
105   FORMAT(2A5)
110   FORMAT(' NOPE! TRY AGAIN.',//,' @',s)
115   FORMAT(' NOPE! TRY HARDER.',//,' @',s)
120   FORMAT(' What you should have typed in after the "@" prompt was:',
     1//,' DIRECTORY or DIR',//,' CARE TO TRY AGAIN (Y or N)?',s)
125   FORMAT(A1)
130   FORMAT('    PS:<YOUR ACCOUNT NAME>',/,
     1' $XED-MODE-FILES$..1    (This file controls the XED editor',/,
     2' (MSG.PROFILE).1        (This file controls the MSG system)',/,
     3' FINGER.PLAN.1',/,
     4' HAS.ANY.1',/,
     5' MAIL.TXT.1             (This file controls your mailbox)',/,
     6' REMIND.RMD.1',/,
     7' Total of 23 pages in 6 files',//,
     8' The above is what you would see, except for the notes to the rig
     9ht.',//,' NOTE:  NEVER DELETE ANY OF THESE CONTROL FILES UNTIL YOU
     * ARE FAMILIAR WITH',/,' THE SYSTEM.',//)
      END
C
```

```
C
C
      SUBROUTINE TYPE(DUM)
C
C     ====================TYPE SUB-SUBROUTINE=======================
C     =               DEMONSTRATION OF TYPE COMMAND                =
C     ==============================================================
C
      DIMENSION DEMO(3),INPUT(1)
      NUM=O
5     TYPE 100
10    READ(05,105,ERR=15) DEMO
      IF(DEMO(1).EQ.'Q'.OR.DEMO(1).EQ.'q')GO TO 40
      IF(DEMO(1).EQ.'TYPE '.AND.DEMO(2).EQ.'FACE.'.AND.DEMO(3).EQ.'WHO.1
     1'.OR.DEMO(1).EQ.'type '.AND.DEMO(2).EQ.'face.'.AND.DEMO(3).EQ.'who
     2.1')GO TO 35
15    NUM=NUM+1
      GO TO (20,25,30)NUM
20    TYPE 110
      GO TO 10
25    TYPE 115
      GO TO 10
30    NUM=O
      TYPE 120
      READ(05,125,ERR=15) INPUT
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y') GO TO 5
      GO TO 40
35    TYPE 130
40    RETURN
C
C     **** FORMATS FOR THE TYPE SUB-SUBROUTINE**********************
C
100   FORMAT(///' TYPE:',//,
     1' The "TYPE" command is invoked by typing "TYPE FN.FT.NU <CR>" aft
     2er the "@"',/,' prompt.  Try TYPing out the contents of the FACE.W
     3HO.1 file.',//,' @',$)
105   FORMAT(3A5)
110   FORMAT(' YOU CAN DO BETTER THAN THAT',//,' @',$)
115   FORMAT(' WHY DON''T YOU TAKE ANOTHER STAB AT IT',//,' @',$)
120   FORMAT(' What you should have typed in after the "@" prompt was:',
     1//,' TYPE FACE.WHO.1',//,' CARE TO TRY AGAIN (Y or N)?',$)
125   FORMAT(A1)
130   FORMAT(
     1'          XXXXXXXXXXXX              ',/,
     2'         XXXXXXXXXXXXXXX            ',/,
     3'       XXXXXXXXXXXXXXXXX            ',/,
     5'      XXX              XXX          ',/,
     6'     XXX               XXX          ',/,
     7'     XXX  XXXX    XXXX  XXX         ',/,
     8'     XX  X XX X  X XX X  XX         ',/,
     9'     XX  X XX X  X XX X  XX         ',/,
     *'     XXX   XXXX XXX XXXX   XXX       ',/,
     1'     XXX       XXX       XXX        ',/,
     2'    XXXX       XXX       XXXX       ',/,
     3'    XXXX        XXXXX        XXXX    ',/,
```

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```
4'    XXXX           X   X         XXXX       ',//,
5'   XXXXXX          XXX          XXXXXX      ',//,
6'   XXXXXXX                      XXXXXXX     ',//,
7'  XXXXXXXX       XX   XX       XXXXXXXX     ',//,
8'       X         XXXXXXX            X       ',//,
9'       X          XXXX              X       ',//,
*'       X                            X       ',//,
1'        X                          X        ',//,
2'        XXX                      XXX        ',//,
3'       XX XX                    XX XX       ',//,
4'       XX   XXXXXXXXXXX         XX          ',//,
5'        X         X X          X           ',//,
6'        X        X   X         X           ',//,
7'        X        XX       XX         X      ',//,
8'        XXXXX               XXXXX      ',//,
9'          X                   X        ',//,
*'          X                 X          ',//,
1'           XX           XX             ',//,
2'             XX   XX                   ',//,
3'             XXXXX                     ',//,
4'              XXX                     ',//,
5' THE FATHER OF YOUR COUNTRY...GEORGE WASHINGTON',//)
  END
```

C
C

55

```fortran
C
C
      SUBROUTINE APPEND(DUM)
C
C     **************APPEND SUB-SUBROUTINE***************************
C     *    DEMONSTRATION OF APPENDING ONE FILE TO ANOTHER         *
C     ***********************************************************
C
      DIMENSION DEMO(6),INPUT(1)
      NUM=0
5     TYPE 100
10    READ(05,105,ERR=15) DEMO
      IF(DEMO(1).EQ.'APPEN'.AND.DEMO(2).EQ.'D TEM'.AND.DEMO(3).EQ.'P2.FO
     1'.AND.DEMO(4).EQ.'R.1 T'.AND.DEMO(5).EQ.'EMP1.'.AND.DEMO(6).EQ.'FO
     2R.1'.OR.DEMO(1).EQ.'appen'.AND.DEMO(2).EQ.'d tem'.AND.DEMO(3).EQ.
     3'p2.fo'.AND.DEMO(4).EQ.'r.1 t'.AND.DEMO(5).EQ.'emp1.'.AND.DEMO(6).
     4EQ.'for.1')GO TO 35
15    NUM=NUM+1
      GO TO (20,25,30)NUM
20    TYPE 110
      GO TO 10
25    TYPE 115
      GO TO 10
30    NUM=0
      TYPE 120
      READ(05,125,ERR=15) INPUT
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y') GO TO 5
      GO TO 40
35    TYPE 130
40    RETURN
C
C     ********FORMATS FOR THE APPEND SUB-SUBROUTINE*****************
C
100   FORMAT(//' APPEND:',//,
     1' The "APPEND" command is typed after the "@" prompt, followed by
     2the file to',/,' be appended, followed by the file to be appended
     3to, followed by a <CR>. i.e.',/,' "APPEND B.1.1 A.1.1<CR>" will ca
     4use the contents of the B file to be placed',/,' in the A file at
     5the end.  Try appending TEMP2.FOR.1 to TEMP1.FOR.1.',//,' @',$)
105   FORMAT(6A5)
110   FORMAT(' OH DEAR! TRY AGAIN.',//,' @',$)
115   FORMAT(' NOPE! TRY HARDER.',//,' @',$)
120   FORMAT(' What you should have typed in after the "@" prompt was:',
     1//,' APPEND TEMP2.FOR.1 TEMP1.FOR.1',//,' CARE TO TRY AGAIN (Y or
     2N)?',$)
125   FORMAT(A1)
130   FORMAT(' TEMP2.FOR.1 [OK]',//,' THE ABOVE LINE INDICATES COMPLETIO
     1N OF THE APPEND.',//)
      END
C
C
```

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```
C
C
        SUBROUTINE RENAME(DUM)
C
C       ==============RENAME SUB-SUBROUTINE=========================
C       *           DEMONSTRATION OF RENAMING A FILE               *
C       ==========================================================
C
        DIMENSION DEMO(4),INPUT(1)
        NUM=0
5       TYPE 100
10      READ(05,105,ERR=15) DEMO
        IF(DEMO(1).EQ.'Q'.OR.DEMO(1).EQ.'q')GO TO 40
        IF(DEMO(1).EQ.'RENAM'.AND.DEMO(2).EQ.'E TTT'.AND.DEMO(3).EQ.'..1 T
       1'.AND.DEMO(4).EQ.'AT..1'.OR.DEMO(1).EQ.'renam'.AND.DEMO(2).EQ.'e t
       2tt'.AND.DEMO(3).EQ.'..1 t'.AND.DEMO(4).EQ.'at..1')GO TO 35
15      NUM=NUM+1
        GO TO (20,25,30)NUM
20      TYPE 110
        GO TO 10
25      TYPE 115
        GO TO 10
30      NUM=0
        TYPE 120
        READ(05,125,ERR=15) INPUT
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y') GO TO 5
        GO TO 40
35      TYPE 130
40      RETURN
C
C       **** FORMATS FOR THE RENAME SUB-SUBROUTINE*********************
C
100     FORMAT(' RENAME:',//,
       1' The "RENAME" command is issued by typing "RENAME (old) FN.FT.NU
       2(new) FN.FT',/,' <CR>" after the "@" prompt.  Let''s give it a try
       3 by renaming TTT..1 to TAT..1.',//,' @',$)
105     FORMAT(4A5)
110     FORMAT(' NOPE! TRY AGAIN.',//,' @',$)
115     FORMAT(' NOPE! TRY HARDER.',//,' @',$)
120     FORMAT(' What you should have typed in after the "@" prompt was:',
       1//,' RENAME TTT..1 TAT..1',//,' CARE TO TRY AGAIN (Y or N)?',$)
125     FORMAT(A1)
130     FORMAT(' TTT..1 => TAT..1 [OK]',//,' THE LINE ABOVE SHOWS US THAT
       1THE RENAME IS COMPLETE.',//)
        END
C
C
```

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```
C
C
      SUBROUTINE ARCHIV(DUM)
C
C      =============ARCHIVE SUB-SUBROUTINE=========================
C      *    DEMONSTRATION OF HOW FILES ARE ARCHIVED (OFF-LINE STORAGE)  *
C      ============================================================
C
      DIMENSION DEMO(3),INPUT(1)
      NUM=0
5     TYPE 100
10    READ(05,105,ERR=15) DEMO
      IF(DEMO(1).EQ.'Q'.OR.DEMO(1).EQ.'q')GO TO 40
      IF(DEMO(1).EQ.'ARCHI'.AND.DEMO(2).EQ.'VE TA'.AND.DEMO(3).EQ.'T..1'
     1.OR.DEMO(1).EQ.'archi'.AND.DEMO(2).EQ.'ve ta'.AND.DEMO(3).EQ.'t..1
     2')GO TO 35
15    NUM=NUM+1
      GO TO (20,25,30)NUM
20    TYPE 110
      GO TO 10
25    TYPE 115
      GO TO 10
30    NUM=0
      TYPE 120
      READ(05,125,ERR=15) INPUT
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y') GO TO 5
      GO TO 40
35    TYPE 130
40    RETURN
C
C      **** FORMATS FOR THE ARCHIVE SUB-SUBROUTINE=====================
C
100   FORMAT(///' ARCHIVE:',//,
     1' The "ARCHIVE"  command is typed after the "@" prompt followed by
     2 the FN.FT.NU',//,' (of the file you wish saved off-line) followed
     3by a <CR>.  Thus, "ARCHIVE ',//,' FINGER.PLAN.1 <CR>" would request
     4 the Finger file be archived.  Give it',//,' a try by ARCHIVEing th
     5e TAT..1 file.',//,' @',$)
105   FORMAT(3A5)
110   FORMAT(' Hmmm. I''LL PRETEND I DIDN''T SEE THAT WHILE YOU TRY AGAI
     1N.',//,' @',$)
115   FORMAT(' NOPE! TRY HARDER.',//,' @',$)
120   FORMAT(' What you should have typed in after the "@" prompt was:',
     1//,' ARCHIVE TAT..1',//,' CARE TO TRY AGAIN (Y or N)?',$)
125   FORMAT(A1)
130   FORMAT(' TAT..1 [REQUESTED]',//,' THE ABOVE LINE INDICATES THAT TH
     1E FILE WILL BE ARCHIVED.',//)
      END
C
C
```

```
C
C
      SUBROUTINE DELETE(DUM)
C
C     ===================DELETE SUB-SUBROUTINE======================
C     =              DEMONSTRATION OF DELETING A FILE               =
C     ==============================================================
C
      DIMENSION DEMO(4),INPUT(1)
      NUM=0
5     TYPE 100
10    READ(05,105,ERR=15) DEMO
      IF(DEMO(1).EQ.'Q'.OR.DEMO(1).EQ.'q')GO TO 40
      IF(DEMO(1).EQ.'DELET'.AND.DEMO(2).EQ.'E HAS'.AND.DEMO(3).EQ.'.ANY.
     1'.AND.DEMO(4).EQ.'1'.OR.DEMO(1).EQ.'delet'.AND.DEMO(2).EQ.'e has'.
     2AND.DEMO(3).EQ.'.any.'.AND.DEMO(4).EQ.'1')GO TO 35
15    NUM=NUM+1
      GO TO (20,25,30)NUM
20    TYPE 110
      GO TO 10
25    TYPE 115
      GO TO 10
30    NUM=0
      TYPE 120
      READ(05,125,ERR=15) INPUT
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y') GO TO 5
      GO TO 40
35    TYPE 130
40    RETURN
C
C     ========FORMATS FOR THE DELETE SUB-SUBROUTINE=================
C
100   FORMAT(//' DELETE:',//,
     1' The "DELETE" command is typed after the "@" prompt followed by t
     2he',/,' FN.FT.NU (of the file you wish to delete) followed by a <C
     3R>.  ie "DELETE',/,' FINGER.PLAN.1 <CR>" would delete the Finger f
     4ile.  Now it''s your turn. Type in',/,' the appropriate command to
     5 delete the HAS.ANY.1 file.',//,' @',$)
105   FORMAT(4A5)
110   FORMAT(' TRY AGAIN, SWEETIE.  I WON''T TELL.',//,' @',$)
115   FORMAT(' ALRIGHT, YOU CAN HAVE ONE MORE CHANCE.',//,' @',$)
120   FORMAT(' What you should have typed in after the "@" prompt was:',
     1//,' DELETE HAS.ANY.1',//,' CARE TO TRY AGAIN (Y or N)?',$)
125   FORMAT(A1)
130   FORMAT(' HAS.ANY.1 [OK]',//,' THE ABOVE LINE INDICATES THAT THE FI
     1LE HAS BEEN DELETED.',//)
      END
C
C
```

```
C
C
      SUBROUTINE UNDEL(DUM)
C
C     ==============UNDELETE SUB-SUBROUTINE=========================
C     =          DEMONSTRATION OF UNDELETING A FILE                =
C     ==============================================================
C
      DIMENSION DEMO(3),INPUT(1)
      NUM=0
5     TYPE 100
10    READ(05,105,ERR=15) DEMO
      IF(DEMO(1).EQ.'Q'.OR.DEMO(1).EQ.'q')GO TO 40
      IF(DEMO(1).EQ.'UNDEL'.AND.DEMO(2).EQ.'ETE T'.AND.DEMO(3).EQ.'AT..1
     1'.OR.DEMO(1).EQ.'undel'.AND.DEMO(2).EQ.'ete t'.AND.DEMO(3).EQ.'at.
     2.1')GO TO 35
15    NUM=NUM+1
      GO TO (20,25,30)NUM
20    TYPE 110
      GO TO 10
25    TYPE 115
      GO TO 10
30    NUM=0
      TYPE 120
      READ(05,125,ERR=15) INPUT
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y') GO TO 5
      GO TO 40
35    TYPE 130
40    RETURN
C
C     =========FORMATS FOR UNDELETE SUB-SUBROUTINE==================
C
100   FORMAT(///' UNDELETE:',//,
     1' The "UNDELETE" command is typed after the "@" prompt followed by
     2 the FN.FT.NU',/,' (of the file you wish returned to the directory
     3) followed by a <CR>.  That is',/,' "UNDELETE FINGER.PLAN.1 <CR>"
     4would return the Finger file.  Lets''a give it',/,' a try by UNDEL
     5ETEing the TAT..1 file.',//,' @',$)
105   FORMAT(3A5)
110   FORMAT(' NOPE! TRY AGAIN.',//,' @',$)
115   FORMAT(' ONCE MORE PLEASE.',//,' @',$)
120   FORMAT(' What you should have typed in after the "@" prompt was:',
     1//,' UNDELETE TAT..1',//,' CARE TO TRY AGAIN (Y or N)?',$)
125   FORMAT(A1)
130   FORMAT(' TAT..1 [OK]',//,' THE ABOVE LINE INDICATES THAT THE FI
     1LE HAS BEEN RETURNED.',//)
      END
C
C
```

```
C
C
      SUBROUTINE EXPUNG(DUM)
C
C     ==============EXPUNGE SUB-SUBROUTINE===========================
C     =          DEMONSTRATION OF EXPUNGING AN ACCOUNT              =
C     ================================================================
C
      DIMENSION DEMO(2),INPUT(1)
      NUM=0
5     TYPE 100
10    READ(05,105,ERR=15) DEMO
      IF(DEMO(1).EQ.'Q'.OR.DEMO(1).EQ.'q')GO TO 40
      IF(DEMO(1).EQ.'EXPUN'.AND.DEMO(2).EQ.'GE'.OR.DEMO(1).EQ.'expun'.AN
     1D.DEMO(2).EQ.'ge')GO TO 35
15    NUM=NUM+1
      GO TO (20,25,30)NUM
20    TYPE 110
      GO TO 10
25    TYPE 115
      GO TO 10
30    NUM=0
      TYPE 120
      READ(05,125,ERR=15) INPUT
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y') GO TO 5
      GO TO 40
35    TYPE 130
40    RETURN
C
C     ===========FORMATS FOR EXPUNGE SUB-SUBROUTINE===================
C
100   FORMAT(///' EXPUNGE:',//,
     1' This command is typed after the "@" prompt followed by a <CR>.
     2No FileName',/,' is required, as it permanently erases ALL files f
     3or which you had previously',/,' issued the "DELETE" command.  Giv
     4e it a try.',//,' @',$)
105   FORMAT(2A5)
110   FORMAT(' NOPE! TRY AGAIN.',//,' @',$)
115   FORMAT(' NOPE! TRY HARDER.',//,' @',$)
120   FORMAT(' What you should have typed in after the "@" prompt was:',
     1//,' EXPUNGE',//,' CARE TO TRY AGAIN (Y or N)?',$)
125   FORMAT(A1)
130   FORMAT(' PS:<YOUR ACCOUNT NAME> [10 PAGES FREED]',//,' THE ABOVE L
     1INE INDICATES THAT YOUR DIR HAS BEEN EXPUNGED.',//)
      END
C
C
```

```
C
C
      SUBROUTINE ELC2(DUM)
C
C     ==========ADVANCED EXECUTIVE LEVEL COMMANDS SUBROUTINE===========
C     *      THIS SUBROUTINE EXPLAINS AND DEMONSTRATES HIGHER LEVEL     *
C     *      COMMANDS AT THE EXECUTIVE LEVEL OF THE DDN/TOPS-20 SYSTEM  *
C     *      SYSTEM. IT SERVES AS A FOLLOW-ON TO THE ELC1 SUBROUTINE.   *
C     ================================================================
C
      DIMENSION INPUT(1)
      DUM=0
C
C     **** INTRO TO EXECUTIVE LEVEL RELATED COMMANDS
C
      TYPE 1600
      TYPE 1100
      TYPE 1320
      TYPE 1330
      READ(05,1400,ERR=15) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
15    TYPE 1110
      TYPE 1330
      READ(05,1400,ERR=25) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
C
C     **** INTRO TO DIRECTORY RELATED COMMANDS
C
25    TYPE 1120
      TYPE 1330
      READ(05,1400,ERR=35) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
C
C     **** INTRO TO SYSTEM RELATED COMMANDS
C
35    TYPE 1200
      TYPE 1330
      READ(05,1400,ERR=40) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
40    TYPE 1205
      TYPE 1330
      READ(05,1400,ERR=105) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
105   TYPE 1210
      TYPE 1330
      READ(05,1400,ERR=110) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
110   TYPE 1220
C
```

```
C       •••• QUERY TO SEE IF USER DESIRES DEMONSTRATION OF TALK COMMAND
C
        READ(05,1400,ERR=499) INPUT
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n') GO TO 520
499     CALL TALK(DUM)
500     TYPE 1240
        TYPE 1370
        READ(05,1400,ERR=510) INPUT
510     RETURN
520     TYPE 1250
        TYPE 1370
        READ(05,1400,ERR=530) INPUT
530     RETURN
C
C
C       ••••FORMATS FOR ADVANCED EXECUTIVE LEVEL COMMANDS SUBROUTINE••••••
C
C       •••• DEMONSTRATION OF EXECUTIVE LEVEL COMMANDS
C
1100    FORMAT(20X,'EXECUTIVE LEVEL COMMANDS (ADVANCED)',//,
       1' You are in the Executive (EXEC) Level of the TOPS-20 operating s
       •ystem after',//,
       2' you log on or after execution of system routines.  You are in th
       •is level when',//,
       3' the system prompts you with the "@" prompt.  Commands at this le
       •vel fall into',//,
       4' three categories:',//,
       5'     1.  Cursor Commands',/,
       6'     2.  Directory-Related Commands',/,
       7'     3.  System-Related Commands',//,
       8' The more basic/most often used of these commands were presented
       9in section 2',/,' of  the tutorial.  The  remainder are presented
       •here.',//,
       1' Notes:',//,
       2'     1.  The " ^ " character refers to the control (CTRL) key.',/,
       3'     2.  ESC refers to the escape (ESC) key.',//,
       4'     3.  <CR> refers to the carriage return or enter key.',/,
       5'     4.  DEL refers to the delete (DEL) key.',//)
1110    FORMAT(20X,'ADVANCED CURSOR COMMANDS',//,
       1' KEY (s)     USE (s)',//,
       2' ^T          This command can be used to satisfy yourself that the
       3 system is',/,'             still running. For example, if the syst
       4em is responding slowly and',//,'           you type ^T, informati
       5on on the system status and the amount of',/,'            CPU time
       6 you have used since you logged on is displayed.',//,
       7' ^S          Freezes typeout on the screen and acts as a No Scroll
       8 key.',//,
       1' ^Q          Resumes typeout on a screen that was stopped by a ^S
       2command.',///)
C
C       •••• DEMONSTRATION OF DIRECTORY RELATED COMMANDS
C
1120    FORMAT('                  DIRECTORY RELATED COMMANDS',//,
       1' A complete listing of Directory Related commands can be seen by
       2typing "?"',/,' after the "@" prompt.  The following is a listing
```

```
      3of those most often used.',//,' Note:  FN = FileName;  FT = FileTy
      4pe;  NU = FileNumber',//,
      5' Command          Use (s)',//,
      6' SET DIR PASS This command changes your password.',//,
      7' PROTECTION   The protection for each file in your directory cons
      8ists of a',/,' six-digit number divided into three groups of two d
      9igits each. The',/,' first pair represents owner access to the fil
      *e, the second pair represents',/,
      1' group access, and the last pair represents world access to the f
      *ile.',/,
      2' By setting the protection for files in your directory, you can c
      *ontrol who',/,
      3' can access and/or change your files. The default protection is 7
      *75200.',/,
      4' This allows you full access (77), members of your group partial
      *access',/,
      5' (to list your directory, and to read and execute your files: 52)
      *, and',/,
      6' prohibits all other users from gaining access to your files (00)
      *.',/,
      7' For more info, type HELP PROTECTION.',//)
C
C     **** DEMONSTRATION OF SYSTEM RELATED COMMANDS
C
1200  FORMAT('                      SYSTEM-RELATED COMMANDS (ADVANCED)',//,
      1' System related commands include:',//,
      2' FINGER      SYSTAT          TALK            REF',/,
      3' REC         INFO DISK       INFO MAIL       TER NO RAISE',//,
      4' FINGER and SYSTAT were previously discussed.  The others are',/,
      5' presented here.',//)
1205  FORMAT (' ATTACH:',//,
      1' ATTACH       Attaches a you to a job.  For example, if you some
      *how get',/,
      2' detached from your directory before you get a chance to log out,
      * log back',/,
      3' in to the host and ATTACH yourself to the your old job number.
      *If you don''t',/,' remember what your old job number was, just SYS
      *TAT yourself.',//,
      4' TER NO RAISE:',//,
      5' TER NO RAISE Makes your terminal accept both upper and  lower  c
      6ase',/,' letters if, for some reason, it is only accepting upper c
      7ase',/,' letters.',//,
      8' INFO MAIL:',//,
      9' INFO MAIL    Asks the system to list any unlooked-at messages in
      * ',/,' your mailbox.',//,
      1' INFO DISK:',//,
      2' INFO DISK    Lists information about your current page allocatio
      3n for',/,' directories and for the system.',//)
1210  FORMAT (' TALK:',//,
      1' TALK <user> Creates a communication link with another user. Use
      * this in place',/,
      2' place of a message if the other user is logged on at the same ti
      *me you are.',/,
      3' If you suddenly see the phrase "LINK FROM <username>" appear on
      *your screen,',/,
```

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```fortran
     *' type a ^C, which puts a hold on what you were doing. You can the
     *n talk to the',/,' other person by prefacing your lines with the s
     *ymbol ! or ;.',//,
     4' BREAK:',//,
     5' BREAK         This command breaks the communication link with the
     6 other',/,' user.',//)
1220  FORMAT(' CONTINUE:',//,
     7' CONTINUE      This command must be typed by the person who was in
     *terrupted',/,' and will take him/her back to the place of interrup
     *tion.',//,
     4' REFUSE:',//,
     5' REFUSE        If you do not wish to be interrupted while you are
     6on the',/,' net, type REFUSE in your LOGIN.CMD file.',//,
     7' RECEIVE:',//,
     8' RECEIVE       If you don''t mind people talking to you while  you
     9 are on the',/,' net, type RECEIVE in your LOGIN.CMD file.',///,
     *' WOULD YOU LIKE A DEMONSTRATION OF THE ABOVE COMMANDS (Y or N)? '
     *,$)
1240  FORMAT(' THIS CONCLUDES THE ADVANCED EXECUTIVE LEVEL COMMANDS SECT
     1ION ',//,' OF THIS TUTORIAL.',//)
1250  FORMAT(' Sorry to see you quit early. Good bye.',//)
1320  FORMAT(' NOTE: YOU MAY QUIT THE FOLLOWING DEMONSTRATION AT ANY TIM
     2E SIMPLY',/,' BY TYPING A "Q <CR>" IN RESPONSE TO ANY PROMPT.',/)
1330  FORMAT(' ENTER A "Q" TO QUIT, ANY OTHER KEY TO CONTINUE: ',$)
1370  FORMAT(' ENTER ANY KEY TO RETURN TO MAIN MENU: ',$)
1400  FORMAT(1A1)
1600  FORMAT(/////)
      END
C
C
```

```
C
C
        SUBROUTINE TALK(DUM)
C
C       =====================TALK SUBROUTINE=========================
C       =            DEMONSTRATE TALK/LINK COMMANDS                  =
C       =============================================================
C
        DIMENSION DEM1(3),INPUT(1)
        TYPE 1600
25      NUM=0
30      TYPE 120
        READ(05,205,ERR=30) DEM1
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 60
        IF(DEM1(1).EQ.'TALK '.AND.DEM1(2).EQ.'TO ED'.AND.DEM1(3).EQ.'ZEL'
       1.OR.DEM1(1).EQ.'talk '.AND.DEM1(2).EQ.'to ed'.AND.DEM1(3).EQ.'ze
       21')GO TO 50
        NUM=NUM+1
        GO TO (35,40,45) NUM
35      TYPE 300
        GO TO 30
40      TYPE 310
        GO TO 30
45      TYPE 140
        TYPE 320
        READ(05,210,ERR=45)INPUT
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 60
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 25
50      NUM=0
C
C       SIGN-OFF ROUTINE
C
        TYPE 200
        TYPE 350
        READ(05,210,ERR=55) INPUT
55      RETURN
60      TYPE 340
70      RETURN
C
C
C       **************FORMATS FOR TALK SUBROUTINE*********************
C
C       **** DEMONSTRATION OF TALK/LINK COMMANDS
C
120     FORMAT(' To initiate a conversation with your coworker, Edzel, you
       1',/,' first type SY EDZEL. If the system responds with Edzel''s jo
       2b',/,' number, you know he is on the net, and can now type TALK TO
       3 EDZEL.',/,' Give it a try:',//,' @',$)
140     FORMAT(' What you should have typed was: TALK TO EDZEL <CR>',//)
200     FORMAT(' If you are Edzel, toiling diligently away at your VDT, yo
       1u',/,' will see (and do) the following:',//,' ..the derivative of
       2squarLINK FROM <YOUR FRIEND>',/,' ^c',/,' !HI..WANNA GET TOGETHER
       3ABOUT 1630 TO DISCUSS TOMORROW''S BRIEFING?',/,' ;Sure...meet you
       4in the Rat''s Nest!',/,' !ROG, SEE YOU THERE. BYE.',//,' @ break',/
       5/,
```

```fortran
      7' Did you notice that both parties typed either a ! or ; to cause
     *the system to',/,
      8' send the line?',//,
      9' Invoking the CONTINUE command at this point will place you back
     *to where you',/,
      1' were prior to the link.  Such as:',//,
      2' @continue',//,' ..the derivative of squar',//,
      3' You can then use a ^R to get the entire line to reprint.',//,
      4' This concludes the demonstration of TALK/LINK.',//,
      5' Remember to use the "?" any time you are not quite sure what the
     * system is',/,' asking for.',//)
205   FORMAT(3A5)
210   FORMAT(1A1)
300   FORMAT(//' NO. TRY AGAIN.',//)
310   FORMAT(//' YOU STILL BLEW IT.',//)
320   FORMAT(//' CARE TO TRY AGAIN (Y OR N)?  ',$)
340   FORMAT(' Sorry to see you quit early. Goodbye.',//)
350   FORMAT(' PRESS ANY KEY . . .',//)
1600  FORMAT(////)
      END
C
C
```

```
C
C
        SUBROUTINE AMSG(DUM)
C
C       ===========================MSG SUBROUTINE=========================
C       =    THIS SUBROUTINE EXPLAINS AND DEMONSTRATES THE "MSG" MESSAGE    =
C       =    PROCESSOR                                                      =
C       ==================================================================
C
        DIMENSION INPUT(1),DEM1(1),DEM2(2),DEM3(3),DEM7(7)
C
C       **** INTRODUCTION TO MSG
C
        TYPE 1600
        TYPE 1000
        TYPE 1300
        READ(05,1400,ERR=10) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C       **** MSG COMMAND LEVEL COMMANDS
C
10      TYPE 1010
        TYPE 1300
        READ(05,1400,ERR=15) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
15      TYPE 1020
        TYPE 1300
        READ(05,1400,ERR=20) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C       **** COMMANDS WITHIN MESSAGE PREPARATION
C
20      TYPE 1030
        TYPE 1300
        READ(05,1400,ERR=21) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
21      TYPE 1035
        TYPE 1300
        READ(05,1400,ERR=22) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C       **** SEND, QUEUE OR ?
C
22      TYPE 1038
        TYPE 1320
        READ(05,1400,ERR=25) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C       **** DEMO - ENTRY INTO MSG
```

```
C
25      NUM=0
30      TYPE 1040
32      READ(05,1410,ERR=30) DEM1
        TYPE 1600
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
        IF(DEM1(1).EQ.'MSG'.OR.DEM1(1).EQ.'msg')GO TO 50
        NUM=NUM+1
        GO TO (35,40,45) NUM
35      TYPE 1340
        TYPE 1500
        GO TO 32
40      TYPE 1350
        TYPE 1500
        GO TO 32
45      TYPE 1045
        TYPE 1360
        READ(05,1400,ERR=45) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 25
C
C       **** DEMO - SEND
C
50      NUM=0
55      TYPE 1050
57      READ(05,1400,ERR=55) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'S'.OR.INPUT(1).EQ.'s')GO TO 75
        NUM=NUM+1
        GO TO (60,65,70) NUM
60      TYPE 1340
        TYPE 1505
        GO TO 57
65      TYPE 1350
        TYPE 1505
        GO TO 57
70      TYPE 1055
        TYPE 1360
        READ(05,1400,ERR=70) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 50
C
C       **** DEMO - CONFIRMATION
C
75      NUM=0
80      TYPE 1060
82      READ(05,1400,ERR=80) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 100
        NUM=NUM+1
        GO TO (85,90,95) NUM
```

```
85      TYPE 1340
        TYPE 1510
        GO TO 82
90      TYPE 1350
        TYPE 1510
        GO TO 82
95      TYPE 1065
        TYPE 1360
        READ(05,1400,ERR=95) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 75
C
C       **** DEMO - MESSAGE PREPARATION "TO"
C
100     NUM=0
105     TYPE 1070
107     READ(05,1450,ERR=105) DEM2
        TYPE 1600
        IF(DEM2(1).EQ.'Q'.OR.DEM2(1).EQ.'q')GO TO 520
        IF(DEM2(1).EQ.'JONES'.AND.DEM2(2).EQ.'KF'.OR.DEM2(1).EQ.'jones'.AN
       *D.DEM2(2).EQ.'kf')GO TO 125
        NUM=NUM+1
        GO TO (110,115,120) NUM
110     TYPE 1340
        TYPE 1515
        GO TO 107
115     TYPE 1350
        TYPE 1515
        GO TO 107
120     TYPE 1075
        TYPE 1360
        READ(05,1400,ERR=120) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 100
C
C       **** DEMO - MESSAGE PREPARATION  "cc"
C
125     NUM=0
130     TYPE 1080
132     READ(05,1450,ERR=130) DEM2
        TYPE 1600
        IF(DEM2(1).EQ.'Q'.OR.DEM2(1).EQ.'q')GO TO 520
        IF(DEM2(1).EQ.'WILLB'.AND.DEM2(2).EQ.'E'.OR.DEM2(1).EQ.'willb'.AND
       *.DEM2(2).EQ.'e')GO TO 150
        NUM=NUM+1
        GO TO (135,140,145) NUM
135     TYPE 1340
        TYPE 1520
        GO TO 132
140     TYPE 1350
        TYPE 1520
        GO TO 132
145     TYPE 1085
```

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```
          TYPE 1360
          READ(05,1400,ERR=145) INPUT
          TYPE 1600
          IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
          IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 125
C
C      **** DEMO - MESSAGE PREPARATION  "SUBJECT"
C
150   NUM=0
155   TYPE 1090
157   READ(05,1450,ERR=155) DEM2
          TYPE 1600
          IF(DEM2(1).EQ.'Q'.OR.DEM2(1).EQ.'q')GO TO 520
          IF(DEM2(1).EQ.'PASCA'.AND.DEM2(2).EQ.'L'.OR.DEM2(1).EQ.'pasca'.AND
      *.DEM2(2).EQ.'l')GO TO 175
          NUM=NUM+1
          GO TO (160,165,170) NUM
160   TYPE 1340
          TYPE 1525
          GO TO 157
165   TYPE 1350
          TYPE 1525
          GO TO 157
170   TYPE 1095
          TYPE 1360
          TYPE 1600
          READ(05,1400,ERR=170) INPUT
          IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
          IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 150
C
C      **** DEMO - MESSAGE PREPARATION  "MESSAGE"
C
175   NUM=0
180   TYPE 1100
182   READ(05,1430,ERR=180) DEM7
          TYPE 1600
          IF(DEM7(1).EQ.'Q'.OR.DEM7(1).EQ.'q')GO TO 520
          IF(DEM7(1).EQ.'WHAT '.AND.DEM7(2).EQ.'PASCA'.AND.DEM7(3).EQ.'L LAN
      1'.AND.DEM7(4).EQ.'GUAGE'.AND.DEM7(5).EQ.'S ARE'.AND.DEM7(6).EQ.' A
      2VAI'.AND.DEM7(7).EQ.'LABLE'.OR.DEM7(1).EQ.'what '.AND.DEM7(2).EQ.'
      3pasca'.AND.DEM7(3).EQ.'l lan'.AND.DEM7(4).EQ.'guage'.AND.DEM7(5).E
      4Q.'s are'.AND.DEM7(6).EQ.' avai'.AND.DEM7(7).EQ.'lable')GO TO 200
          NUM=NUM+1
          GO TO (185,190,195) NUM
185   TYPE 1340
          TYPE 1530
          GO TO 182
190   TYPE 1350
          TYPE 1530
          GO TO 182
195   TYPE 1105
          TYPE 1360
          READ(05,1400,ERR=195) INPUT
          TYPE 1600
          IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
```

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```
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 175
C
C       **** DEMO - MESSAGE PREPARATION "QUEUE"
C
200     NUM=O
205     TYPE 1110
207     READ(05,1400,ERR=205) DEM1
        TYPE 1600
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 225
        NUM=NUM+1
        GO TO (210,215,220) NUM
210     TYPE 1340
        TYPE 1535
        GO TO 207
215     TYPE 1350
        TYPE 1535
        GO TO 207
220     TYPE 1115
        TYPE 1360
        READ(05,1400,ERR=220) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 200
C
C       **** DEMO T (TYPE) COMMAND
C
225     NUM=O
230     TYPE 1120
237     READ(05,1400,ERR=230) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'T'.OR.INPUT(1).EQ.'t')GO TO 250
232     NUM=NUM+1
        GO TO (235,240,245) NUM
235     TYPE 1340
        TYPE 1505
        GO TO 232
240     TYPE 1350
        TYPE 1505
        GO TO 232
245     TYPE 1125
        TYPE 1360
        READ(05,1400,ERR=245) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 225
C
C       **** DEMO - MESSAGE SEQUENCE COMPLETION (ONE MESSAGE)
C
250     NUM=O
255     TYPE 1130
257     READ(05,1440,ERR=255) DEM1
        TYPE 1600
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
        IF(DEM1(1).EQ.'14')GO TO 275
```

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```
        NUM=NUM+1
        GO TO (260,265,270) NUM
260     TYPE 1340
        TYPE 1540
        GO TO 257
265     TYPE 1350
        TYPE 1540
        GO TO 257
270     TYPE 1135
        TYPE 1360
        READ(05,1400,ERR=270) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 250
C
C       **** DEMO - H (HEADERS) COMMAND
C
275     NUM=0
280     TYPE 1140
282     READ(05,1400,ERR=280) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'H'.OR.INPUT(1).EQ.'h')GO TO 300
        NUM=NUM+1
        GO TO (285,290,295) NUM
285     TYPE 1340
        TYPE 1505
        GO TO 282
290     TYPE 1350
        TYPE 1505
        GO TO 282
295     TYPE 1145
        TYPE 1360
        READ(05,1400,ERR=295) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 275
C
C       **** DEMO - MESSAGE SEQUENCE (:)
C
300     NUM=0
305     TYPE 1150
307     READ(05,1460,ERR=305) DEM1
        TYPE 1600
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
        IF(DEM1(1).EQ.'10:15')GO TO 325
        NUM=NUM+1
        GO TO (310,315,320) NUM
310     TYPE 1340
        TYPE 1545
        GO TO 307
315     TYPE 1350
        TYPE 1545
        GO TO 307
320     TYPE 1155
```

```
      TYPE 1360
      READ(05,1400,ERR=320) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 300
325   NUM=0
330   TYPE 1160
500   TYPE 1240
      TYPE 1370
      READ(05,1400,ERR=510) INPUT
510   RETURN
520   TYPE 1250
      TYPE 1370
      READ(05,1400,ERR=530) INPUT
530   RETURN
C
C
C     ****FORMATS FOR MSG SUBROUTINE**************************************
C
C     **** INTRODUCTION
C
1000  FORMAT('                              MSG',//,
     1' MSG is a program which allows the user to create, send, file and
     2 read',/,' messages (referred to also as mail).  A listing below p
     3rovides the',/,' commands which may be used within MSG.  They may
     4also be seen from',/,' within MSG by typing a "?" after the "<-" m
     5sg prompt.',/,
     6' The following is a sample message:',//,
     7'          (msg. # 34, 279 chars)',/,
     8'          Mail-From: JONESKD created at 16-Oct-85 19:13:01',/,
     9'          Date: 16 Oct 1985 19:13:01 EDT',/,
     *'          From: JONESKD@USC-ISI.ARPA',/,
     1'          Subject: REQUESTED INFORMATION',/,
     2'          To:   HIDONJK@USC-ISI.ARPA',/,
     3'          cc:   FLEMMINGPW@USC-ISI.ARPA, JONESKD@USC-ISI.ARPA',//,
     4'          Thank you very much for your quick response.',//,
     5' The message itself is comprised of various fields, or parts.  Th
     6ey are',/,' referred to as Date Field, To Field, From Field, Subje
     7ct Field, etc.',/,' Each field is entered separately, allowing the
     8 user to view the fields',/,' separately, such as just listing the
     9 subjects of some or all messages.',/)
C
C     **** MSG COMMAND LEVEL COMMANDS
C
1010  FORMAT(' MSG COMMAND LEVEL COMMANDS',//,
     *' COMMAND  Use',//,
     1' A        Answer a message',/,
     2' B        Back up to previous message',/,
     3' ^        Back up to previous message',/,
     4' ^H       Back up to previous message',/,
     5' C        Current message',/,
     6' D        Delete a message',/,
     7' E        Exit and update message file',/,
     9' F        Forward a message',/,
     *' G        Go to message number',/,
```

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          1' H        Headers',/,
          2' I        Inclusion of length of header',/,
          3' J        Jump into lower fork',/,
          4' K        Koncise - provide shorter prompting',/,
          5' L        List of messages',/,
          6' M        Move a message into a file (deletes it as a message)',/,
          7' N        Next message number',/,
          8' O        Overwrite old file',/)
     1020 FORMAT(' COMMAND  USE',//,
          1' P        Put a message into a file (leaves it as a message also)'
          2,/,
          3' Q        Quit - return to operating system without update of msg
          4file',//,
          4' R        Read in a file',/,
          5' S        Send a message',/,
          6' T        Type a message',/,
          7' U        Undelete a message',/,
          8' V        Verbose - provides more prompting',/,
          9' W        Write file sorted by message arrival time',/,
          *' X        XED - enter XED',/,
          1' Z        Zap profile',/,
          2' ''        Marks message as examined',/,
          3' -        Marks message as not examined',/,
          4'          (system tells you upon entry if you have "not-examined m
          5essages")',/,
          7' :        display current time and date',/,
          8' ?        Type the command character for its description, ? alone
          9for summary',/,
          *' ;        Comment',/,
          1' ^N       Abort message',/,
          2' ^Z       Message completion',/)
     C
     C    **** COMMANDS WITHIN MESSAGE SEQUENCE
     C
     1030 FORMAT(' COMMANDS WITHIN MESSAGE SEQUENCE:',//,
          1' If you ask the system to type out a message (T type) or output h
          2eaders',/,
          3' (H headers), etc. the system will ask you for the message sequen
          4ce.',/,' Usually, all you desire is one message, so you just type
          5that message',/,' number followed by a carriage return.  In some i
          6nstances you may desire',/,
          7' to have more than one, possibly a string of message headers or t
          8wo ',/,' different messages.  The following describes the procedur
          9es for various',/,' means of answering the <Message Sequence> pro
          *mpt.',/,
          1' 1.  Any single number',/,
          2' 2.  Message number range (ie number <separator> number, where se
          3parator',/,'     is one of the following:',//,
          4'    COMMAND USE',/,
          5'    >       greater than   (>20 = output msgs with number greater t
          6han 20)',/,
          7'    :       through         (15:20 = msgs 15 through 20)',/,
          8'                           (20:15 = same msgs, but in inverse order
          9)',/)
     1035 FORMAT('    COMMAND USE',//,
```

```
      *'      ,      msgs stated    (24,7 = msg 24 followed by msg 7)',/,
      4'      ESC    current message',/,
      5'      ^I     last sequence specified',/,
      6'      A      All messages or headers',/,
      7'      D      Deleted messages or headers',/,
      8'      E      Examined messages',/,
      9'      F      string search of headers',/,
      *'      L      Last message sequence',/,
      1'      N      Not examined (not seen) messages',/,
      2'      I      Inverse order',/,
      3'      O      Old messages/headers',/,
      4'      R      Recent messages only',/,
      5'      S      string search of subject',/,
      6'      U      Undeleted messages',/)
C
C     **** SEND, QUEUE OR ?
C
1038  FORMAT(' SEND, QUEUE OR ?',//,
      1' After you have completed  typing the  body of a  message, which
      2you have',/,' signaled to the system with a "^Z", the system will
      3prompt you with a ',/,' "QUEue, SEND or ?".  This is asking if you
      4 want the message sent (do it',/,' now while I wait), queued (do i
      5t at the systems convenience) or ? ',/,' (provides help).',/)
C
C     **** DEMO - ENTERING XED
C
1040  FORMAT(' NOTE:  YOU MAY QUIT THE FOLLOWING DEMONSTRATION AT ANY TI
      1ME, SIMPLY BY',/,' TYPING A "Q" FOLLOWED BY A CARRIAGE RETURN, IN
      2REPLY TO ANY OF THE PROMPTS.',//,
      *'         ' OK.  Here we go.  First off, we need to get from the Exec
      1utive Command level',/,' to the MSG command level.  To do this, we
      2 type MSG after the "@" prompt,',/,' followed by a <CR>.  Give it
      3a try.',/,
      4' See the XED portion of this tutorial for the editing commands, t
      *hey work here',/,
      5' as well.',//,' @',$)
1045  FORMAT(' What you should have typed, was:   MSG <CR>',//)
C
C     **** DEMO - SEND
C
1050  FORMAT('    MSG --  version of 07 Sep 1983',/,
      1'     Type ? for help, ? # for news',//,
      2'     No new messages since file was last read on 15-Nov-85 05:16:
      339.',/,'     There are 23 old messages.',/,
      *'     The file is 26 disk pages long.',//,' <- ',//,
      1' This puts us at the MSG command level prompt.',//,
      2' Now we have a choice.  We could read (T - type), send a message
      3(S - sndmsg),',/,' answer a message (A - answer) etc. (see availab
      4le commands above).  First,',/,' let''s give a try at preparing an
      5d sending a message.',//,
      6' (Note:  During this simulation it is necessary to type a carriag
      7e return',/,' after your entry).',//,
      8' To begin, we type an "S <CR>" after the prompt to enter the mess
      9age send',/,' routine.  Give it a try.',//,' <- ',$)
1055  FORMAT(' What you should have typed, was:  S <CR>',//)
```

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C
C     **** DEMO - CONFIRMATION
C
1060  FORMAT(' <- Sndmsg [confirm]',//,
     1' At this point you enter a "Y<CR>" to confirm, or a "N<CR>" to ca
     2ncell.',/,' <- sndmsg [confirm]',$)
1065  FORMAT(' What you should have typed, was: Y<CR>',//)
C
C     **** DEMO - TO
C
1070  FORMAT(' [  If you wish to abort back to MSG, type control-N]',//,
     1' To   (? for help): ',//,
     2' The system is now asking for you to enter the addressee of your
     3message.',/,' Send it to JONESKF',//,' To   (? for help): ',$)
1075  FORMAT(' What you should have typed, was: JONESKF<CR>',//)
C
C     **** DEMO - CC
C
1080  FORMAT(' cc  (? for help):',//,
     1' The system is now asking who you would like carbon copies (cc) s
     2ent to.',/,' Send a copy to WILLBE and to yourself (it is usually
     3considered a good',/,' idea to retain a copy for yourself).',//,'
     4cc  (? for help) : ',$)
1085  FORMAT(' What you should have typed was: WILLBE, (YOUR ACCOUNT NAM
     1E)<CR>',//)
C
C     **** DEMO - SUBJECT
C
1090  FORMAT(' Subject:',//,
     1' The system is now asking for a subject line for your message.  L
     2et''s give',/,' the message the subject of "PASCAL".',//,' Subject
     3: ',$)
1095  FORMAT(' What you should have typed, was:  PASCAL<CR>',//)
C
C     **** DEMO - MESSAGE
C
1100  FORMAT(' Message  (? for help):',//,
     1' The system is now asking you to input your message.  Upon comple
     2tion of',/,' entering your message, you enter a ^Z (control-Z).  S
     3imulate it here by',/,' typing a "^Z<CR>".  Try entering the follo
     4wing message:  What pascal',/,' languages are available on the top
     5s-20 system.',//,' Message  (? for help) : ',/,$)
1105  FORMAT(' What you should have typed, was:',//,
     1' WHAT PASCAL LANGUAGES ARE AVAILABLE ON THE TOPS-20 SYSTEM^Z',//)
C
C     **** DEMO - QUEUE
C
1110  FORMAT(' Q,S,?,carriage return:',//,
     1' You are being asked whether you desire to wait while the message
     2 is being',/,' sent (S), or to have the system process it at its c
     3onvenience while you',/,' are free to continue with something else
     4.  Tell the system to queue (Q).',//,' Q,S,?, carriage return:',$)
1115  FORMAT(' What you should have typed, was: Q<CR>',//)
C
C     **** DEMO - TYPE
```

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```
C
1120  FORMAT(' Q,S,?,carriage return: Queue',//,
     1'   JONESKF -- queued',/,'   WILLBE -- queued',/,'   (your account)
     2-- queued',//,' <-',//,
     3' The system is now processing the message and has given you the M
     4SG command',/,' level prompt; awaiting your next command.  Let''s
     5read a message.  To do so',/,' we enter the T (type) command.',//,
     6' <- ',$)
1125  FORMAT(' What you should have typed, was: T<CR>',//)
C
C     **** DEMO - MESSAGE SEQUENCE (ONE MESSAGE)
C
1130  FORMAT(' <- type (message sequence) ',//,
     1' The system is now asking for which message(s) you wish to read.
     2 Let''s',/,' read message 14.',//,
     3' <- type (message sequence) ',$)
1135  FORMAT(' What you should have typed, was: 14<CR>',//)
C
C     **** DEMO - HEADERS
C
1140  FORMAT(' (msg. # 14, 299 chars)',/,' Mail -From: ACTION created at
     1 16-Oct-85 19:13:01',/,
     2' Date:  16 Oct 1985 19:13:01 EDT',/, ' From:  ACTION@USC-ISI.ARPA
     3',/,' Subject: MSG',/,' To:  (Your account)',//,
     4'     A very special file in your Directory is the "MAIL.TXT" file.
     5 This file',/,' controls your "mailbox", and therefore should nev
     6er be deleted.',//,
     7' -----------',/,'      That was message 14',//,
     8' Please note the significance of the above message.',//,
     9' NEVER DELETE THE MAIL.TXT FILE.',//,
     *' If we had not remembered the exact message number of this messag
     1e, we could',/,' have found it with the HEADER command.  We could
     2do this by looking at all',/,' "headers", or if we knew its approx
     3imate number we could specify a range of',/,' message headers to b
     4e outputed by the system.  Let''s give this a try.  First,',/,' in
     5voke the H (header) command.',//,' <- ',$)
1145  FORMAT(' What you should have typed, was: H<CR>',//)
C
C     **** DEMO - MESSAGE SEQUENCE (:)
C
1150  FORMAT(' <- Headers (message sequence) ',//,
     1' The system is now asking which headers you wish to see.  Tell it
     2 10 through',/,' 15, since we believe this is where our message of
     3 interest lies.',//,
     4' <- Headers (message sequence) ',$)
1155  FORMAT(' What you should have typed, was:  10:15<CR>',//)
C
1160  FORMAT('   10    15 Aug  Remind Daemon          WHO WAS FIRST',/,
     1'   11    17 Aug  Gary Poock  <POOCK@USC-  "EYE"dentification',/,
     2'   12     5 Sep  Tom Brown  <BROWNTJ@USC  EE MADE SIMPLE FOR C3',/,
     3'   13     9 Oct  To:  FRANKSDZ@USC-ISI.A  IF YOU SAY SO',/,
     4'   14    16 Oct  ACTION                   MSG',/,
     5'   15    17 Oct  To:  SMITHSL@USC-ISI.AR  PROPER ATTIRE',//,
     6' From the above we find that the message of interest is number 14
     7.  Note also',/,' the other information presented.  We can tell th
```

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        8at we received messages 10,',/,' 11, and 13 and that we sent messa
        9ges 13 and 15.',//)
C
C    **** SIGN-OFF ROUTINE
C
1240  FORMAT(' This completes the tutorial on MSG.  Remember to use the
      1"?" any time you',/,' are not quite sure what the system is asking
      2 for.',//)
1250  FORMAT(' Sorry to see you quit early.  Good bye.',//)
1300  FORMAT(' WOULD YOU LIKE TO CONTINUE (Y or N)?',$)
1320  FORMAT(' WOULD YOU LIKE A DEMONSTRATION OF THE ABOVE COMMANDS (Y o
      1r N)?',$)
1340  FORMAT(' No.  Try again.',//)
1350  FORMAT(' You still don''t have it right.',//)
1360  FORMAT(' CARE TO TRY AGAIN (Y or N)?',$)
1370  FORMAT(' ENTER ANY KEY TO RETURN TO THE MAIN MENU: ',$)
1400  FORMAT(1A1)
1410  FORMAT(1A3)
1420  FORMAT(3A5)
1430  FORMAT(7A5)
1440  FORMAT(1A2)
1450  FORMAT(2A5)
1460  FORMAT(1A5)
1500  FORMAT(//,' @',$)
1505  FORMAT(//,' <-',$)
1510  FORMAT(//,' <- sndmsg [confirm]',S)
1515  FORMAT(//,' TO (? for help): ',S)
1520  FORMAT(//,' cc (? for help): ',S)
1525  FORMAT(//,' subject: ',S)
1530  FORMAT(//,' message (? for help): ',S)
1535  FORMAT(//,' Q,S,? carriage return ',S)
1540  FORMAT(//,' type (message sequence) ',S)
1545  FORMAT(//,' headers (message sequence) ',S)
1600  FORMAT(////)
      END
C
C
```

```
C
C
        SUBROUTINE AXED(DUM)
C
C       ================XED SUBROUTINE================================
C       =THIS SUBROUTINE EXPLAINS AND DEMONSTRATES THE "XED" TEXT EDITOR =
C       ================================================================
C
        DIMENSION INPUT(1),DEM1(1),DEM2(2),DEM3(3),DEM7(7)
C
C       **** INTRODUCTION
C
        TYPE 1600
        TYPE 1000
        TYPE 1300
        READ(05,1400,ERR=10) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C       **** XED COMMAND LEVEL COMMANDS
C
10      TYPE 1010
        TYPE 1300
        READ(05,1400,ERR=15) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
15      TYPE 1020
        TYPE 1300
        READ(05,1400,ERR=20) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C       **** COMMANDS WITHIN INSERT AND APPEND
C
20      TYPE 1030
        TYPE 1320
        READ(05,1400,ERR=25) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C       **** DEMONSTRATION OF THE XED COMMAND
C
25      NUM=0
30      TYPE 1040
32      READ(05,1410,ERR=30) DEM1
        TYPE 1600
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
        IF(DEM1(1).EQ.'XED'.OR.DEM1(1).EQ.'xed')GO TO 50
        NUM=NUM+1
        GO TO (35,40,45) NUM
35      TYPE 1340
        TYPE1500
        GO TO 32
40      TYPE 1350
        TYPE 1500
```

```
                 GO TO 32
45               TYPE 1045
                 TYPE 1360
                 TYPE 1600
                 READ(05,1400,ERR=45) INPUT
                 TYPE 1600
                 IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
                 IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 25
C
C       **** DEMONSTRATION OF THE READ COMMAND
C
50               NUM=0
55               TYPE 1050
57               READ(05,1400,ERR=55) INPUT
                 TYPE 1600
                 IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
                 IF(INPUT(1).EQ.'R'.OR.INPUT(1).EQ.'r')GO TO 75
                 NUM=NUM+1
                 GO TO (60,65,70) NUM
60               TYPE 1340
                 TYPE 1505
                 GO TO 57
65               TYPE 1350
                 TYPE 1505
                 GO TO 57
70               TYPE 1055
                 TYPE 1360
                 READ(05,1400,ERR=70) INPUT
                 TYPE 1600
                 IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
                 IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 50
C
C       **** DEMONSTRATION OF READING IN A FILE
C
75               NUM=0
80               TYPE 1060
82               READ(05,1420,ERR=80) DEM3
                 TYPE 1600
                 IF(DEM3(1).EQ.'Q'.OR.DEM3(1).EQ.'q')GO TO 520
                 IF(DEM3(1).EQ.'INVIS'.AND.DEM3(2).EQ.'.IBLE'.AND.DEM3(3).EQ.'.1'.O
                1R.DEM3(1).EQ.'invis'.AND.DEM3(2).EQ.'.ible'.AND.DEM3(3).EQ.'.1')GO
                2 TO 100
                 NUM=NUM+1
                 GO TO (85,90,95) NUM
85               TYPE 1340
                 TYPE 1510
                 GO TO 82
90               TYPE 1350
                 TYPE 1510
                 GO TO 82
95               TYPE 1065
                 TYPE 1360
                 READ(05,1400,ERR=95) INPUT
                 TYPE 1600
                 IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
```

```
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 75
C
C     •••• DEMONSTRATION OF THE LIST COMMAND
C
100   NUM=O
105   TYPE 1070
107   READ(O5,1400,ERR=105) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
      IF(INPUT(1).EQ.'L'.OR.INPUT(1).EQ.'l')GO TO 125
      NUM=NUM+1
      GO TO (110,115,120) NUM
110   TYPE 1340
      TYPE 1515
      GO TO 107
115   TYPE 1350
      TYPE 1515
      GO TO 107
120   TYPE 1075
      TYPE 1360
      READ(O5,1400,ERR=120) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 100
C
C     •••• DEMONSTRATION OF THE VIEW COMMAND
C
125   NUM=O
130   TYPE 1080
132   READ(O5,1400,ERR=130) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
      IF(INPUT(1).EQ.'V'.OR.INPUT(1).EQ.'v')GO TO 150
      NUM=NUM+1
      GO TO (135,140,145) NUM
135   TYPE 1340
      TYPE 1515
      GO TO 132
140   TYPE 1350
      TYPE 1515
      GO TO 132
145   TYPE 1085
      TYPE 1360
      READ(O5,1400,ERR=145) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 125
C
C     •••• DEMONSTRATION OF THE INSERT COMMAND
C
150   NUM=O
155   TYPE 1090
157   READ(O5,1400,ERR=155) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
```

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        IF(INPUT(1).EQ.'I'.OR.INPUT(1).EQ.'i')GO TO 175
        NUM=NUM+1
        GO TO (160,165,170) NUM
160     TYPE 1340
        TYPE 1520
        GO TO 157
165     TYPE 1350
        TYPE 1520
        GO TO 157
170     TYPE 1095
        TYPE 1360
        READ(05,1400,ERR=170) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 150
C
C       **** DEMONSTRATION OF INSERTING MATERIAL
C
175     NUM=0
180     TYPE 1100
182     READ(05,1430,ERR=180) DEM7
        TYPE 1600
        IF(DEM7(1).EQ.'Q'.OR.DEM7(1).EQ.'q')GO TO 520
        IF(DEM7(1).EQ.'use t'.AND.DEM7(2).EQ.'he "S'.AND.DEM7(3).EQ.'ET FI
     1'.AND.DEM7(4).EQ.'LE VI'.AND.DEM7(5).EQ.'SIBLE'.AND.DEM7(6).EQ.'"
     2com'.AND.DEM7(7).EQ.'mand.')GO TO 200
        NUM=NUM+1
        GO TO (185,190,195) NUM
185     TYPE 1340
        TYPE 1525
        GO TO 182
190     TYPE 1350
        TYPE 1525
        GO TO 182
195     TYPE 1105
        TYPE 1360
        READ(05,1400,ERR=195) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 175
C
C       **** DEMONSTRATION OF END OF FILE COMMAND
C
200     NUM=0
205     TYPE 1110
207     READ(05,1440,ERR=205) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Z'.OR.INPUT(1).EQ.'z')GO TO 225
        NUM=NUM+1
        GO TO (210,215,220) NUM
210     TYPE 1340
        TYPE 1530
        GO TO 207
215     TYPE 1350
```

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```
                TYPE 1530
                GO TO 207
220             TYPE 1115
                TYPE 1360
                READ(05,1400,ERR=220) INPUT
                TYPE 1600
                IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
                IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 200
C
C       **** DEMONSTRATION OF KILL COMMAND
C
225             NUM=0
230             TYPE 1120
231             READ(05,1400,ERR=230) INPUT
                TYPE 1600
                IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
                IF(INPUT(1).NE.'K'.AND.INPUT(1).NE.'k')GO TO 232
                TYPE 1123
                READ(05,1400,ERR=230) INPUT
                IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
                IF(INPUT(1).EQ.'1'.OR.INPUT(1).EQ.' ')GO TO 250
232             NUM=NUM+1
                GO TO (235,240,245) NUM
235             TYPE 1340
                TYPE 1535
                GO TO 231
240             TYPE 1350
                TYPE 1535
                GO TO 232
245             TYPE 1125
                TYPE 1360
                READ(05,1400,ERR=245) INPUT
                TYPE 1600
                IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
                IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 225
C
C       **** DEMONSTRATION OF THE WRITE COMMAND
C
250             NUM=0
255             TYPE 1130
257             READ(05,1400,ERR=255) INPUT
                TYPE 1600
                IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
                IF(INPUT(1).EQ.'w'.OR.INPUT(1).EQ.'w')GO TO 275
                NUM=NUM+1
                GO TO (260,265,270) NUM
260             TYPE 1340
                TYPE 1505
                GO TO 257
265             TYPE 1350
                TYPE 1505
                GO TO 257
270             TYPE 1135
                TYPE 1360
                READ(05,1400,ERR=270) INPUT
```

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          TYPE 1600
          IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
          IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 250
C
C         **** DEMONSTRATION OF WRITING TO A FILE
C
275       NUM=0
280       TYPE 1140
282       READ(05,1450,ERR=280) DEM2
          TYPE 1600
          IF(DEM2(1).EQ.'Q'.OR.DEM2(1).EQ.'q')GO TO 520
          IF(DEM2(1).EQ.'INVIS'.AND.DEM2(2).EQ.'.IBLE'.OR.DEM2(1).EQ.'invis'
         1.AND.DEM2(2).EQ.'.ible')GO TO 300
          NUM=NUM+1
          GO TO (285,290,295) NUM
285       TYPE 1340
          TYPE 1540
          GO TO 282
290       TYPE 1350
          TYPE 1540
          GO TO 282
295       TYPE 1145
          TYPE 1360
          READ(05,1400,ERR=295) INPUT
          TYPE 1600
          IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
          IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 275
C
C         **** DEMONSTRATION OF THE ZAP COMMAND
C
300       NUM=0
305       TYPE 1150
307       READ(05,1400,ERR=305) INPUT
          TYPE 1600
          IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
          IF(INPUT(1).EQ.'Z'.OR.INPUT(1).EQ.'z')GO TO 325
          NUM=NUM+1
          GO TO (310,315,320) NUM
310       TYPE 1340
          TYPE 1505
          GO TO 307
315       TYPE 1350
          TYPE 1505
          GO TO 307
320       TYPE 1155
          TYPE 1360
          READ(05,1400,ERR=320) INPUT
          TYPE 1600
          IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
          IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 300
C
C         **** DEMONSTRATION OF THE APPEND COMMAND
C
325       NUM=0
330       TYPE 1160
```

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```
332     READ(05,1400,ERR=330) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'A'.OR.INPUT(1).EQ.'a')GO TO 350
        NUM=NUM+1
        GO TO (335,340,345) NUM
335     TYPE 1340
        TYPE 1515
        GO TO 332
340     TYPE 1350
        TYPE 1515
        GO TO 332
345     TYPE 1165
        TYPE 1360
        READ(05,1400,ERR=345) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 325
C
C       **** DEMONSTRATION OF KILLING MORE THAN ONE LINE
C
350     NUM=0
355     TYPE 1170
356     READ(05,1440,ERR=355) DEM1
        TYPE 1600
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
        IF(DEM1(1).NE.'3K'.AND.DEM1(1).NE.'3k')GO TO 357
        TYPE 1173
        READ(05,1400,ERR=355) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'1'.OR.INPUT(1).EQ.' ')GO TO 375
357     NUM=NUM+1
        GO TO (360,365,370) NUM
360     TYPE 1340
        TYPE 1515
        GO TO 356
365     TYPE 1350
        TYPE 1515
        GO TO 356
370     TYPE 1175
        TYPE 1360
        READ(05,1400,ERR=370) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 350
C
C       **** DEMONSTRATION OF THE JAM COMMAND
C
375     NUM=0
380     TYPE 1180
382     READ(05,1440,ERR=380) DEM1
        TYPE 1600
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
        IF(DEM1(1).EQ.'3J'.OR.DEM1(1).EQ.'J'.OR.DEM1(1).EQ.'3j'.OR.DEM1(1)
```

```
         1.EQ.'j')GO TO 400
         NUM=NUM+1
         GO TO (385,390,395) NUM
385      TYPE 1340
         TYPE 1545
         GO TO 382
390      TYPE 1350
         TYPE 1545
         GO TO 382
395      TYPE 1185
         TYPE 1360 ·
         READ(05,1400,ERR=395) INPUT
         TYPE 1600
         IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
         IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 375
C
C        **** DEMONSTRATION OF TYPING OTHER THAN CURRENT LINE
C
400      NUM=0
405      TYPE 1190
407      READ(05,1440,ERR=405) DEM1
         TYPE 1600
         IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
         IF(DEM1(1).EQ.'3T'.OR.DEM1(1).EQ.'3t')GO TO 425
         NUM=NUM+1
         GO TO (410,415,420) NUM
410      TYPE 1340
         TYPE 1515
         GO TO 407
415      TYPE 1350
         TYPE 1515
         GO TO 407
420      TYPE 1195
         TYPE 1360
         READ(05,1400,ERR=420) INPUT
         TYPE 1600
         IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
         IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 400
C
C        **** DEMONSTRATION OF TYPING MORE THAN ONE LINE
C
425      NUM=0
430      TYPE 1200
432      READ(05,1400,ERR=430) INPUT
         TYPE 1600
         IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
         IF(INPUT(1).EQ.'2')GO TO 450
         NUM=NUM+1
         GO TO (435,440,445) NUM
435      TYPE 1340
         TYPE 1550
         GO TO 432
440      TYPE 1350
         TYPE 1550
         GO TO 432
```

```fortran
445    TYPE 1205
       TYPE 1360
       READ(05,1400,ERR=445) INPUT
       TYPE 1600
       IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
       IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 425
C
C      **** DEMONSTRATION OF THE EXIT COMMAND
C
450    NUM=0
455    TYPE 1210
457    READ(05,1400,ERR=455) INPUT
       TYPE 1600
       IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
       IF(INPUT(1).EQ.'E'.OR.INPUT(1).EQ.'e')GO TO 475
       NUM=NUM+1
       GO TO (460,465,470) NUM
460    TYPE 1340
       TYPE 1505
       GO TO 457
465    TYPE 1350
       TYPE 1505
       GO TO 457
470    TYPE 1215
       TYPE 1360
       READ(05,1400,ERR=470) INPUT
       TYPE 1600
       IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
       IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 450
C
C      **** DEMONSTRATION OF FILE STORAGE BEFORE EXITING
C
475    NUM=0
480    TYPE 1220
482    READ(05,1450,ERR=480) DEM2
       TYPE 1600
       IF(DEM2(1).EQ.'Q'.OR.DEM2(1).EQ.'q')GO TO 520
       IF(DEM2(1).EQ.'INFO.'.AND.DEM2(2).EQ.'FILE'.OR.DEM2(1).EQ.'info.'
      1.AND.DEM2(2).EQ.'file')GO TO 499
       NUM=NUM+1
       GO TO (485,490,495) NUM
485    TYPE 1340
       TYPE 1540
       GO TO 482
490    TYPE 1350
       TYPE 1540
       GO TO 482
495    TYPE 1225
       TYPE 1360
       READ(05,1400,ERR=495) INPUT
       TYPE 1600
       IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
       IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 475
499    TYPE 1230
C
```

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C      **** SIGN-OFF ROUTINE
C
500    TYPE 1240
       TYPE 1370
       READ(05,1400,ERR=510) INPUT
510    RETURN
520    TYPE 1250
       TYPE 1370
       READ(05,1400,ERR=530) INPUT
530    RETURN
C
C
C      ******FORMATS FOR XED SUBROUTINE*************************************
C
C      **** INTRODUCTION
C
1000   FORMAT('                              XED',//,
      1' XED is a text editor: specifically a line editor.  It allows you
      2 to both',/,' create and edit text, one line at a time.  Entry int
      3o XED is by typing XED',/,' after the "@" prompt, followed by a <C
      4R>.',//,' Definitions:',//,
      5' Text Buffer    - The text buffer is your current working space.'
      6,//,
      7' Print Buffer   - The area where material you have "KILL"ed is
      8 placed.  Note,',/,'                   only the material from the L
      9AST KILL operation is retained.',//,
      *' Command Level  - The level you are at when you enter XED; distin
      1guishable by',/,'                    the ":" prompt.',//,
      2' Line Number    - Line numbers are assigned by XED to each line i
      3n your text',/,'                   buffer, starting with line numbe
      4r one.  The numbers are for',/,'                    reference while
      5within XED and are not stored into the file.',//)
C
C      **** XED COMMAND LEVEL COMMANDS
C
1010   FORMAT(' XED COMMAND LEVEL COMMANDS',//,
      *' COMMAND             USES (s)',//,
      1' A    - APPEND       To enter text after the current line.',/,
      2' B    - BACK UP      Create back up file.',//,
      3' C    - CHANGE       To modify current lines.',//,
      4' E    - EXIT         Exits XED, after file save, back to system le
      5vel.',//,' F    - FIND        Locates a specific letter, word or ph
      6rase.',//,
      7' G    - GROUP        Joins current line with following line.',//,
      8' I    - INSERT       Inserts text before current line.',//,
      9' J    - JAM          Jams the contents of Print Dump after the cur
      *rent line.',//,
      1' K    - KILL         Places current or specified line (s) into Pri
      2nt Dump.',//,
      3' L    - LIST         Outputs entire text buffer without line numbe
      4rs.',//,
      5' P    - PRINT DUMP  Prints contents of Print Dump. ',/,
      6' Q    - QUIT         Quits XED, without file save, back to system
      7level.',//,
      8' R    - READ         Reads into XED the contents of a file.',/,
```

```
      9' S     - SEARCH       Like Find except it looks for all occurrences
     •.',//)
C
1020  FORMAT(' COMMAND              USE',//,
     1' T     - TYPE          Types out current line.',/,
     2' V     - VIEW          Displays the current and following 15 lines.'
     3,/,
     4' W     - WRITE         Writes current contents of text buffer to fil
     5e.',//,
     6' X     - EXCHANGE      Searches for specific text and replaces it wi
     7th another.',/,' Z     - ZAP          Puts your entire file into the
     8 Print Dump.',/,
     9' ''     - SWITCH DUMP  Swaps contents of the Print and Text Buffers
     •.',/,
     1' ,     - TYPE CONTXT   Types current line and five lines before and
     2after.',/,
     3' /     - TYPE          Types the current line.',/,
     4' x     - SNDMSG        Utilizes current text buffer as body of messe
     5ge.',//,
     6' •     - LAST LINE     Moves you to the last line of the file.',/,
     7' ?     - COMMANDS      Displays available commands.',//,
     8' ^J    - TYPE          Types the next line.',/,
     9' ^Q    - ABORT         Aborts partially completed commands.',/,
     •' _     - FORMAT        Right justifies paragraph.',//)
C
C     •••• COMMANDS WITHIN INSERT AND APPEND
C
1030  FORMAT(' COMMANDS WITHIN INSERT OR APPEND:',//,
     1' COMMAND              USE',//,
     2' (DEL KEY)            Deletes the letter to the left of the cursor.
     3',/,
     4' ^R    - RETYPE        Retype the current line, leaving cursor at th
     5e end.',//,
     6' ^X    - KILL LINE     Kills the line to the left of the cursor.',/,
     7' ^W    - DELETE WORD   Deletes the word to the left of the cursor.',
     8/,
     9' ^Z    - RETURN        Returns you to the command level.',//,
     •' COMMANDS WITHIN CHANGE:',//,
     1' S     - SKIP          Skips to a specified character.',/,
     2' D     - DELETE        Deletes the character over the cursor.',/,
     3' I     - INSERT        Inserts characters.',/,
     4' E     - END           Moves cursor to end of line.',/,
     5' ^D    - ABORT         Aborts any changes you have made.',/,
     6' ?     - COMMANDS      Types out available commands.',/,
     7' B     - BREAK         Breaks line in two at cursor position.',/,
     8' <CR> - RETURN         Return to XED command level.',//)
C
C     •••• DEMO - ENTRY INTO XED
C
1040  FORMAT(' NOTE:  YOU MAY QUIT THE FOLLOWING DEMONSTRATION AT ANY TI
     1ME, SIMPLY BY',/,' TYPING A "Q" FOLLOWED BY A CARRIAGE RETURN, IN
     2REPLY TO ANY OF THE PROMPTS.',//,
     •        ' OK.  Here we go.  First off, we need to get from the Exec
     1utive Command level',/,' to the XED command level.  To do this, we
     2 type XED after the "@" prompt,',/,' followed by a <CR>.  Give it
```

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      3a try.',//,' @',$)
1045  FORMAT(' What you should have typed, was:   XED <CR>',//)
C
C     **** DEMO - THE R (READ) COMMAND
C
1050  FORMAT(' XED Version  4.2  (30-Aug-82)',/,' :',//,
     1' This puts us at the XED command level prompt.',//,
     2' Now we have a choice.   We can begin  entering text  for a new f
     3ile or we  can',/,
     4' edit text from an existing file.  First  let''s try  editing an
     5existing file.',/,
     6' To bring in the existing file, we type an  "R" after the prompt.
     7  (Note  that',/,
     8' during this simulation, you will need to type a  <CR> after ente
     9ring the first',/,
     *' letter of each command.  In XED itself, this is not required).
     1So now we type',//,
     2' "R <CR>"  after the  ":"  prompt.   The system will respond by
     3completing the',/,
     4' command and then  asking you  what file you wish to insert.   Le
     5t''s give it a',/,
     6' try.',//,' :',$)
1055  FORMAT(' What you should have typed, was:  R <CR>',//)
C
C     **** READING IN A FILE
C
1060  FORMAT(' read',/,' Input File:',//,
     1' At this point you type in the "FileName.FileType.FileNumber" of
     2the file',//,' you wish to edit.  Let''s edit "INVIS.IBLE.1".',//,
     3' Input File:',$)
1065  FORMAT(' What you should have typed, was:  INVIS.IBLE.1 <CR>',//)
C
C     **** DEMO - THE L (LIST) COMMAND
C
1070  FORMAT(' 8 LINES',/,' 1:',//,
     1' From the above, we see that the file has been read into the text
     2 buffer, is',/,
     3' eight lines in length and the current line is line 1.  Now we wi
     4sh to take a',/,
     5' look at this file.  Two of the commands we can use to do this ar
     *e the "VIEW"',/,
     *' and "LIST" commands.  Give the "LIST" command a try.',//,
     6'    REMEMBER: ONLY TYPE IN THE FIRST LETTER FOLLOWED BY A <CR>.',/
     7/,' 1:',$)
1075  FORMAT(' What you should have typed, was: L <CR>',//)
C
C     **** DEMO - THE V (VIEW) COMMAND
C
1080  FORMAT(' list',//,' INVISIBLE:',/,
     1' Files that have been marked requesting archival are said to be "
     2INVISIBLE",',/,' meaning that these filenames will not show up in
     3the usual @ Directory',/,' listing unless a special subcommand is
     4given:  @@invisible(files only).',/,' Note:  Although a file does
     5not show up in the regular directory listing, ',/,' it is still in
     6 your directory and will not really go away until the Archive',//,'
```

```
        7 has been run (on weekends).  If you prefer that the filename rema
        8ins visible,',/,' use the "SET FIEL VISIBLE" command.',///,
        9' Reading the above file, we note a mistake in the last line.  We
        *know this is',/,' line eight, because the file is only eight lines
        1 long (we could also count the',/,' lines, but this would be a ver
        2y laborious task in a large file with a mistake',/,' somewhere in
        3the middle).  How then are we to find and correct our mistake?',/,
        4' Let''s try typing out the contents of the file with the "VIEW" c
        5ommand.',//,' 1:',$)
1085  FORMAT(' What you should have typed, was:  V <CR>',//)
C
C     **** DEMO - THE I (INSERT) COMMAND
C
1090  FORMAT(' view',//,
        1' 1*INVISIBLE',/,' 2*Files that have been marked requesting archiv
        2al are said to be "INVISIBLE",',/,' 3*meaning that these filenames
        3 will not show up in the usual @ Directory',/,' 4*listing unless a
        4 special subcommand is given: @@invisible(files only).',/,' 5*Not
        5e: Although a file does not show up in the regular directory list
        6ing,',/,' 6*it is still in your directory and will not really go a
        7way until the Archive',/,' 7*has been run (on weekends).  If you p
        8refer that the filename remains visible,',/,' 8*use the "SET FIEL
        9VISIBLE" command.',//,
        *' This allows us a very easy way to determine the line number.  No
        1w, we wish to',/,
        2' correct FIEL to FILE.  We retype the line, "INSERT"ing it before
        3 line 8, or',/,
        4' "APPEND"ing it after line 7.  Let''s fix line 8 using the INSERT
        5 method.',//,
        6' 8:',$)
1095  FORMAT(' What you should have typed, was:  I <CR>',//)
C
C     **** DEMO - INSERTING TEXT
C
1100  FORMAT(' insert',//,' 8*',//,
        1' Now we are  ready  to retype  the line.  (Remember the ^R, ^W, ^
        2X and Del Key',/,' commands.  In fact, make a few mistakes of your
        3 own while typing in the',/,' correct line, and then use these com
        4mands to make corrections.  Just insure',/,' that you have the lin
        5e completely right before typing the <CR>).',//,' 8*',$)
1105  FORMAT(' What you should have typed, was:',//,'    use the "SET FI
        1LE VISIBLE" command.',//)
C
C     DEMO - THE ^Z COMMAND
C
1110  FORMAT(' 9*',//,
        1' Now we  have corrected  line eight,  but have been left in  posi
        2tion to enter',/,' material into line nine.  Since we do not desir
        3e to enter  material in  this',/,' line, we type a ^Z.',//,
        4' (FOR THE PURPOSES OF THIS TUTORIAL, JUST USE A Z)',//,
        5' 8*use the "SET FILE VISIBLE" command.',/,' 9*',$)
1115  FORMAT(' What you should have typed, was: Z <CR>',//)
C
C     **** DEMO - THE K (KILL) COMMAND
C
```

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```
1120   FORMAT(' 9:',/,
      1' Remember that  what we have  just done is insert a new line eigh
      2t.  That means',/,' that the old line eight has become the new lin
      3e nine.  However, we no longer',/,
      4' want this line at all.  To get rid of it we use the KILL command
      5.  To KILL',/,' line 9, we start by ensuring that line nine is the
      6 current line, which in',/,' fact it is.  If we were not sure, we
      7would type a "9 <CR>", which would make',/,' line 9 the current li
      8ne.  To KILL two lines, we type the K after the ":"',/,' prompt, l
      9et the system respond with "ill", and then type the number "1",',/
      *,' indicating that we wish to KILL one line.  Note: the default fo
      1r the KILL',/,' command is "1", therefore it need not be typed.  O
      2K.  Get rid of line 9.',//,' 9:',$)
1123   FORMAT(///,' 9:Kill ',$)
1125   FORMAT(' What you should have typed, was one of the following:',//
      1,'  K <CR> followed by a 1 or blank and a <CR> or',/,
      2'  k <CR> follwoed by a 1 or blank and a <CR>.',//)
C
C     **** - THE W (WRITE) COMMAND
C
1130   FORMAT(' 8:',//,
      1' The above indicates that you have "KILL"ed line 9.  Did you real
      2ize that',/,' there were four possible ways you could have given t
      3he "KILL" command in',/,' this case?  Specifically, they are:',//,
      4'         9KILL1     KILL1     9KILL     KILL',//,
      5' Now that we are done with this file, we wish to save it, but do
      6not wish',/,' to leave XED.  Therefore, we use the WRITE command.
      7 Go ahead.',//,' :',$)
1135   FORMAT(' What you should have typed, was:  W <CR>',//)
C
C     **** - WRITING TO A FILE
C
1140   FORMAT(' write',/,
      1' Output File:',//,
      2' We are being asked for the file we wish the material in the text
      3 buffer',/,' to be written.  Send it to INVIS.IBLE',//,
      4' Output File:',$)
1145   FORMAT(' What you should have typed, was:  INVIS.IBLE <CR>',//)
C
C     **** DEMO - THE Z (ZAP) COMMAND
C
1150   FORMAT(' INVIS.IBLE.2',/,' 8 lines',/,' :',/,
      1' The system has filed the material for use, yet left us both with
      2in XED and',/,' within the file we were editing.  Note that the sy
      3stem has given this file',/,' a file number of "2", indicating tha
      4t there was one previous file by the',/,' same Name and Type.',//,
      1' Now let''s say we are finished with this file but wish to enter
      2material into',/,' another file.  We could use the QUIT or EXIT co
      3mmands, but then we would have',/,' to re-enter XED.  It''s much e
      4asier, and timelier, to just "ZAP" the material ',/,' in the text
      5buffer (ie KILL it).  Give it a shot!',//,' :',$)
1155   FORMAT(' What you should have typed, was:  Z <CR>',//)
C
C     **** DEMO - THE A (APPEND) COMMAND
C
```

```
1160  FORMAT(' zap',//,
     1' Good!  Now we have an empty text buffer.  Let''s try entering so
     2me original',/,' text.  This time use APPEND to get into the text
     3entry mode.',//,' 1:',$)
1165  FORMAT(' What you should have typed, was:  A  <CR>',//)
C
C     **** DEMO - ENTERING TEXT
C
1170  FORMAT(' append',/,' 1*',//,
     1' Now we are ready to enter text.  Let me do you a favor and enter
     2 some for you.',/,' Note how at the end of a line, I type a <CR> a
     3nd the system provides the next',/,' line number for us.',//,
     4' 1*This tutorial does not explicitly cover a few of the commands,
     5 such as FIND,',/,' 2*GROUP, and SEARCH.  You should be able to fi
     6gure these out for yourself, if',/,' 3*with.  Do this from the XED
     7 command level - ie at the ":" prompt.',/,' 4*not, try the HELP co
     8mmand.  That is, type H and the command you need help',//,
     9' Looks like I got the order of the last two lines mixed up!  How
     *do we fix',/,' this?  Easy, we can KILL line three, this will put
     1the contents of line three',/,' into the Print Buffer and line fou
     2r will become line three.  Then we ensure',/,' that line 3 is the
     3current line and JAM the contents of the Print Buffer back',//,' in
     4to the text buffer.  Remember, the JAM command works like the APPE
     5ND command,',/,
     6' it places the material in the line AFTER the current line.  Go a
     7head and KILL',/,
     8' line 3.',//,' 1:',$)
1173  FORMAT(//,' 1:kill ',$)
1175  FORMAT(' What you should have typed, was:',/,' 3K <CR> <CR> or 3K
     1<CR>  1  <CR>',//)
C
C     **** DEMO - THE J (JAM) COMMAND
C
1180  FORMAT(' 3:',//,
     1' Now go ahead and JAM in the material from the print buffer.',//,
     2' 3:',$)
1185  FORMAT(' What you should have typed, was:  3J <CR> or J <CR>',//)
C
C     **** DEMO - THE T (TYPE) COMMAND
C
1190  FORMAT(' jam',/,
     1' 4*with.  Do this from the XED command level - ie at the ":" prom
     2pt.',//,
     3' Very good!  Now let''s see if we got it right by typing out line
     4s three and',/,' four.  This can be done by using the VIEW command
     5, the LIST command or the',/,' TYPE command.  Similarly, the TYPE
     6command can be used to type out each line',/,' separately or both
     7together.  To type them both, we first specify the "current',/,' l
     8ine number" (3) then issue the TYPE command (T) and then the numbe
     9r of lines',/,' we wish typed (2).  Give it a try.',//,' 1:',$)
1195  FORMAT(' What you should have typed, was:  3T  <CR>',//)
1200  FORMAT(//,' 1:3type ',$)
1205  FORMAT(' What you should have typed, was:  2 <CR>',//)
C
C     **** DEMO - THE E (EXIT) COMMAND
```

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```
C
1210  FORMAT(' 3*not, try the HELP command.  That is, type H and the com
     1mand you need help',/,' 4*with.  Do this from the XED command leve
     2l - ie at the ":" prompt.',//,
     3' Now that we have things the way we want them, we''re done.  Note
     4 quit',/,' though.  If we issue the QUIT command at this point, we
     5 will leave XED as',/,' desired, but we will also loose the materi
     6al.  We either need to first WRITE',/,
     7' the contents into a file and then quit, or use the EXIT command.
     8  The EXIT',/,' command allows us to write what is currently in th
     9e text buffer into a file',/,' before releasing us from XED.  (Not
     *e:  You could also use the ^C command.',/,
     1' This will take you to the Executive level, but you would lose th
     *e material in',/,
     2' the text buffer, unless your next command is CONTINUE.  This wil
     *l place you',/,
     *' back at the point you were at).  To use the EXIT command, we typ
     *e the "E"',/,
     3' at the XED command level prompt.  Go ahead.',//,' :',$)
1215  FORMAT(' What you should have typed, was:  E  <CR>',//)
C
C     **** DEMO - WRITING TO A FILE (WITH EXIT)
C
1220  FORMAT(' exit',/,' Output File:',//,
     1' See!  The system needs the name of the file to store the materia
     2l.  Store',/,' it in the Info.file',//,' Output File:',$)
1225  FORMAT(' What you should have typed, was:  INFO.FILE <CR>',//)
C
C     **** COMPLETION
C
1230  FORMAT(' INFO.FILE.1 !New Generation!',/,' 4 lines',/,' @',//,
     1' The system has stored the material for you and placed you back a
     2t the Executive',/,' level.',//)
C
C     **** SIGN-OFF ROUTINE
C
1240  FORMAT(' This concludes the XED portion of this tutorial.  Remembe
     1r to use the "?" to',/,' find the available command, and "HELP Com
     2mand Name" to find out how to use a',/,' particular command.',//)
1250  FORMAT(' SORRY YOU HAVE A HOT DATE AND HAVE TO LEAVE SO SOON.',//)
1300  FORMAT(' WOULD YOU LIKE TO CONTINUE (Y or N)?',$)
1320  FORMAT(' WOULD YOU LIKE A DEMONSTRATION OF THE ABOVE COMMANDS (Y o
     1r N)?',$)
1340  FORMAT(' No.  Try again.',//)
1350  FORMAT(' You still don''t have it right.',//)
1360  FORMAT(' CARE TO TRY AGAIN (Y or N)?',$)
1370  FORMAT(' ENTER ANY CHARACTER TO RETURN TO THE MAIN MENU: ',$)
1400  FORMAT(1A1)
1410  FORMAT(1A3)
1420  FORMAT(3A5)
1430  FORMAT(7A5)
1440  FORMAT(1A2)
1450  FORMAT(2A5)
1500  FORMAT(//,' @',$)
1505  FORMAT(//,' :',$)
```

END

FILMED

DTIC

MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS-1963-A

```
1510    FORMAT(//,' INPUT FILE:',$)
1515    FORMAT(//,' 1:',$)
1520    FORMAT(//,' 8:',$)
1525    FORMAT(//,' 8*',$)
1530    FORMAT(//,' 9*',$)
1535    FORMAT(//,' 9:',$)
1540    FORMAT(//,' OUTPUT FILE:',$)
1545    FORMAT(//,' 3:',$)
1550    FORMAT(//,' 1:3TYPE ',$)
1600    FORMAT(////)
        END
C
C
```

```fortran
C
C
      SUBROUTINE AFTP(DUM)
C
C     ===================FTP SUBROUTINE=====================================
C     *   THIS SUBROUTINE EXPLAINS AND DEMONSTRATES THE "FTP" PROTOCOL   *
C     =====================================================================
C
      DIMENSION INPUT(1),DEM1(1),DEM3(3),DEM4(4)
C
C     **** INTRODUCTION TO FTP
C
      TYPE 1600
      TYPE 1000
      TYPE 1300
      READ(05,1400,ERR=10) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C     **** FTP COMMANDS
C
10    TYPE 1010
      TYPE 1300
      READ(05,1400,ERR=25) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C     **** DEMO - ENTRY INTO FTP
C
25    NUM=0
30    TYPE 1040
32    READ(05,1410,ERR=30) DEM1
      TYPE 1600
      IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
      IF(DEM1(1).EQ.'FTP'.OR.DEM1(1).EQ.'ftp')GO TO 50
      NUM=NUM+1
      GO TO (35,40,45) NUM
35    TYPE 1340
      TYPE 1500
      GO TO 32
40    TYPE 1350
      TYPE 1500
      GO TO 32
45    TYPE 1045
      TYPE 1360
      READ(05,1400,ERR=45) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 25
C
C     **** DEMO - CONNECTING TO A FOREIGN HOST
C
50    NUM=0
55    TYPE 1050
57    READ(05,1420,ERR=55) DEM3
```

97

```fortran
            TYPE 1600
            IF(DEM3(1).EQ.'Q'.OR.DEM3(1).EQ.'q')GO TO 520
            IF(DEM3(1).EQ.'CONNE'.AND.DEM3(2).EQ.'CT IS'.AND.DEM3(3).EQ.'IE'.O
           1R.DEM3(1).EQ.'conne'.AND.DEM3(2).EQ.'ct is'.AND.DEM3(3).EQ.'ie')GO
           2 TO 75
            NUM=NUM+1
            GO TO (60,65,70) NUM
60          TYPE 1340
            TYPE 1505
            GO TO 57
65          TYPE 1350
            TYPE 1505
            GO TO 57
70          TYPE 1055
            TYPE 1360
            READ(05,1400,ERR=70) INPUT
            TYPE 1600
            IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
            IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 50
C
C     **** DEMO - LOGGING INTO AN ACCOUNT ON A FOREIGN HOST
C
75          NUM=0
80          TYPE 1060
82          READ(05,1420,ERR=80) DEM3
            TYPE 1600
            IF(DEM3(1).EQ.'Q'.OR.DEM3(1).EQ.'q')GO TO 520
            IF(DEM3(1).EQ.'LOG S'.AND.DEM3(2).EQ.'REGNI'.AND.DEM3(3).EQ.'F 666
           1'.OR.DEM3(1).EQ.'log s'.AND.DEM3(2).EQ.'regni'.AND.DEM3(3).EQ.'f 6
           266'.OR.DEM3(1).EQ.'LOGIN'.AND.DEM3(2).EQ.' SREG'.AND.DEM3(3).EQ.'N
           3IF 6'.OR.DEM3(1).EQ.'login'.AND.DEM3(2).EQ.' sreg'.AND.DEM3(3).EQ.
           4'nif 6')GO TO 100
            NUM=NUM+1
            GO TO (85,90,95) NUM
85          TYPE 1340
            TYPE 1510
            GO TO 82
90          TYPE 1350
            TYPE 1510
            GO TO 82
95          TYPE 1065
            TYPE 1360
            READ(05,1400,ERR=95) INPUT
            TYPE 1600
            IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
            IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 75
C
C     **** DEMO - SENDING A FILE
C
100         NUM=0
105         TYPE 1070
107         READ(05,1470,ERR=105) DEM4
            TYPE 1600
            IF(DEM4(1).EQ.'Q'.OR.DEM4(1).EQ.'q')GO TO 520
            IF(DEM4(1).EQ.'SEND '.AND.DEM4(2).EQ.'HOMEW'.AND.DEM4(3).EQ.'ORK.E
```

```
      1'.AND.DEM4(4).EQ.'XE'.OR.DEM4(1).EQ.'send '.AND.DEM4(2).EQ.'homew'
      2.AND.DEM4(3).EQ.'ork.e'.AND.DEM4(4).EQ.'xe')GO TO 125
      NUM=NUM+1
      GO TO (110,115,120) NUM
110   TYPE 1340
      TYPE 1510
      GO TO 107
115   TYPE 1350
      TYPE 1510
      GO TO 107
120   TYPE 1075
      TYPE 1360
      READ(05,1400,ERR=120) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 100
C
C     DEMO - RETRIEVING A FILE WITH FTP
C
125   NUM=0
130   TYPE 1080
132   READ(05,1470,ERR=130) DEM4
      TYPE 1600
      IF(DEM4(1).EQ.'Q'.OR.DEM4(1).EQ.'q')GO TO 520
      IF(DEM4(1).EQ.'GET W'.AND.DEM4(2).EQ.'TGGT.'.AND.DEM4(3).EQ.'1 TTG
      1'.AND.DEM4(4).EQ.'G.1'.OR.DEM4(1).EQ.'get w'.AND.DEM4(2).EQ.'tggt.
      2'.AND.DEM4(3).EQ.'1 ttg'.AND.DEM4(4).EQ.'g.1')GO TO 150
      NUM=NUM+1
      GO TO (135,140,145) NUM
135   TYPE 1340
      TYPE 1510
      GO TO 132
140   TYPE 1350
      TYPE 1510
      GO TO 132
145   TYPE 1085
      TYPE 1360
      READ(05,1400,ERR=145) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 125
C
C     **** DEMO - CLOSING A CONNECTION
C
150   NUM=0
155   TYPE 1090
157   READ(05,1410,ERR=155) DEM1
      TYPE 1600
      IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
      IF(DEM1(1).EQ.'BYE'.OR.DEM1(1).EQ.'bye')GO TO 175
      NUM=NUM+1
      GO TO (160,165,170) NUM
160   TYPE 1340
      TYPE 1510
      GO TO 157
```

99

```
      165     TYPE 1350
              TYPE 1510
              GO TO 157
      170     TYPE 1095
              TYPE 1360
              READ(05,1400,ERR=170) INPUT
              TYPE 1600
              IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
              IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 150
      C
      C       **** DEMO - LEAVING FTP
      C
      175     NUM=0
      180     TYPE 1100
      182     READ(05,1460,ERR=180) DEM1
              TYPE 1600
              IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
              IF(DEM1(1).EQ.'QUIT'.OR.DEM1(1).EQ.'quit')GO TO 200
              NUM=NUM+1
              GO TO (185,190,195) NUM
      185     TYPE 1340
              TYPE 1505
              GO TO 182
      190     TYPE 1350
              TYPE 1505
              GO TO 182
      195     TYPE 1105
              TYPE 1360
              READ(05,1400,ERR=195) INPUT
              TYPE 1600
              IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
              IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 175
      200     NUM=0
      205     TYPE 1110
      C
      C       SIGN-OFF ROUTINE
      C
      500     TYPE 1240
              TYPE 1370
              READ(05,1400,ERR=510) INPUT
      510     RETURN
      520     TYPE 1250
              TYPE 1370
              READ(05,1400,ERR=530) INPUT
      530     RETURN
      C
      C
      C       *********FORMATS FOR FTP SUBROUTINE**************************
      C
      C       **** INTRODUCTION
      C
      1000  FORMAT('                         FTP - FILE TRANSFER PROTOCOL',//,
             1'  FTP is a program employed to transfer files around the net.  Thi
             2s can be done',/,' from within the same host or between two differ
             3ent hosts.  It does necessitate',/,' that you have access to a dir
```

100

```
      4ectory on each host (the directory which has the',/,' material you
      5 desire and the directory you wish the material to be transferred'
      6,/,' to.',//,
      7' The following prompts are unique to FTP:',//,
      8' FTP>             FTP command level prompt.',/,
      9' USC-ISIE.ARPA>    Foreign host command level prompt.',//)
C
C     •••• FTP COMMANDS
C
1010  FORMAT(' The following commands are peculiar to FTP.',/,
      1' Command     Use',/,
      2' FTP          Invoke the FTP protocol.',/,
      3' CONNECT      Connects you from the local host (the one you logged
      4 into) to the',/,
      5'              foreign host (the one you are trying to get to).',/,
      6' SEND         Sends a file from your local account to the remote a
      7ccount.',/,
      8' GET          Retrieves a file from the remote account to your loc
      9al account.',/,
      •' BYE          Disconnects you from the foreign host.',/,
      1' DISCONNECT   Same as BYE',/,
      2' QUIT         Leaves FTP',/,
      3' EXIT         Same as QUIT',//)
C
C     DEMO - ENTERING FTP
C
1040  FORMAT(' NOTE:  YOU MAY QUIT THE FOLLOWING DEMONSTRATION AT ANY TI
      1ME, SIMPLY BY',/,' TYPING A "Q" FOLLOWED BY A CARRIAGE RETURN, IN
      2REPLY TO ANY OF THE PROMPTS.',//,
      3' Here we go.  To begin with, we need to get from the Executive Le
      4vel to the FTP',/,' Command Level.  We do this by entering "FTP" a
      5fter the "@" prompt.  Go ahead.',/,' @',$)
1045  FORMAT(' What you should have typed, was: FTP<CR>',//)
C
C     •••• DEMO - CONNECTING TO A FOREIGN HOST
C
1050  FORMAT(' USC-ISI.ARPA FTP user process 6(405)-4',/,' FTP>',//,
      1' Very good.  Now we are at the FTP Command Level prompt.  At this
      2 point, we',/,' want to connect to the desired foreign host.  Let'
      3's use ISIE.',//,
      4' FTP>',$)
1055  FORMAT(' What you should have typed, was:  CONNECT ISIE<CR>',//)
C
C     •••• DEMO - LOGIN AT FOREIGN HOST
C
1060  FORMAT(' Connection opened (Assuming TYPE L 36, MODE 3, STRU P)',/
      1,' < USC-ISIE.ARPA FTP Server Process 52(27)-7 at (today''s date &
      2 time)',//,
      3' USC-ISIE.ARPA>',//,
      4' Our connection is now open and we are ready to log into an accou
      5nt on',/,' this foreign host. Unlike the ISIA host, other hosts ma
      6y require the',/,' login to begin with either LOGIN or LOG.  Let''
      7s use the SREGNIF account',/,' which has a password of 666 (the nu
      8mber of the beast).',//,
      9' USC-ISIE.ARPA>',$)
```

```
1065  FORMAT(' What you should have typed, was:',/,
      1'                    LOG SREGNIF 666 or LOGIN SREGNIF 666',//)
C
C     **** DEMO - SENDING A FILE
C
1070  FORMAT(' OK.  Now we are ready to send a file to the foreign host.
      2  We do this with',/,' the SEND command followed by the filename w
      3e are sending followed by the',/,' filename it is to have at the r
      4emote host.  NOTE:  If a file name for the',/,' foreign host is no
      5t specified, it will keep the same name.  Let''s send',/,' HOMEWOR
      6K.EXE.',//,
      7' USC-ISIE.ARPA>',$)
1075  FORMAT(' What you should have typed, was:',/,'         SEND HOMEWOR
      1K.EXE<CR> or SEND HOMEWORK.EXE HOMEWORK.EXE<CR>',//)
C
C     **** DEMO - RECEIVING A FILE
C
1080  FORMAT(' < Paged Store of <SREGNIF>HOMEWORK.EXE.1;P777700;AUDR sta
      1rted.',/,' < Transfer completed.  512 (36) bytes transferred.',/,
      2' USC-ISIE.ARPA>',//,
      3' Very good.  We are almost done with this, but before we leave, l
      *et''s try',/,
      4' GETting file WTGGT.1 to a local file of TTGG.1.  Unfortunatly, w
      *e must',/,
      5' enter both file names in this case (there is no default).',//,
      7' USC-ISIE.ARPA>',$)
1085  FORMAT(' What you should have typed, was: GET WTGGT.1 TTGG.1<CR>',
      1//)
C
C     **** DEMO - LEAVING FTP
C
1090  FORMAT(' < Paged retrieve of <SREGNIF>WTGGT.1.1 started.',/,' < Tr
      1ansfer completed.  15 (36) bytes transfered.',//,
      2' OK.  Now we are ready to quit.  Leave the foreign host with BYE.
      3',//,
      4' USC-ISIE.ARPA>',$)
1095  FORMAT(' What you should have typed, was:  BYE<CR>',//)
1100  FORMAT(' FTP>',//,' Now leave FTP with the quit command.',//,' FTP
      1>',$)
1105  FORMAT(' What you should have typed, was:  QUIT<CR>',//)
1110  FORMAT(' @',//,'   Which puts us back at the Executive Level comma
      1nd prompt of our local host.',//)
C
C     **** SIGN-OFF ROUTINE
C
1240  FORMAT(' This concludes the FTP portion of this tutorial.  Remembe
      1r to use the "?" if',/,' you are not sure what the system is askin
      2g for',//)
1250  FORMAT(' Sorry to see you quit early.  Good bye.',//)
1300  FORMAT(' WOULD YOU LIKE TO CONTINUE (Y or N)?',$)
1320  FORMAT(' WOULD YOU LIKE A DEMONSTRATION OF THE ABOVE COMMANDS (Y o
      1r N)?',$)
1340  FORMAT(' EGAD, Late night last night, or what?',//)
1350  FORMAT(' You still don''t have it right.',//)
1360  FORMAT(' CARE TO TRY AGAIN (Y or N)?',$)
```

```
1370    FORMAT(' ENTER ANY KEY TO RETURN TO THE MAIN MENU',$)
1400    FORMAT(1A1)
1410    FORMAT(1A3)
1420    FORMAT(3A5)
1460    FORMAT(1A5)
1470    FORMAT(4A5)
1500    FORMAT(//,' @',$)
1505    FORMAT(//,' FTP>',$)
1510    FORMAT(//,' USC-ISIE.ARPA>',$)
1500    FORMAT(/////)
        END
C
C
```

```
C
C
      SUBROUTINE ATN(DUM)
C
C     ===============TELNET (TN) SUBROUTINE=========================
C     *   THIS SUBROUTINE EXPLAINS AND DEMONSTRATES THE "TN" PROGRAM   *
C     ==============================================================
C
      DIMENSION INPUT(1),DEM1(1),DEM2(2)
C
C     INTRODUCTION TO TN
C
      TYPE 1600
      TYPE 1000
      TYPE 1300
      READ(05,1400,ERR=10) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
10    TYPE 1010
      READ(05,1400,ERR=25) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C     **** DEMO - ENTRY INTO TN
C
25    NUM=0
30    TYPE 1040
32    READ(05,1430,ERR=30) DEM2
      TYPE 1600
      IF(DEM2(1).EQ.'Q'.OR.DEM2(1).EQ.'q')GO TO 520
      IF(DEM2(1).EQ.'TN IS'.AND.DEM2(2).EQ.'IE'.OR.DEM2(1).EQ.'tn is'.AN
     1D.DEM2(2).EQ.'ie')GO TO 50
      NUM=NUM+1
      GO TO (35,40,45) NUM
35    TYPE 1340
      TYPE 1500
      GO TO 32
40    TYPE 1350
      TYPE 1500
      GO TO 32
45    TYPE 1045
      TYPE 1360
      READ(05,1400,ERR=45) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
      IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 25
C
C     **** DEMO - SHOW COMMAND
C
50    NUM=0
55    TYPE 1050
57    READ(05,1430,ERR=55) DEM2
      TYPE 1600
      IF(DEM2(1).EQ.'Q'.OR.DEM2(1).EQ.'q')GO TO 520
      IF(DEM2(1).EQ.'SHOW '.AND.DEM2(2).EQ.'ME'.OR.DEM2(1).EQ.'show '.AN
```

```
          1D.DEM2(2).EQ.'me')GO TO 75
          NUM=NUM+1
          GO TO (60,65,70) NUM
60        TYPE 1340
          TYPE 1500
          GO TO 57
65        TYPE 1350
          TYPE 1500
          GO TO 57
70        TYPE 1055
          TYPE 1360
          READ(05,1400,ERR=70) INPUT
          TYPE 1600
          IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
          IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 50
C
C         **** DEMO - LEAVING ">>" LEVEL OF TN
C
75        NUM=0
80        TYPE 1060
82        READ(05,1460,ERR=80) DEM1
          TYPE 1600
          IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 520
          IF(DEM1(1).EQ.'LOGO'.OR.DEM1(1).EQ.'logo')GO TO 100
          NUM=NUM+1
          GO TO (85,90,95) NUM
85        TYPE 1340
          TYPE 1500
          GO TO 82
90        TYPE 1350
          TYPE 1500
          GO TO 82
95        TYPE 1065
          TYPE 1360
          READ(05,1400,ERR=95) INPUT
          TYPE 1600
          IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
          IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 75
C
C         **** DEMO - LEAVING TN
C
100       NUM=0
C
C         **** SIGN-OFF ROUTINE
C
500       TYPE 1240
          TYPE 1370
          READ(05,1400,ERR=510) INPUT
510       RETURN
520       TYPE 1250
          TYPE 1370
          READ(05,1400,ERR=530) INPUT
530       RETURN
C
C
```

```
C      ........FORMATS FOR TN SUBROUTINE.................................
C
C      .... INTRODUCTION
C
1000  FORMAT('                          TN (TELNET)',//,
      1' TN is a program or system which allows a user on one host to com
      2municate',/,
      3' with another host.  It actually appears as though you logged int
      4o the',/,
      5' foreign host directly from a "TAC" rather than through another h
      6ost.  The',/,
      7' system also has the advantage of making your control characters
      .do what you ',/,
      8' expect them to do, even if the control characters on the foreign
      . host are ',/,
      9' different.',//,
      .' Using TN is actually quite simple.   All you need do is type "TN
      . <host>" after',/,
      1' the Executive Level prompt followed by a carriage return.  If a
      .pathway to the',/,
      2' foreign host is available and the host is up, you will connect t
      .o the foreign',/,
      3' host ready to log into a directory.  When you are finished, simp
      .ly log out of',/,
      4' the directory, then type "EXIT" after the "TN>" prompt.  You''re
      . back in your',/,
      5' own directory.',//)
C
C      .... TN COMMAND CHARACTERS
C
1010  FORMAT(' It should be noted, that since all control characters are
      1 meant to',/,       ' behave on the foreign host as they would on the
      2 local host, you cannot use',/,' "^C" to return to your own Execut
      3ive Level.  There is a control character',/,
      4' provided for this purpose: ^^C - control ^ followed by a C, but
      .you should',/,
      5' really log out of the foreign host properly, if possible.',//,
      6' Would you like a brief demonstration of TN (Y or N)?',$)
C
C      .... DEMO - ENTERING TN
C
1040  FORMAT(' OK.  First type TN and the name of the host you want to g
      1o to.  We''ll use',/,' ISIE for this demonstration.',//,' @',$)
1045  FORMAT(' What you should have typed, was: TN ISIE<CR>',//)
C
C      .... DEMO - LOGGING IN
C
1050  FORMAT('  Trying... Open',//,
      1' ISIE-SYSTEM-E, TOPS-20 Monitor 5(7430)',/,
      2'  There are 37+10 jobs and the Load Average is   1.66',//,
      3' After login, type "HELP ?" followed by a carriage return for',/,
      4' a list of on-line help topics.',//,' @',//,
      5' Looks familiar eh?   Now we can log into a directory on this hos
      .t.  Use',/,
      6' the directory "SHOW" with the password "ME".  Did you realize th
```

```
      *at you need',/,
      8'  not use the command "LOG" or "LOGIN" to log on to an account?  A
      911 that is',/,
      *'  really required is the account name and the password.  Try it he
      1re.',//,'  @',S)
1055  FORMAT(' What you should have typed, was:  SHOW ME<CR>',//)
C
C     **** DEMO - SHOW COMMAND
C
1060  FORMAT('  Job 51 ON tty234 (date and time)',/,
      1'  Previous LOGIN: (date and time)',/,
      2'  PS: <SHOW>',/,
      3'  37 Pages assigned',/,
      4'  200 Working pages, 200 Permanent pages allowed',/,
      5'  15638 Pages free on PS:,  25354 pages used.',/,
      6'  No new mail exists',/,
      7' With clothes new are the best, with friends the old are best.',/,
      8'  End of LOGIN.CMD.1',//,'  @',//,
      9' Very good.  Well I promised this would be brief; brief it will b
      *e.  While',/,' you are on the foreign host, everything works just
      1as it would on your own',/,' host.  OK.  Let''s go home.  First we
      2 log out.',//,'  @',S)
1065  FORMAT(' What you should have typed, was: LOGO<CR>',//)
C
C     **** DEMO - LEAVING THE ">>" LEVEL OF TN
C
1240  FORMAT('  @',//,' Welcome home.  Note:  If when you had entered TN
      *initially, you had entered',/,
      1' "TN <CR>" you would have gotten the TN> prompt. This is fine.  J
      *ust give the',/,
      2' host name at this point. Upon logout you will be left at the TN>
      * prompt.',/,
      3' Another EXIT here and you are back home.',//,
      4' This concludes the TN portion of this tutorial.  Just remember t
      *he ^^C',/,
      5' control character if you get stranded while in TN.',//)
1250  FORMAT(' Sorry to see you quit early.  Good bye.',//)
1300  FORMAT(' WOULD YOU LIKE TO CONTINUE (Y or N)?',S)
1340  FORMAT(' What a severe case cf fumble fingers you have.',//)
1350  FORMAT(' You still don''t have it right.',//)
1360  FORMAT(' CARE TO TRY AGAIN (Y or N)?',S)
1370  FORMAT(' ENTER ANY KEY TO CONTINUE',S)
1400  FORMAT(1A1)
1430  FORMAT(2A5)
1460  FORMAT(1A4)
1500  FORMAT(//,'  @',S)
1505  FORMAT(//,' TN>',S)
1600  FORMAT(/////)
      END
C
C
```

```
C
C
        SUBROUTINE APHOTO(DUM)
C
C       ==========PHOTO SUBROUTINE=====================================
C       =  THIS SUBROUTINE EXPLAINS AND DEMONSTRATES THE "PHOTO" PROGRAM =
C       ================================================================
C
        DIMENSION INPUT(1)
C
C       **** INTODUCTION TO PHOTO
C
        TYPE 1600
        TYPE 1000
        TYPE 1300
        READ(05,1400,ERR=10) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 530
C
C       **** VIEWING / CHANGING / BEEPS
C
10      TYPE 1010
C
C       **** SIGN-OFF ROUTINE
C
500     TYPE 1240
        TYPE 1370
        READ(05,1400,ERR=510) INPUT
510     RETURN
520     TYPE 1250
        TYPE 1370
        READ(05,1400,ERR=530) INPUT
530     RETURN
C
C
C       ============FORMATS FOR PHOTO SUBROUTINE======================
C
C       **** INTRODUCTION
C
1000    FORMAT('                        PHOTO',//,
       1' PHOTO is a program which allows you to record, or save, portions
       2 of a',/,
       3' computer session.  It is invoked by typing "PHOTO" <CR> at the "
       4@" or',/,
       5' Executive Level prompt.  You will then be asked to supply a file
       6 name',/,
       7' to which the PHOTO session is to be recorded.  PHOTO will record
       8 what',/,
       9' you type, as well as the responses back from the computer.  Whil
       *e you',/,
       1' are in PHOTO, everything will work as normal.  The control chara
       2cters',/,
       3' still remain as before and you still get the same prompts.  What
       4 this',/,
       5' means is, you cannot use  ^C to exit from PHOTO.  The normal mea
        *
```

..

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```
                6ns of',/,
                7' exiting PHOTO is to type "POP" followed by a <CR> at the "@" pro
                8mpt.',//,
                9' There is one control character peculiar to PHOTO; ^Y (control  Y
                *). It',/,
                1' is used to suspend the PHOTO session.  When you are ready to con
                2tinue',/,
                3' recording, input another ^Y.',//,
                4' One additional note.  You must first POP out of PHOTO before you
                5 can',/,
                6' log out.',//)
      C
      C      **** BEEPS ETC
      C
      1010  FORMAT(' If you check your directory after POPing out of PHOTO, yo
                1u will see the new',/,
                2' file.  You can use the TYPE command or enter XED to view it.  XE
                3D will also',/,
                4' allow you to edit it.',//,
                5' While in PHOTO the system beeps at you (every 30 seconds by defa
                5ult).  If you',/,
                6' desire to change the frequency of the beeps or eliminate them en
                7tirely, you',/,
                8' use "/INTERVAL:(frequency in seconds)" following PHOTO:',//,
                9'       @PHOTO/INTERVAL:0    - Removes the beeps',//,
                *'       @PHOTO/INTERVAL:60   - Gives you beeps once a minute',//)
      C
      C     SIGN-OFF ROUTINE
      C
      1240  FORMAT(' This concludes the PHOTO section of this tutorial',//)
      1250  FORMAT(' Sorry you have to leave so soon.  Hurry back.',//)
      1300  FORMAT(' ENTER A "Q" TO QUIT, ANY OTHER KEY TO CONTINUE. ',S)
      1370  FORMAT('       ENTER ANY KEY TO RETURN TO THE MAIN MENU: ',S)
      1400  FORMAT(1A1)
      1600  FORMAT(////)
            END
      C
      C
```

```
C
C
        SUBROUTINE ARMND(DUM)
C
C       ===================REMIND SUBROUTINE===========================
C       *  THIS SUBROUTINE EXPLAINS AND DEMONSTRATES THE REMIND MESSAGE  *
C       *  TICKLER SYSTEM.                                               *
C       ===============================================================
C
        DIMENSION INPUT(1),DEM1(2),DEM2(1),DEM3(2)
C
C       •••• INTRODUCTION TO REMIND
C
        TYPE 1600
        TYPE 1000
C
C       •••• QUERY TO SEE IF USER WOULD LIKE TO CONTINUE
C
        TYPE 1300
        READ(05,1400,ERR=10) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 300
C
C       •••• DEMONSTRATION OF ENTERING REMIND PROGRAM
C
10      NUM=0
30      TYPE 1010
        READ(05,1410,ERR=30) DEM1
        TYPE 1600
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 300
        IF(DEM1(1).EQ.'REMIN'.AND.DEM1(2).EQ.'D'.OR.DEM1(1).EQ.'remin'.AN
       1D.DEM1(2).EQ.'d')GO TO 50
        NUM=NUM+1
        GO TO (35,40,45) NUM
35      TYPE 1340
        GO TO 30
40      TYPE 1350
        GO TO 30
45      TYPE 1020
        TYPE 1360
        READ(05,1400,ERR=45) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 300
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 10
C
C       •••• DEMONSTRATION OF REMIND OPTIONS
C
50      NUM=0
55      TYPE 1030
60      READ(05,1400,ERR=65) DEM2
        TYPE 1600
        IF(DEM2(1).EQ.'Q'.OR.DEM2(1).EQ.'q')GO TO 300
        IF(DEM2(1).EQ.'?')GO TO 80
65      TYPE 1040
        GO TO 60
```

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```
70      NUM=0
80      TYPE 1050
        TYPE 1055
        TYPE 1370
        READ(05,1400,ERR=90) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 300
C
C       **** DEMONSTRATION OF CREATING A REMIND MESSAGE
C
90      TYPE 1060
        READ(05,1410,ERR=90) DEM3
        TYPE 1600
        IF(DEM3(1).EQ.'Q'.OR.DEM3(1).EQ.'q')GO TO 300
        IF(DEM3(1).EQ.'CREAT'.AND.DEM3(2).EQ.'E'.OR.DEM3(1).EQ.'creat'.AN
       1D.DEM3(2).EQ.'e')GO TO 150
        NUM=NUM+1
        GO TO (110,115,120) NUM
110     TYPE 1350
        GO TO 90
115     TYPE 1340
        GO TO 90
120     TYPE 1065
        TYPE 1360
        READ(05,1400,ERR=120) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 300
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 90
C
C       **** DEMONSTRATE WRITING A MESSAGE
C
150     NUM=0
200     TYPE 1080
210     TYPE 1370
        READ(05,1400,ERR=220) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 300
220     TYPE 1090
C
C       SIGN-OFF ROUTINE
C
240     TYPE 1100
        TYPE 1380
        READ(05,1400,ERR=260) INPUT
260     RETURN
300     TYPE 1200
320     TYPE 1380
        READ(05,1400,ERR=340) INPUT
340     RETURN
C
C       **** EXPLANATION OF REMIND
C
1000    FORMAT(20X,'REMIND',//,
       1' REMIND is a program which allows you to create  reminders for yo
       *urself (or',/,
```

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```
              2' others) which will be sent  by the  system at a specified time.
             *You may',/,
              3' schedule a  reminder  to be  sent  only once, or as frequently a
             *s you like.',/,
              4' You may also select whether the  reminder will be mailed to your
             * mailbox, or',/,
              5' displayed on your terminal screen, or both.',//)
 1010  FORMAT(' To use the REMIND program,  type "REMIND <CR>"  at the  E
             *xecutive Level prompt.',/,
              1' Go ahead and try it (Remember, you can always quit by entering a
             * "Q" at any',/,
              2' prompt.):',/,' @',$)
 1020  FORMAT(' What you should have typed was:  REMIND <CR>',//)
 1030  FORMAT(' After you have entered "REMIND <CR>" the following  will
             *appear on your screen:',//,
              2'    REMIND VERSION 1.0(2)-3',/,
              3'    MONDAY, NOVEMBER 25, 1985  1:42AM',/,
              4'    REMIND>',//,
              5' Typing a question mark (?) at any point in the remin program wil
             *l display',/,
              6' various available options. Try it yourself: ',//,
              7' REMIND>',$)
 1040  FORMAT(' What you should have typed was a question mark.',/,'Try
             1again, please: ',//,' REMIND>',$)
 1050  FORMAT(' CREATE',/,
              1' DAYTIME',/,
              2' DELETE',/,
              3' EXIT',/,
              4' HEADERS',/,
              5' HELP',/,
              6' MODIFY',/,
              7' QUIT',/,
              8' SURVEY',/,
              9' TYPE',/,
             *' UNDELETE',//)
 1055  FORMAT(' The above list comprises the options available to you in
             *REMIND. Most of them',/,
              1' are self explanatory, however, it is helpful to know that DAYTIM
             *E will tell you',/,
              2' the current exact month, date and time, while SURVEY lists all R
             *EMIND messages',/,
              3' you have sent recently. Use the HELP command to find out about t
             *he other',/,
              4' commands if you are uncertain of their meanings.',//)
 1060  FORMAT(' Let''s try CREATEing a REMIND message. Type CREATE <CR> a
             1fter',/,' the REMIND> prompt.',//,' REMIND>',$)
 1065  FORMAT(' What you should have typed was: CREATE <CR> ',//)
 1080  FORMAT(' The REMIND message format has a number of fields for you
             *to enter the',/,
              1' appropriate information requested.  It is, again,  fairly self e
             *xplanatory,',//,
              2' so I am only going to show you an example.  Of course, you can,
             *as always,',/,
              3' type a question mark if you get stuck.  This is what a completed
             * REMIND',/,
```

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```
      4' message will look like:',//,
      6' REMIND>CREATE',/,
      7' First reminder at:  1234',/,
      8' First reminder will be sent Monday, November 25, 1985 12:34PM',/,
      9' Frequency of reminders: ONCE',/,
      *' Notify mode: MAIL',/,
      1' To: JONESDTW',/,
      2' Subject: MEETING AT 1400 TOMORROW',/,
      3' Msg:',/,
      4' *** HEY, DAN!!',/,
      5' I FORGET TO TELL YOU WE HAVE A MEETING ON THE JCS CHANGES',/,
      6' PROPOSAL TOMORROW AFTERNOON. BE PREPARED TO SUPPORT YOUR VIEWS!'
      7,/,' JIM***',/,' ^Z',///,
      8' Notice you end the REMIND message with a ^Z.',//,
      9' A word of advice:  When prompted for mode of notification, you h
      *ave three',/,
      *' options: SEND, MAIL or BOTH.  SEND will result in a receipt only
      * if the',/,
      1' recipient is logged on to the host when the REMIND is sent (it i
      *s sent directly',/,
      2' to his screen at send time).  MAIL causes the REMIND to be sent
      *only to the',/,
      3' recipient''s mail box.  BOTH will result in both SEND and MAIL.'
      *,//,
      4' That''s all there is to it!  The message is automatically queued
      *, then',/,
      5' forwarded at the time indicated.',//)
 1090 FORMAT(' The next time JONESDTW (Dan) logs onto the host after 12:
     134PM',/,' on 25 November 1985, he will be told he has mail from th
     2e REMIND',/,' Daemon in his MSG file. By going into MSG, finding o
     3ut the number of',/,' the message, and giving the "TYPE (number) <
     4CR>" command, the REMIND ',/,' message will be printed out.',//)
 1100 FORMAT(' This concludes the REMIND portion of this tutorial.',//)
 1200 FORMAT(' Sorry to see you quit so soon. Goodbye.',//)
 1300 FORMAT(' Would you like to continue (Y or N)? ',$)
 1340 FORMAT(' No. Try again, please.',//)
 1350 FORMAT(' Oops! I''ll pretend I didn''t see that!!',//)
 1360 FORMAT(' Do you want another chance (Y or N)? ',$)
 1370 FORMAT(' Enter a "Q" to quit, any other key to continue: ',$)
 1380 FORMAT(' Enter any key to return to main menu: ',$)
 1400 FORMAT(1A1)
 1410 FORMAT(2A5)
 1600 FORMAT(/////)
      END
C
C
```

```
C
C
        SUBROUTINE AFNGR(DUM)
C
C      ===================FINGER SUBROUTINE=========================
C      *  THIS SUBROUTINE EXPLAINS AND DEMONSTRATES THE FINGER LOCATE  *
C      *  AND IDENTIFY USER SYSTEM                                     *
C      ===========================================================
C
        DIMENSION INPUT(1),DEM1(2),DEM2(3)
C
C      **** INTRODUCTION TO FINGER
C
        TYPE 1600
        TYPE 1000
C
C      **** QUERY TO SEE IF USER WOULD LIKE TO CONTINUE
C
        TYPE 1370
        READ(05,1400,ERR=10) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 300
C
C      **** DEMONSTRATION OF ENTERING FINGER PROGRAM
C
10      NUM=0
30      TYPE 1010
        READ(05,1410,ERR=30) DEM1
        TYPE 1600
        IF(DEM1(1).EQ.'Q'.OR.DEM1(1).EQ.'q')GO TO 300
        IF(DEM1(1).EQ.'FINGE'.AND.DEM1(2).EQ.'R'.OR.DEM1(1).EQ.'finge'.AN
     1D.DEM1(2).EQ.'r')GO TO 70
        NUM=NUM+1
        GO TO (35,40,45) NUM
35      TYPE 1340
        GO TO 30
40      TYPE 1350
        GO TO 30
45      TYPE 1020
        TYPE 1360
        READ(05,1400,ERR=45) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 300
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 10
C
C      **** DEMONSTRATION OF FINGERING YOUR HOST
C
70      NUM=0
80      TYPE 1050
        TYPE 1370
        READ(05,1400,ERR=85) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 300
85      TYPE 1055
        TYPE 1370
```

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```
        READ(05,1400,ERR=88) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 300
88      TYPE 1058
        TYPE 1370
        READ(05,1400,ERR=90) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 300
C
C       •••• DEMONSTRATION OF CREATING A FINGER.PLAN
C
89      NUM=0
90      TYPE 1060
        READ(05,1415,ERR=90) DEM2
        TYPE 1600
        IF(DEM2(1).EQ.'Q'.OR.DEM2(1).EQ.'q')GO TO 300
        IF(DEM2(1).EQ.'FINGE'.AND.DEM2(2).EQ.'R JON'.AND.DEM2(3).EQ.'ESDTW
       1'.OR.DEM2(1).EQ.'finge'.AND.DEM2(2).EQ.'r jon'.AND. DEM2(3).EQ.'es
        2dtw')GO TO 150
        NUM=NUM+1
        GO TO (110,115,120) NUM
110     TYPE 1350
        GO TO 90
115     TYPE 1340
        GO TO 90
120     TYPE 1065
        TYPE 1360
        READ(05,1400,ERR=120) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 300
        IF(INPUT(1).EQ.'Y'.OR.INPUT(1).EQ.'y')GO TO 89
C
C       •••• DEMONSTRATION OF WHAT A FINGER.PLAN LOOKS LIKE
C
150     NUM=0
200     TYPE 1080
C
C       •••• SIGN-OFF ROUTINE
C
240     TYPE 1100
        TYPE 1380
        READ(05,1400,ERR=260) INPUT
260     RETURN
300     TYPE 1200
320     TYPE 1380
        READ(05,1400,ERR=340) INPUT
340     RETURN
C
C       ••••••••• FORMATS FOR FINGER SUBROUTINE ••••••••••••
C
C       •••• EXPLANATION OF FINGER
C
1000    FORMAT(20X,'FINGER',//,
       1' FINGER is a program to help locate and identify users on  a syst
        •em.  It is',/,
```

```
      2' called from the Executive Level by the FINGER command. Its main
     *features are',/,
      3' personal name and line locaton output.  FINGER will also allow y
     *ou to leave a',/,
      4' message called a "plan" in a file called FINGER.PLAN to be print
     *ed out if',/,
      5' somebody FINGERs you and you are not logged on.  This file is a
     *free-form text',/,
      6' file and the file protection should be at least 775252 to allow
     *other users to',/,
      7' read it.',//)
1010  FORMAT(' To FINGER users on a system, type "FINGER <CR>" at the  E
     *xecutive Level prompt.',/,
      1' Go ahead and try it (Remember, you can always quit by entering a
     * "Q" at any',/,
      2' prompt.):',/,' @',#)
1020  FORMAT(' What you should have typed was:  FINGER <CR>',//)
1050  FORMAT('  User       Personal name        Job  Subsys  Idle  TTY  Co
     1nsole location',/,' CLYNN      Charles Lynn             15  PICKLE
     2  344  Batch job',/,' HERBERTMK M.K. Herbert            37  TYPE
     3      .212  NPS-TAC.ARPA#27',/,' SMTP       System Utility         8  S
     4MTPSD      .355  Job 0, OPERATOR, SYSJOB',/,' WESTTA     T.A. WEST
     5        33  XED             211  NPS-TAC.ARPA#13',//)
1055  FORMAT(' Other calling sequences for FINGER.PLAN include:',//,
     1' @ FINGER / <switches> <username>',/,
     2' @ FINGER <USERNAME> / <SWITCHES>',/,
     3' <USERNAME>    May be blank to mean all users, or a local usernam
     4e, or',/,'          a foreign username of the form <username>@<host
     5>.',//,'          If the username is not specified, a terse summary
     6 of ',/,'          all users is output ordered alphabetically by u
     7sername.',//, '          If a username is specified the output is m
     8uch',/,'          more  detailed, showing the normal one-line job s
     9tatus.',/,'          the last logout time and line if the user is n
     *ot log-',/,'          ged in, the last time the mail was read, and
     1whether',/,'          there are any pending messages, and the user'
     2's ',/,'          current FINGER.PLAN.',//)
1058  FORMAT(' <SWITCHES>          If no SWITCHES are specified the defau
     1lts',/,'          are:  /DETACHED /NO-OPERATOR. Specified SWITCHES
     2are',//,' /DETACHED       Display detached jobs.',/,
     3' /DIAL-IN        Display dial-in jobs only.',/,
     4' /HELP           Show this message.',/,
     5' /NO-DETACHED    Suppress display of detached jobs.',/,
     6' /NO-OPERATOR    Suppress display of operator jobs.',/,
     7' /OPERATOR       Display operator jobs.',/,
     8' /TERSE          Don''t output plan and mail information just the
     9 one-',/,'               line job status.',/,
     *' /VERBOSE        Output plan and mail info and whatever info the
     1person',/,'               has in the INQUIR database, except for t
     2he',/,'               account. Ignore if no username given.',/,
     3' /WHOIS          Useful for remote users. Site dependent info is
     4dis-',/,'               played about the user. For any ISI site th
     5at',/,'               INQUIR data exists the following is displaye
     6d: ',/,'               personal name, network address, the home ad
     7dress',/,'               and phone, work address and phone, projec
     8t.',//)
```

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```
C
C     **** MAKING YOUR OWN FINGER.PLAN
C
1060  FORMAT(' To make your own FINGER.PLAN, simply make up a file in XE
      1D, set',/,' file protection at 775252, and title it FINGER.PLAN. Y
      2ou ',/,' can update any time you wish, of course. Let''s see what
      3FINGERing',/,' an individual looks like. Type FINGER JONESDTW <CR>
      4 after',/,' the Executive Level prompt.',//,' @',$)
1065  FORMAT(' What you should have typed was: FINGER JONESDTW <CR>',//)
1080  FORMAT(' JONES      DANIEL THOMAS W.      JONESDTW not logged in',
      1//,' Last logout Tue 26-Nov-85 14:01 from TTY233',//,
      2' Netmail from WBA@MIT-XX.ARPA at Tue 26-Nov-85 17:31, last read'
      3,/,' on Tue 26-Nov-85 12:58.',//,
      4' Plan:',//,
      5' This is my plan.. this is my dream... to hmmhmm.....',//,
      6' Sorry I''m not here to talk to you!!  Leave a MSG; I''ll be in'
      7,/,' touch mos skosh!!!',//,
      8' To learn more about a person, type "FINGER <username>/VERBOSE.
      *You will get',/,
      9' the FINGER information as in the above example plus the informat
      *ion from the',/,
      *' person''s INQUIR file.  (See INQUIRE portion of this tutorial).
      *',//)
1100  FORMAT(' This concludes the FINGER portion of this tutorial.',//)
1200  FORMAT(' Sorry to see you quit so soon. Goodbye.',//)
1300  FORMAT(' Would you like to continue (Y or N)? ',$)
1320  FORMAT(' Enter any key to continue: ',$)
1340  FORMAT(' Sigh. I guess it''s just not your day.',//)
1350  FORMAT(' Aaack!!! Call the repairman! You''ve scrambled my innards
      1!!!',//)
1360  FORMAT(' Do you want another chance (Y or N)? ',$)
1370  FORMAT(' Enter a "Q" to quit, any other key to continue: ',$)
1380  FORMAT(' Enter any key to return to main menu: ',$)
1400  FORMAT(1A1)
1410  FORMAT(2A5)
1415  FORMAT(3A5)
1600  FORMAT(////)
      END
C
C
```

```
C
C
      SUBROUTINE AINQR(DUM)

C     ====================INQUIR SUBROUTINE============================
C     = THIS SUBROUTINE EXPLAINS AND DEMONSTRATES THE "INQUIR" PROGRAM =
C     =================================================================
C
      DIMENSION INPUT(1)
C
C     **** INTRODUCTION TO INQUIR
C
      TYPE 1600
      TYPE 1000
      TYPE 1030
      READ(05,1400,ERR=100) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
100   TYPE 1010
      TYPE 1015
      READ(05,1400,ERR=120) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 520
C
C     **** EXAMPLE OF COMPLETED DATA BASE & SHOW COMMAND
C
120   TYPE 1020
      TYPE 1030
      READ(05,1400,ERR=130) INPUT
      TYPE 1600
      IF(INPUT(1).EQ.'Q'.OR.INPUT(1).EQ.'q')GO TO 520
130   TYPE 1040
C
C     **** SIGN-OFF ROUTINE
C
500   TYPE 1240
      TYPE 1370
      READ(05,1400,ERR=510)
510   RETURN
520   TYPE 1250
      TYPE 1370
      READ(05,1400,ERR=530)
530   RETURN
C
C
C     ==============FORMATS FOR INQUIR SUBROUTINE======================
C
C     **** INTRODUCTION TO INQUIR
C
1000  FORMAT(//,'                              INQUIR',//,
     1' INQUIR allows you to enter information into a file which can the
     2n be read',/,
     3' by yourself or others using the "FINGER /VERBOSE <username>" com
     4mand. It',/,
     5' is entered by typing  "INQUIR <CR>" after the "@" Executive Leve
```

```
      61 prompt.',/,
      7' The system will respond with the ">" prompt, following which you
      8 type the',/,
      9' command "MODIFY <username> <CR>", where user name is your accoun
      *t name.',//,
      1' The system now will be at its entry level, and will either respo
      2nd with a',/,
      3' ">>" prompt (if data is already in the file), or with questions
      4(if there',/,
      5' is no information in the file).',//,
      6' Please note that while you are answering these questions, or lat
      7er making',/,
      8' changes, the editing controls (DEL KEY, ^R, ^W etc.) may be used
      9. The ^Z',/,
      *' is used to complete the remarks section.',//)
C
1010  FORMAT(//,
      1' When you finish with the questions you will be placed at the ">>
      2" prompt.',/,
      3' The commands now available  can be  viewed by  entering a  "?",
      4as usual.',/,
      5' The more useful of these are:',//,
      6'    ALL              Allows you to review/change the entire data ba
      7se.',//,
      8'    <field name>   Allows you to change a specific field.',//,
      9'    SHOW             Shows you the entire data base as it would app
      *ear with',/,
      1'                     the "FINGER /VERBOSE" <username> command.',//,
      2'    EXIT             Exits to the ">" prompt from the ">>" prompt,
      3or exits',/,
      4'                     to the "@" prompt from the ">" prompt .',//,
      5' Thus, once we are satisfied with the file, it takes two EXITs to
      6 get back',/,
      7' to the Executive Level.',//)
C
1015  FORMAT(' Would you like to see what a completed INQUIR file looks
      1like (Y or N)? ',$)
C
C     **** EXAMPLE OF INQUIR FILE / SHOW COMMAND
C
1020  FORMAT(' @INQUIR',/,
      1' > MODIFY HERKERTMK',/,
      2' >> SHOW',/,
      3' Directory name:        PS:<HERKERTMK>',/,
      4' Name:                  ',/,
      5' Nick name:             BOOTS',/,
      6' Work address:          C3 CURRICULUM, NPS MONTEREY, CA 93943-100
      71',/,
      8' Work phone:            (408) 646-2772',/,
      9' Home address:          SMC 1001, NPS MONTEREY, CA 93943-1001',/,
      *' Home phone:            (408) 372-1665',/,
      1' Network address:       HERKERTMK',/,
      2' Birthday:              CLASSIFIED',/,
      3' Supervisor:            GARY POOCK (NET: POOCK@ISIA)',/,
      4' Project:               INTERACTIVE TUTORIAL ON THE DDN NETWORK',
```

```
           5/,
           6'   Relation:              Grad-Student',/,
           7'   Remarka:               God helps those which........',/,
           8'   Account:               ',/,
           9'   Last logout:',/,
           *'   Last alteration:       HERKERTMK; 25-Nov-85 00:31:42',/,
           1' >> EXIT',/,
           2' > EXIT',//)
C
1030   FORMAT(' ENTER "Q" TO QUIT, ANY OTHER KEY TO CONTINUE: ',$)
C
C      •••• REMARKS ABOUT EMPTY FIELDS
C
1040   FORMAT(' Notice in the above output, certain fields are blank:  AC
      1COUNT, NAME and',/,
      2' LAST LOGOUT.  These fields are completed by the system when some
      3one FINGERS',/,' the file with /VERBOSE.',//)
C
C      •••• SIGN-OFF ROUTINE
C
1240   FORMAT(' This completes the tutorial section on INQUIR.',//)
1250   FORMAT(' SORRY YOU HAVE TO RUSH OFF',//)
1370   FORMAT(' ENTER ANY KEY TO RETURN TO THE MAIN MENU: ',$)
1400   FORMAT(1A1)
1600   FORMAT(/////)
       END
C
C
```

120

```
C
C
        SUBROUTINE AEMH(DUM)
C
C       ========ELECTRONIC MAIL HOST SUBROUTINE=========================
C       =  THIS SUBROUTINE EXPLAINS AND DEMONSTRATES THE ELECTRONIC     =
C       =  MAIL HOST MESSAGE HANDLING SYSTEM.                           =
C       ================================================================
C
        DIMENSION INPUT(1)
C
C       **** INTRODUCTION TO EMH
C
        TYPE 1600
        TYPE 1000
C
C       **** QUERY TO SEE IF USER WOULD LIKE TO CONTINUE
C
        TYPE 1300
        READ(05,1400,ERR=10) INPUT
        TYPE 1600
        IF(INPUT(1).EQ.'N'.OR.INPUT(1).EQ.'n')GO TO 50
C
C       **** DEMONSTRATION OF USING EMH PROGRAM
C
10      NUM=0
30      TYPE 1010
        TYPE 1320
        READ(05,1400,ERR=35) INPUT
        TYPE 1600
35      TYPE 1020
        TYPE 1320
        READ(05,1400,ERR=40) INPUT
40      TYPE 1030
        TYPE 1320
        READ(05,1400,ERR=45) INPUT
C
C       SIGN-OFF ROUTINE
C
45      TYPE 1100
        TYPE 1380
        READ(05,1400,ERR=48) INPUT
48      RETURN
50      TYPE 1200
60      TYPE 1380
        READ(05,1400,ERR=70) INPUT
70      RETURN
C
C       *********** FORMAT FOR EMH SUBROUTINE *************************
C
C
C       **** EXPLANATION OF EMH
C
1000    FORMAT(20X,'EMH',//,
       1' ELECTRONIC MAIL HOST (EMH) is a special kind of host on the net.
```

121

```
                      *   The only',/,
                      2' capability an EMH has is sending and receiving messages. You wil
                      *l be using',/,
                      3' TN in this tutorial; if you''ve forgotten that particular system
                      *, you should',/,
                      4' stop here and go back for a review.',//)
        1010  FORMAT(' To use EMH, obviously you will have to know someone who i
                      *s only on that system,',/,
                      1' worse yet, you will have to know the correct password(s) to get
                      *into that',/,
                      2' particular EMH location.  For example, Hawaii has an EMH.  In th
                      *is tutorial',/,
                      3' we will login using "NPSCLASS" with a first password of FALLDOWN
                      * and a second',/,
                      4' password of SPRINGUP. EMH passwords change frequently to prevent
                      * idle chitchat,',/,
                      5' user abuse and large, inexplicable bills. Unless you have a good
                      * and valid',/,
                      6' reason to access an EMH, you will probably not be able to get in
                      *.',//)
        1020  FORMAT(' Here is a  demonstration of accessing an EMH "Host" and a
                      lending',/,' a message:',//,
                      2' @TN HAWAII-EMH',/,
                      3' Trying... Open',/,
                      4' ;login: NPSCLASS',/,
                      5' PASSWORD: <falldown>',/,
                      6' BBNCC RELEASE 5.3.3.  INSTALLED 4 SEP 85',//,
                      7' HAWAII ELECTRONIC MAIL HOST',/,
                      8' TERM = (TI) TTY',/,
                      9' ERASE SET TO BACKSPACE',/,
                      *' WELCOME TO INFOMAIL -- VERSION 2.5.1 -- USED UNDER LICENSE FROM
                      1BBNCC',/,
                      2' USER NAME:  NPSCLASS',/,
                      3' PASSWORD: <springup>',//,
                      4' INBOX NOW OPENED  (NB: This is messages you are in receipt of)',
                      *//,
                      5' INBOX.',//,
                      6' 1 FROM:POOCK @ US /SUBJECT: THESIS QUESTIONS?? / 29 NOV 85 18:29
                      * GMT',//,' -->',//)
        1030  FORMAT(' You have a number of options in EMH: ',/,' DESK, INBOX, O
                      1UTBOX, FILES, FORMS, TRASH, PROFILE, CURRENT, PREVIOUS, #, %,',/,'
                      2 LAST, ALL.',//,
                      *' Other options used to manipulate message formatting, etc are:',/
                      3,' COMPOSE,  COPY,  CREATE,  DESCRIBE,  DISCARD,  DISPLAY,   EDIT,
                      4 PEN,',//,' EXAMPLE,  EXIT,  EXPORT,  FILE, FORWARD, GET, IMPORT, K
                      5EEP, LOOKUP, MAIL,',//,' MAKE, MOVE, NEXT, OPEN, PRINT, QUIT, READ,
                      6 REMOVE, REPLY, RESTORE, SCAN,',//,' SET, SHOW, SYSTEM, TERMINAL.',
                      7//,
                      8' A goodly number of these are self-explanatory, but if you find o
                      9ne',/,' is a bit confusing, a question mark typed after the option
                      * will elicit',//,' an explanation. Unfortunately, the ESC and CONTR
                      10L keys do not work',//,' well, if at all, in EMH. Other than readi
                      2ng your INBOX, you will probably',//,' find the COMPOSE option, use
                      3d to create a message, the most useful.',//,20X,'SPECIAL NOTE',//,
                      4' Since the control characters do not work in EMH, we cannot termi
```

122

```
      •nate the text',/,
      5' of a message with ^Z.  Instead, enter a PERIOD "." on a line by
      •itself followed',/,
      6' by a carriage return.',//)
1100  FORMAT(' This concludes the EMH portion of this tutorial.',//)
1200  FORMAT(' Sorry to see you quit so soon. Goodbye.',//)
1300  FORMAT(' Would you like to continue (Y or N)? ',S)
1320  FORMAT(' Enter any key to continue: ',S)
1380  FORMAT(' Enter any key to return to main menu: ',S)
1400  FORMAT(1A1)
1600  FORMAT(////)
      END
C
C
```

123

```
C
C
      SUBROUTINE AEMACS(DUM)
      TYPE 100
      RETURN
100   FORMAT(////' THE EMACS PART OF THIS TUTORIAL HAS YET TO BE WRITTEN.
     1',//)
      END
C
C
```

```
C
C
      SUBROUTINE AGRAPH(DUM)
      TYPE 100
      RETURN
100   FORMAT(' THE GRAPH PORTION OF THIS TUTORIAL HAS YET TO BE WRITTEN.
     1',//)
      END
C
C
```

```
C
C
      SUBROUTINE BILBO(DUM)
C
C     ***************WHERE TO GO FROM HERE SUBROUTINE**************
C     *  THIS SUBROUTINE OUTPUTS ADDITIONAL SOURCES OF INFORMATION ON  *
C     *  THE DDN NETWORK AND THE TOPS-20 OPERATING SYATEM              *
C     ****************************************************************
C
      DIMENSION INPUT(1)
      TYPE 1600
      TYPE 1000
      TYPE 1200
      READ(05,1400,ERR=10) INPUT
10    TYPE 1005
      TYPE 1200
      READ(05,1400,ERR=20) INPUT
20    TYPE 1010
      TYPE 1240
      TYPE 1250
      READ(05,1400,ERR=30) INPUT
30    RETURN
C
C
C     *******FORMATS FOR BIBLIOGRAPHY SUBROUTINE********************
C
C
1000  FORMAT(10X,'WHERE TO GO FROM HERE',//
     1' The following materials serve as excellent sources of informatio
     *n on the',/,
     2' TOPS-20 operating systems and sub-systems, including HELP, ?, AC
     3TION,',/,
     4' DOCUMENTATION, FTP, TN, FINGER, MM, HERMES, XED, EMACS, REMIND,
     5PHOTO,',/,
     6' WHOIS, ARCHIVE AND SCRIBE.',//,
     7' USER''S GUIDE TO TOPS-20                TOPS-20',/,
     8' WAYNE TANNER                           CHLOE SOMMERS HOLG',/,
     9' SEPT 1983 & APRIL 1984                 AUGUST 1983',/,
     *' USC INFORMATION SCIENCE INSTITUTE      USC INFORMATION SCIENCE
     1 INSTITUTE',/,
     2' 4676 ADMIRALTY WAY                     IBID',/,
     3' MARINA DEL REY, CA 90291',/,
     4' (213) 822-1511 EXT 289',/,
     5' ACTION @ ISIE',//,
     6'                     PROFESSOR GARY POOCK',/,
     7'                     CODE 55PK',/,
     8'                     NAVAL POSTGRADUATE SCHOOL',/,
     9'                     MONTEREY, CA 93943',/,
     *'                     POOCK@USC-ISIA',//)
C
1005  FORMAT(' The following are informative sources on the creation of
     1the Defense Data',/,
     2' Network, where it''s at today and where it''s going:',//,
     3' DDN NEW USER GUIDE (NIC 50001)',/,
     4' MARCH 1985',/,
```

```
      5' DDN NETWORK INFORMATION CENTER',/,
      6' DDN PROGRAM MANAGEMENT OFFICE',/,
      7' DEFENSE COMMUNICATION AGENCY',/,
      8' WASHINGTON, D.C.',/,
      9' (703) 285-5025',//)
C
1010  FORMAT(' Useful addresses:',//,
      1' BOLT, BERANEK AND NEWMAN INC.           COMPUTING ANALYSIS COR
      2PORATION',/,
      3' 50 MOULTON STREET                       1400 WILSON BLVD., SUI
      4TE 1101',/,
      5' CAMBRIDGE, MASSACHUSETTS 02238          ARLINGTON, VIRGINIA  2
      62209',//,
      7' DIGITAL EQUIPMENT CORPORATION           DOCUMENT DISTRIBUTION'
      8,/,
      9' PO BOX CS-2008                          USC INFORMATION SCIENC
      *ES INSTITUTE',/,
      1' NASHUA, NEW HAMPSHIRE  03061            4676 ADMIRALTY WAY, SU
      2ITE 1100',//,
      3'                                         MARINA DEL RAY, CALIFO
      4RNIA  90291',/,
      5' MASSACHUSETTS INSTITUTE OF TECHNOLOGY ',/,
      6' ARTIFICIAL INTELLIGENCE LABORATORY      UNILOGIC, LTD',/,
      7' ATTN:  PUBLICATIONS                     160 N. CRAIG',/,
      8' 545 TECHNOLOGY SQUARE                   PITTSBURG, PENNSYLVANI
      9A 15213',/,
      *' CAMBRIDGE, MASSACHUSETTS  02139',//)
1200  FORMAT(' ENTER ANY KEY TO CONTINUE: ',$)
1240  FORMAT(' This concludes the bibliography section.',//)
1250  FORMAT(' TYPE ANY KEY TO RETURN TO THE MAIN MENU: ',$)
1400  FORMAT(1A1)
1600  FORMAT(////)
      END
```

127

**This Flowchart Describes The Main Program
Of The Interactive Tutorial For The DDN.**

```
┌─────────────────────┐
│   INTRODUCTION      │
└─────────────────────┘
           │
           ▼
┌─────────────────────┐
│     MENU OF         │◄─────────────────────────────────────┐
│  INSTRUCTIONAL      │                                      │
│   SUBROUTINES       │                                      │
└─────────────────────┘                                      │
           │                                                 │
           ▼                                                 │
      ┌─────────┐                                            │
      │  CASE   │                                            │
      └─────────┘                                            │
           │                                                 │
           │    ┌──────────────────────┐                     │
           ├───►│  INTRODUCTION TO     │────────────────────►│
           │    │  HELP, ACTION, ?     │                     │
           │    └──────────────────────┘                     │
           │    ┌──────────────────────┐                     │
           ├───►│  BASIC EXECUTIVE     │────────────────────►│
           │    │  LEVEL COMMANDS      │                     │
           │    └──────────────────────┘                     │
           │    ┌──────────────────────┐                     │
           ├───►│ ADVANCED EXECUTIVE   │────────────────────►│
           │    │  LEVEL COMMANDS      │                     │
           │    └──────────────────────┘                     │
           │    ┌──────┐                                      │
           ├───►│ MSG  │─────────────────────────────────────►│
           │    └──────┘                                      │
           │    ┌──────┐                                      │
           ├───►│ XED  │─────────────────────────────────────►│
           │    └──────┘                                      │
           │    ┌──────┐                                      │
           ├───►│ FTP  │─────────────────────────────────────►│
           │    └──────┘                                      │
           │    ┌──────┐                                      │
           ├───►│  TN  │─────────────────────────────────────►│
           │    └──────┘                                      │
           │    ┌────────┐                                    │
           ├───►│ PHOTO  │───────────────────────────────────►│
           │    └────────┘                                    │
           │    ┌─────────┐                                   │
           ├───►│ REMIND  │──────────────────────────────────►│
           │    └─────────┘                                   │
           │    ┌──────────┐                                  │
           ├───►│ INQUIRE  │─────────────────────────────────►│
           │    └──────────┘                                  │
           │    ┌─────────┐                                   │
           ├───►│ FINGER  │──────────────────────────────────►│
           │    └─────────┘                                   │
           │    ┌──────┐                                      │
           ├───►│ EMH  │─────────────────────────────────────►│
           │    └──────┘                                      │
           │    ┌─────────┐                                   │
           ├───►│ EMACS*  │──────────────────────────────────►│
           │    └─────────┘                                   │
           │    ┌─────────┐                                   │
           ├───►│ GRAPH*  │──────────────────────────────────►│
           │    └─────────┘                                   │
           │    ┌────────────────────────┐                    │
           ├───►│ WHERE TO GO FROM HERE  │───────────────────►┘
           │    └────────────────────────┘
           │    ┌──────┐
           └───►│ QUIT │          * DENOTES EMPTY SUBROUTINE
                └──────┘
```

128
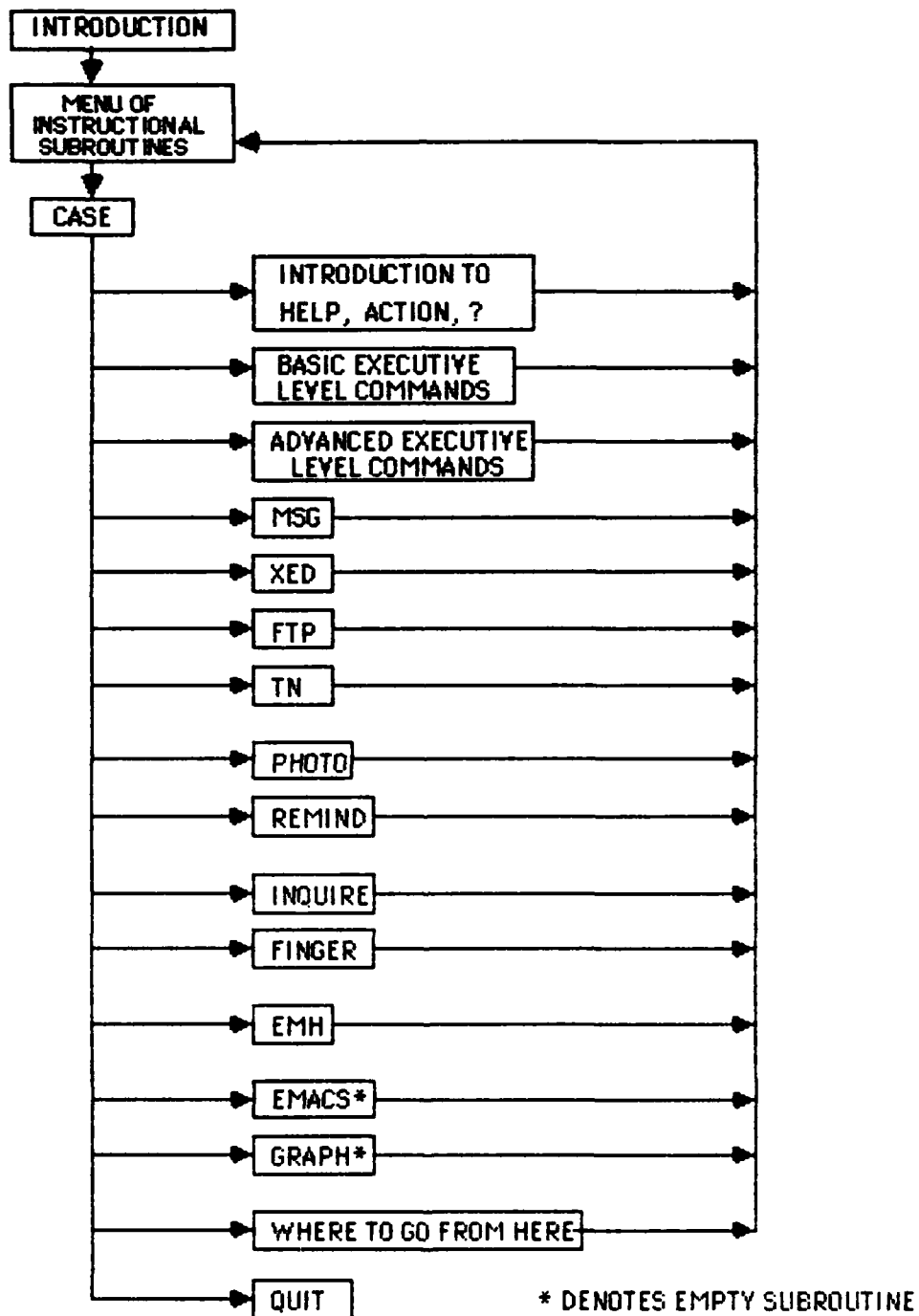
**This Flowchart Describes The ELC1 Subroutine:**

```
        ╭─────────────╮
       ╱     FROM       ╲
      (       MAIN        )
       ╲    PROGRAM      ╱
        ╰─────────────╯
              │
              ▼
     ┌─────────────────┐
     │  INTRODUCTION   │
     └─────────────────┘
              │
              ▼
     ┌─────────────────┐
     │  BASIC CURSOR   │
     │    COMMANDS     │
     └─────────────────┘
              │
              ▼
     ┌─────────────────┐
     │   DIRECTORY     │
     │   RELATED       │
     │   COMMANDS      │
     └─────────────────┘
              │
              ▼
     ┌─────────────────────┐
     │  SUBROUTINES  TO    │
     │   DEMONSTRATE       │
     │    DIRECTORY        │
     │  RELATED COMMANDS   │
     │ ................... │
     │  DIRECTORY          │
     │  TYPE               │
     │  APPEND             │
     │  RENAME             │
     │  ARCHIVE            │
     │  DELETE             │
     │  UNDELETE           │
     │  EXPUNGE            │
     └─────────────────────┘
              │
              ▼
     ┌─────────────────┐
     │ SYSTEM  RELATED │
     │    COMMANDS     │
     └─────────────────┘
              │
              ▼
     ┌─────────────────┐
     │    CLOSING      │
     │  INFORMATION    │
     └─────────────────┘
              │
              ▼
     ┌─────────────────┐
     │     RETURN      │
     └─────────────────┘
              │
              ▼
        ╭─────────╮
       ╱    TO     ╲
      (    MAIN     )
       ╲  PROGRAM  ╱
        ╰─────────╯
```

129
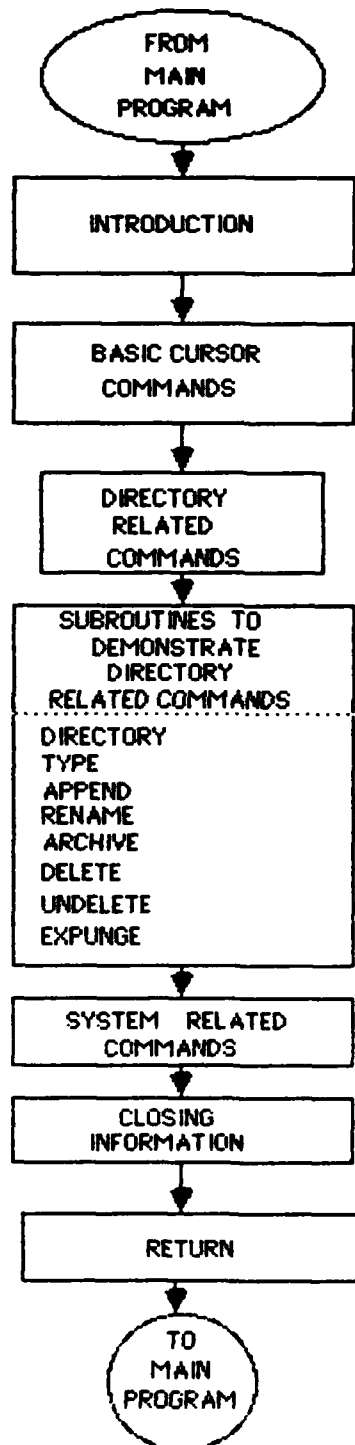
**This Flowchart Describes The ELC2 Subroutine:**

```
              ╭─────────────╮
             (     FROM      )
             (     MAIN      )
             (    PROGRAM    )
              ╰─────────────╯
                    │
                    ▼
            ┌─────────────────┐
            │  INTRODUCTION   │
            └─────────────────┘
                    │
                    ▼
            ┌─────────────────┐
            │ ADVANCED CURSOR │
            │    COMMANDS     │
            └─────────────────┘
                    │
                    ▼
            ┌─────────────────┐
            │    DIRECTORY    │
            │    RELATED      │
            │    COMMANDS     │
            └─────────────────┘
                    │
                    ▼
            ┌─────────────────┐
            │ SUBROUTINES  TO │
            │  DEMONSTRATE    │
            │    DIRECTORY    │
            │ RELATED COMMANDS│
            │······TALK·······│
            └─────────────────┘
                    │
                    ▼
            ┌─────────────────┐
            │ SYSTEM  RELATED │
            │    COMMANDS     │
            └─────────────────┘
                    │
                    ▼
            ┌─────────────────┐
            │    CLOSING      │
            │  INFORMATION    │
            └─────────────────┘
                    │
                    ▼
            ┌─────────────────┐
            │     RETURN      │
            └─────────────────┘
                    │
                    ▼
              ╭─────────────╮
             (      TO       )
             (     MAIN      )
             (   PROGRAM     )
              ╰─────────────╯
```

130
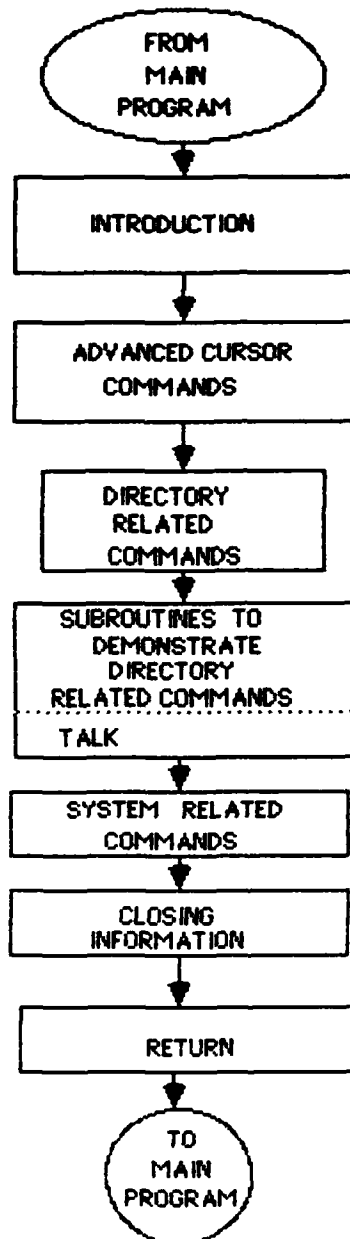
# This Flowchart Is Typical For The Following Subroutines:

INTRODUCTION

AMSG (MSG)

AXED (XED)

ATN (TN)

AFTP (FTP)

APHOTO (PHOTO)

ARMND (REMIND)

AINQR (INQUIRE)

AFNGR (FINGER)

AEMH (EMH)

```
        ( FROM
          MAIN
         PROGRAM )
            |
            v
     [ INTRODUCTION ]
            |
            v
      [ DEFINITIONS ]
            |
            v                      ( TO
      [ COMMANDS              ]   MAIN
      [ & USES   ]            ] PROGRAM )
            |                        ^
            v       NO               |
         < DEMO > -----------> [ RETURN ]
            |                        ^
           YES                       |
            v                        |
      [ SPECIFIC      ] <-------     |
      [ COMMAND ]            |       |
            |                |       |
            v                |       |
      [ REQUEST       ] <--- |       |
      [ USER INPUT ]   <--   |       |
            |            |   |       |
            v            |   |       |
      [ USER INPUT ]     |   |       |
            |            |   |       |
            v       YES  |  YES    YES  NO
       < CORRECT  > --------> < MORE    > --
       < RESPONSE >             < TO DEMO >
            |                        ^
           NO                        |
            v       YES              |
       < FIRST TRY > --> [ ERROR MESSAGE #1 ]
            |
           NO
            v       YES
      < SECOND TRY > --> [ RESET COUNTER
            |             FOR NUMBER
           NO             OF TRIES (NUM) ]
            v
      [ PROPER      ]
      [ RESPONSE ]
            |
            v
     YES         NO
    < TRY AGAIN >
```

RESET COUNTER
FOR NUMBER
OF TRIES (NUM)

ERROR MESSAGE
# 2

ERROR MESSAGE
# 1

131

# This Flowchart Is Typical For The Following Subroutines:

DIRECT

TYPE

APPPEND

RENAME

ARCHIVE

UNDELETE

EXPUNGE

TALK



132

**This Flowchart Describes The Where To**
**Go From Here Or BILBO Subroutine:**

```
        ╭─────────╮
        │  FROM   │
        │  MAIN   │
        │ PROGRAM │
        ╰─────────╯
             │
             ▼
   ┌──────────────────┐
   │   INTRODUCTION   │
   └──────────────────┘
             │
             ▼
   ┌──────────────────┐
   │   DEFINITIONS    │
   └──────────────────┘
             │
             ▼
   ┌──────────────────┐
   │  COMMANDS/USES   │
   └──────────────────┘
             │
             ▼
   ┌──────────────────┐
   │   HOW TO GET TO  │
   │    < BILBO >     │
   └──────────────────┘
             │
             ▼
   ┌──────────────────┐
   │    DOCUMENTS     │
   └──────────────────┘
             │
             ▼
   ┌──────────────────┐
   │    PERSONNEL     │
   └──────────────────┘
             │
             ▼
   ┌──────────────────┐
   │   INSTITUTES/    │
   │   COMPANIES      │
   └──────────────────┘
             │
             ▼
        ╭─────────╮
        │ RETURN  │
        ╰─────────╯
```
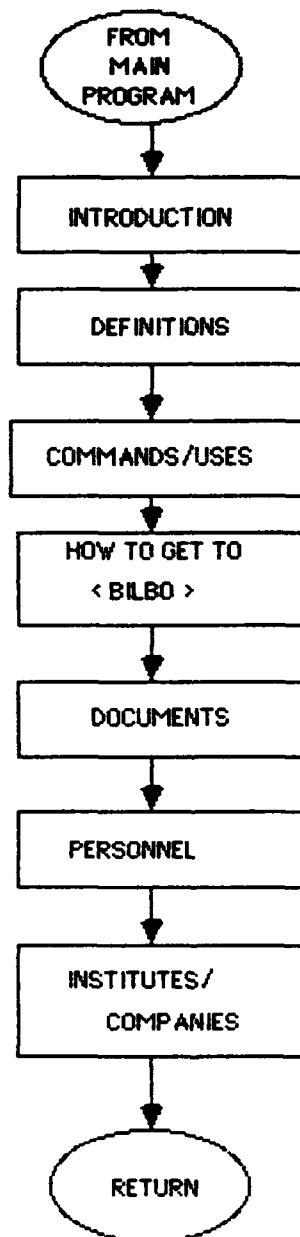
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   Monterey, California 93943

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11. Sam Delatorre            2
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   Information Sciences Institute
   4676 Admiralty Way
   Marina del Rey, California 90292

# END

# FILMED

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# DTIC