COMMUNITY MEMORY USER'S MANUAL

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CM User's Manual

Carl Farrington

The Community Memory Project

The proposed Community Memory user interface is described in the form of a user's manual for the hypothetical system. All important features, terminology, and concepts are included.

1. Introduction

This document contains all the information needed to use *version 4* of *Community Memory (CM)*. It contains both introductory material and advanced procedures.

Other documents describe system administration and software internals.

The first section of this document introduces basic concepts and terminology. The second section explains how to get started using CM. The third section contains more advanced techniques. The fourth section contains reference information.

Terms with a technical meaning in the scope of this document are presented in italics (underlined on impact printers) the first time they are used. These words and phrases are defined in a glossary in the fourth section of this document.

1.1 What is Community Memory?

CM is a system for the unmediated sharing of information for use by the general public. Anyone can become a *user* of CM. As a user, you can put *messages* into CM, or look at messages put into CM by others. A message is a short piece of text containing someone's ideas or observations on a particular subject.

Putting a message into CM is called *adding* the message. You can add a message that stands on its own, or as a *response* to another message. The user who adds a message to CM is called the message's *author*.

Users add and read messages through *public terminals*. The main focus of this document is how to use the public terminals.

A local Community Memory system consists of several public terminals and a single central computer called a *node*. The node stores all of the messages added through any of the public terminals. This means that a message added through one public terminal is available for reading on all other public terminals attached to that node.

A full implementation of CM consists of many nodes which exchange data with one another. The messages stored on a node may be *originals*, which are added through local public terminals, or *copies*, which are received from other nodes. Users may only read messages stored on the node to which their public terminal is attached, but these may include copies of messages originating anywhere in the network.

1.2 The Public Terminals

A public terminal consists of a *keyboard*, *screen*, *coinbox*, and optional *printer*.

You use the keyboard to cause CM to do things for you. You do this by pressing one or more *keys* on the keyboard. The keyboard contains a standard set of *typewriter keys*, including *RETURN*, for entering text, *arrow keys* for moving things displayed on the screen, and the special keys *DELETE*, *INSERT*, *BACKSPACE*, *CLEAR*, *HELP*, *SELECT*, *UNDO*, and *MENU*.

The terminal also has several *programmable function keys* which you can assign to any commonly used function.

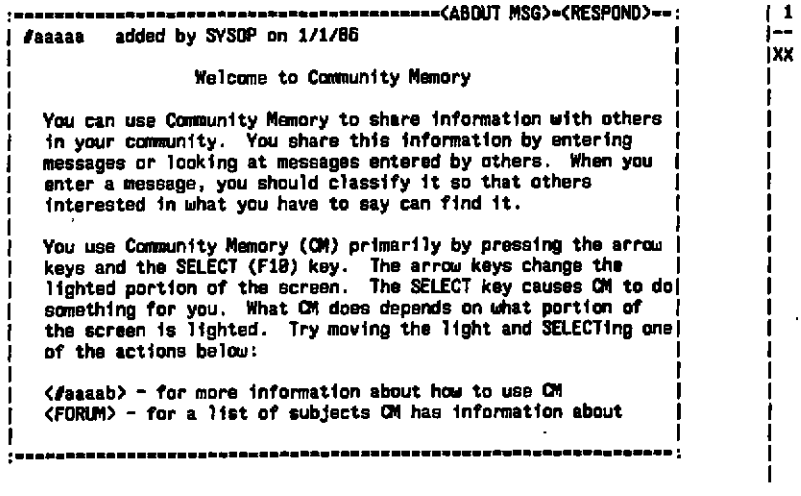
2. Basic Functions

This section describes the basics of how to use a CM public terminal.

2.1 Getting Started

If you approach a public terminal when no one is using it, you will find it displaying a *teaser*, which is a moving display designed to attract attention and induce people to try using CM. If you press any key on the keyboard, the teaser stops and your *session* with CM begins. Your session will continue until you tell CM you are through, or until 2 minutes go by without you pressing any keys. To prevent this from taking you by surprise, CM will warn you to press a key 30 seconds before it ends your session.

During your session, CM displays a list of messages called the *browse list* on the screen for you to read. When your session starts, the browse list contains only one message, called the *opening message*. When the opening message is displayed, the screen will look like this:



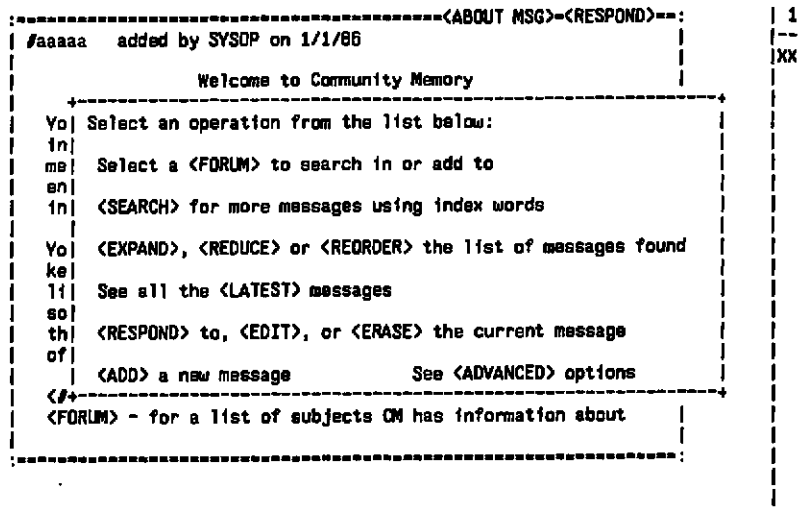
The opening message gives you the basic information you need to use CM.

The words "ABOUT MSG" in the opening message will be *highlighted*. By using the arrow keys, you can move this highlight around the screen, to any other phrase between "<" and ">" characters. These phrases that you can highlight are called *buttons*. Each button is a command to CM. If you press the SELECT key on the keyboard, CM does what the highlighted button tells it to do. This is called *selecting a button*. Note that buttons (which are on the screen) and keys (which are on the keyboard) are very different things, but are used in similar ways. PRESSING a KEY or SELECTING a BUTTON are both ways of telling CM to do something.

If you press INSERT followed by a programmable function key while a button is highlighted, that function key can then be used in place of that button.

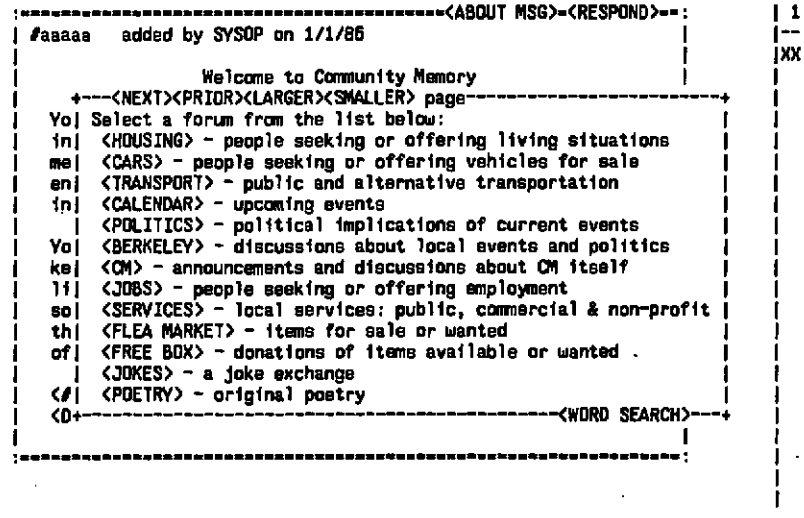
2.2 Searching for Messages

You begin searching for messages by selecting the FORUM button. If you want to search for messages and the opening message is not on the screen, you can press the MENU key. The MENU key can be used at any time to put the most important buttons onto your screen. If you pressed the MENU key while looking at the opening message, your screen would look like this:



The box drawn on your screen by the MENU key is called a *dialog box*. The FORUM button (the first button in the dialog box) will be highlighted. As before, you can move the highlight around to other buttons in the box using the arrow keys, but you can't move the highlight outside the box. Once you have a dialog box on your screen, you must do what the box tells you (in this case, "Select an operation from the list below"). If you change your mind and want to get out of a dialog box without doing what it says, press the UNDO key.

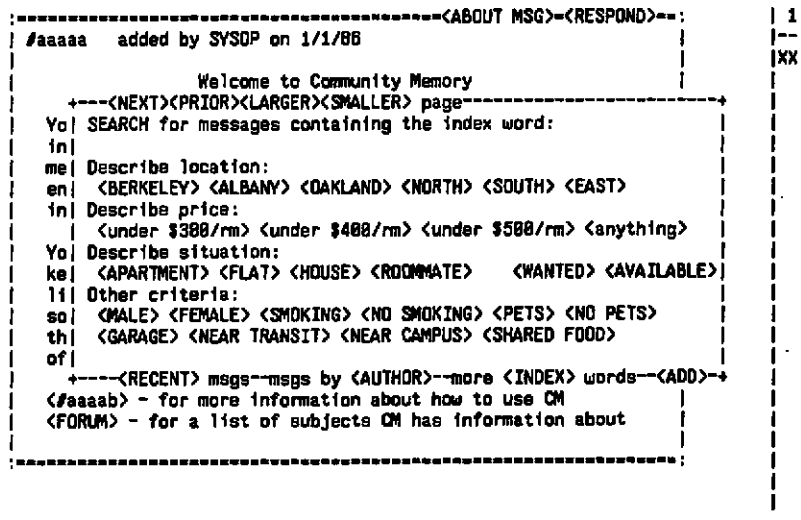
After you select the FORUM button, your screen will look like this:



This screen also contains a dialog box, this one listing all of the *forums* available on this CM node. A forum is a collection of messages on a particular subject. You begin searching for a message by choosing a forum in which to search.

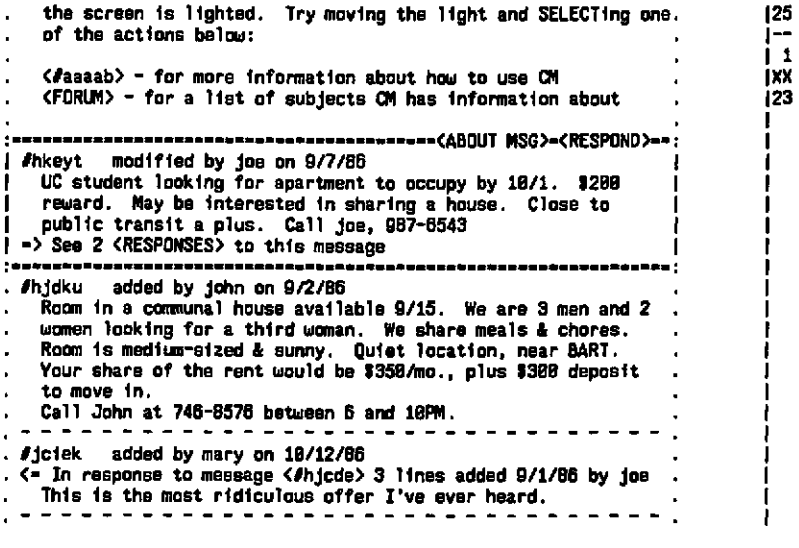
CM contains more forums than it can list on a single screen. You can move back and forth through the list of forums one screenful at a time by selecting the PRIOR and NEXT page buttons. The LARGER and SMALLER page buttons expand and shrink the dialog box itself so that each page contains more or fewer forums. The WORD SEARCH button is described in the Advanced Functions section.

After you select a forum, CM will display another dialog box in which you further describe what you are searching for. The contents of this dialog box depend on the forum you are searching in. If you had chosen HOUSING, for example, your screen would look like this:



The buttons in the box correspond to *index words* that authors may have chosen to describe their messages. Selecting one of the buttons within the dialog box will put all the messages whose authors chose that index word into your browse list. Buttons in the bottom line of the dialog box are described in the Advanced Functions section, except for the ADD button, which is described in the Adding Messages section.

After you select an index word button, your screen will look like this:



This is a display of your browse list (just like the first display) except that now it contains more than one message. The opening message is still at the top of the list, but now most of it has scrolled off the top of the screen to make room for new messages. The number in the upper right corner of the screen (25) tells you how many messages you have in your list. The 1 and 23 just below this number indicate that there is one message above the current message in the list and 23

messages below it. In the list of messages itself, the current message is indicated by the heavier border.

The highlight is always in the current message. Initially, it will be on the ABOUT MSG button. If you attempt to move the highlight up or down off of the current message, the current message changes to the previous or next message in the browse list. If the current message is not completely on the screen, CM scrolls the screen to bring it completely into view. By moving the highlight repeatedly, you can scroll through the entire list of messages.

If a message is longer than a specified maximum, only a portion of it will be displayed. In this case, when the message becomes the current message, the border around the message will include buttons for seeing other pages of the message or adjusting the amount of space the message occupies on the screen.

If you try to move the highlight off of the browse list with the right arrow, it will highlight the "XX" on the right side of the screen. While the "XX" is highlighted, the up and down arrows will quickly change the current message and scroll through the list of messages. A left arrow will return the highlight to the browse list.

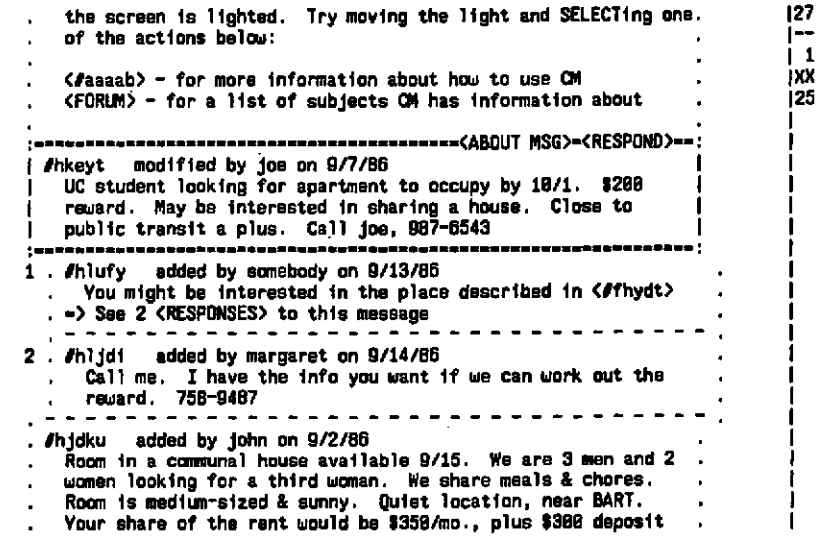
The first line of each message contains information about the message itself. The five letters following the "#" at the start of the line is a code that uniquely identifies the message. This code is called the *tag* of the message. The tag is assigned to the message automatically when the message is added to CM. If you remember the message's tag, CM will always be able to find the message for you again.

The first line of each message also contains the name of its author. These *pen names* are made up by the author when the message is entered. Pen names are protected by passwords to prevent people other than the author from using the pen name, but several users could agree to share a pen name, or a single user could have several pen names.

The first line of the message also gives the date that the message was added or the date of the most recent change to the message.

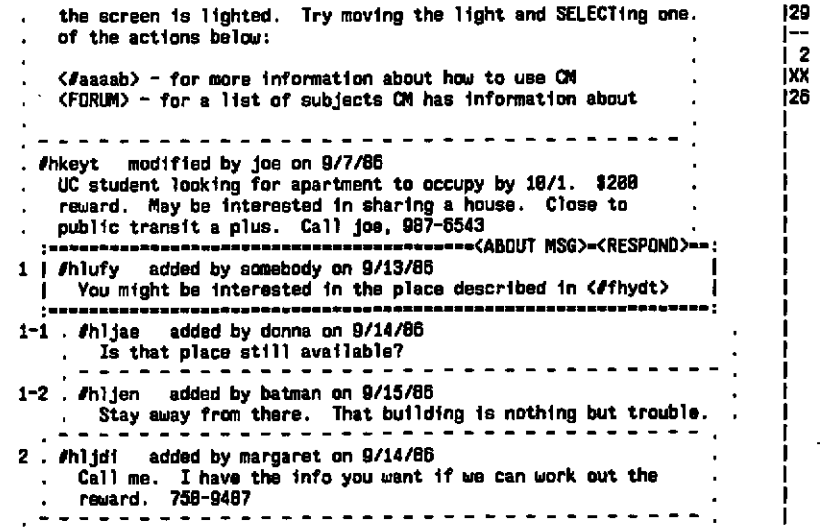
If people have written responses to messages, or if a message is itself a response, it will contain a line that tells you so. The line at the end of the current message (#hkeyt) tells you that two people have responded to that message. The line contains a button which you can select to see their responses. The second line of the bottom message on the screen (#jciek) tells you that that message is a response to another message. Selecting the button in that line will show you the message that #jciek responds to.

Responses are shown indented under the message they respond to. If you select the RESPONSES button in message #hkeyt, the screen will look like this:



Note the *response numbers* added to the left of the indented responses. Note also that the line containing the button for displaying the responses disappeared when the responses were displayed.

Responses can have responses of their own. These are displayed by further indenting. If you select the RESPONSES button in message #hlufy, the screen would look like this:



If responses are nested deeply enough, they may be indented far enough to the right to not show up completely on the screen. If this is the case, the entire screen will be shifted to the left sufficiently far to center the current message. If the screen is shifted to the left, it will be done in such a way that the response numbers will have dashes instead of digits in the leftmost column.

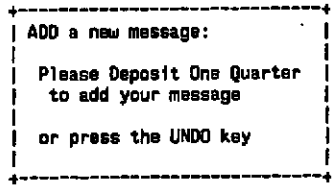
You can use the response numbers to move quickly between responses. If you try to move the highlight off the left edge of the current message (#hlufy), it will highlight the response number "1". If you then press the down arrow, the highlight will move to the response number "2" to the left of #hljdi, which then becomes the current message. Moving up and down on the response numbers always moves you to responses with the same or less indentation.

Where response numbers contain dashes, you have even more flexibility in how you can use them. If #hljae were the current message, trying to move the highlight off of the left edge of the message would highlight the second "1" in the response number "1-1". Up and down arrows at this point would move the highlight to the response numbers of adjacent messages. A left arrow would move the response number to the first "1" in the "1-1". Up and down arrows at this point would move the highlight to the response numbers "1" and "2" (the adjacent messages at the same indent as the highlight).

2.3 Adding Messages

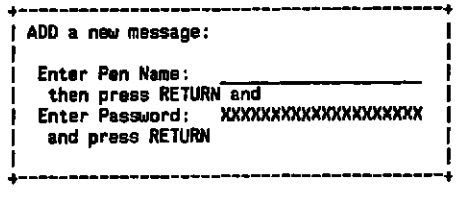
You begin adding a message by selecting the ADD button. There is an ADD button in the dialog box that CM displays when you press the MENU key.

When you select the ADD button, CM displays a dialog box asking you to deposit a quarter. At this point, you must either deposit a quarter or press the UNDO key. Pressing UNDO cancels the add and returns you to your browse list. If you deposit the quarter the add proceeds.



If you have not already used a pen name during this session, CM asks you for a pen name. If you have already used a pen name, CM allows you to enter your message at this point.

CM asks for a pen name by displaying a dialog box prompting you for a name and password.



When you enter the pen name and password and press RETURN, CM checks the pen name to see if it has been used before. If the pen name hasn't been used before, CM assumes you are trying to create a new pen name and asks you to

confirm the password you just typed.

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| That is a new pen name.  If you want to claim |
| this name as your own, re-enter your password. |
|                                               |
| or press UNDO to enter another pen name.      |
|                                               |
|  Pen Name:          King Arthur               |
|                                               |
|  Enter Password:    XXXXXXXXXXXXXXXXXXX       |
|   and press RETURN                            |
|                                               |
+-----------------------------------------------+
```

If the pen name has been used before and the password doesn't match, CM presents an error message and asks you to try again:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Sorry!  That pen name and password don't match! |
|     Perhaps you mis-typed the password.       |
|                                               |
| Please try again....                          |
|                                               |
|  Enter Pen Name:  ________________            |
|   then press RETURN and                       |
|  Enter Password:    XXXXXXXXXXXXXXXXXXX       |
|   and press RETURN                            |
|                                               |
+-----------------------------------------------+
```

Once CM has gotten a valid pen name, it displays an empty message for you to fill in. The empty message is placed in the browse list after the current message. The empty message then becomes the new current message. The screen will then look, for example, like this:

```
.   the screen is lighted.  Try moving the light and SELECTing one.      |26
.   of the actions below:                                               |--
.                                                                       |
.   <#aaaab> - for more information about how to use CM                 | 2
.   <FORUM> - for a list of subjects CM has information about           |XX
.                                                                       |23
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - |
. #hkeyt   modified by joe on 9/7/86                                    |
.   UC student looking for apartment to occupy by 10/1.  $200           |
.   reward.  May be interested in sharing a house.  Close to            |
.   public transit a plus.  Call joe, 987-6543                          |
:=============================================<FINISHED>=<ERASE>==:      |
| <AUTHOR>: King Arthur                        <EXPIRES>: 12/1/86  |      |
|                                                                       |
:=================================================================:      |
. #hjdku   added by john on 9/2/86                                      |
.   Room in a communal house available 9/15.  We are 3 men and 2        |
.   women looking for a third woman.  We share meals & chores.          |
.   Room is medium-sized & sunny.  Quiet location, near BART.           |
.   Your share of the rent would be $350/mo., plus $300 deposit         |
.   to move in.                                                         |
.   Call John at 746-8576 between 6 and 10PM.                           |
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - |
. #jciek   added by mary on 10/12/86                                    |
. <= In response to message <#hjcde> 3 lines added 9/1/86 by joe        |
```

The *cursor* is on the blank line of the message, allowing you to type your message

into CM. The message has not yet been assigned a tag, but has been assigned a pen name and expiration date. Selecting the AUTHOR or EXPIRES button allows you to change these values. Selecting the ERASE button will present a dialog box which looks like this:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Select an option below...                     |
|                                               |
|  <ERASE> the new message (returns your quarter) |
|  Continue <EDITING> the new message           |
|  <STORE> the message (CM keeps your quarter)  |
|                                               |
+-----------------------------------------------+
```

The FINISHED button presents a similar dialog box, with the same options in a different order:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Select an option below...                     |
|                                               |
|  <STORE> the message (CM keeps your quarter)  |
|  Continue <EDITING> the new message           |
|  <ERASE> the new message (returns your quarter) |
|                                               |
+-----------------------------------------------+
```

From either box, selecting EDITING returns you to editing the message, and selecting ERASE removes the message from CM and from the browse list, and returns your quarter.

If you select STORE, CM asks you to select index words that describe your message. CM will ask you to select these words from a dialog box that looks similar to the one you use for searching. If you are in the HOUSING forum, the dialog box might look like this:

```
+-------------------------------------------<FINISHED>--+
| INDEX words selected (select again to remove):        |
|  <BERKELEY> <ALBANY> <$400-500/rm>                    |
|  ---------------------------------------------------  |
| Select up to 7 more words from the list below:        |
|                                                       |
| Describe location:                                    |
|  <BERKELEY> <ALBANY> <OAKLAND> <NORTH> <SOUTH> <EAST> |
| Describe price:                                       |
|  <under $300/rm> <$300-400/rm> <$400-500/rm> <over $500/rm> |
| Describe situation:                                   |
|  <APARTMENT> <FLAT> <HOUSE> <ROOMMATE>    <WANTED> <AVAILABLE> |
| Other criteria:                                       |
|  <MALE> <FEMALE> <SMOKING> <NO SMOKING> <PETS> <NO PETS> |
|  <GARAGE> <NEAR TRANSIT> <NEAR CAMPUS> <SHARED FOOD>  |
+-------------------------------more <INDEX> words------+
```

You should select index words from the box that describe your message, up to the maximum number allowed. As you select a button, it is copied to the top part of the box. The top of the box is your record of the index words you have selected. Selecting an already selected word causes it to be un-selected and to disappear from the top part of the dialog box. When you have selected the best words for

describing your message, select the FINISHED button.

The INDEX button at the bottom of the box is explained in the Advanced Functions section.

When you select FINISHED, CM examines the index words you have chosen to see if your message might belong in any forum other than the one you are currently working in. If you have used index words that are associated with any other forums, CM presents you with a list of those forums and allows you to include your message in them as well. The list appears in a dialog box that looks like this:

```
+---<NEXT><PRIOR><LARGER><SMALLER> page----------<FINISHED>--+
| Forums selected (select again to remove):                   |
|  <HOUSING>                                                  |
|  ---------------------------------------------------------  |
| Select any other forums you want your message included in:  |
|                                                             |
|  <HOUSING> - people seeking or offering living situations   |
|  <CALENDAR> - upcoming events                               |
|  <BERKELEY> - discussions about local events and politics   |
|  <JOBS> - people seeking or offering employment             |
|  <SERVICES> - local services; public, commercial & non-profit |
|  <FLEA MARKET> - items for sale or wanted                   |
|  <FREE BOX> - donations of items available or wanted        |
|                                                             |
+-------------------------------<WORD SEARCH>--<ENTER NAME>--+
```

Select buttons for any relevant forums, and then select FINISHED. As with index words, you can undo mistakes by selecting them again. The WORD SEARCH and ENTER NAME buttons are described in the Advanced Functions section.

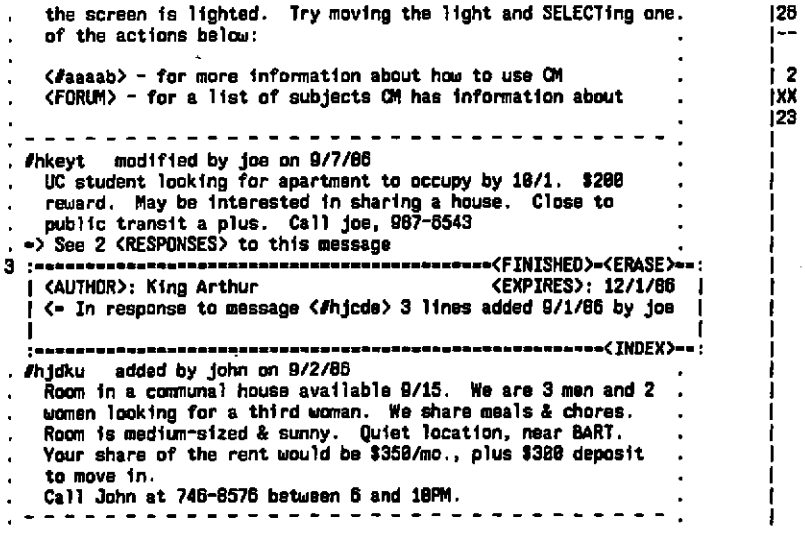
After you have selected index words and forums for your message, it will be assigned a tag and displayed in the browse list like any other message:

```
.  the screen is lighted.  Try moving the light and SELECTing one.   .  |26
.  of the actions below:                                             .  |--
.                                                                    .  |
.  <#aaaab> - for more information about how to use CM               .  | 2
.  <FORUM> - for a list of subjects CM has information about         .  |XX
.                                                                    .  |23
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - .  |
. #hkeyt   modified by joe on 9/7/86                                 .  |
.  UC student looking for apartment to occupy by 10/1.  $200         .  |
.  reward.  May be interested in sharing a house.  Close to         .  |
.  public transit a plus.  Call joe, 987-6543                       .  |
:==================================<ABOUT MSG>=<RESPOND>==:  |
| #jguhf   added by King Arthur on 11/1/86                    |  |
|  Student looking for 1-bedroom apartment.  Can pay up to $450 |  |
|  for the right place.  Must be large, sunny, in a safe      |  |
|  location and convenient to grocery shopping (walking       |  |
|  distance).  Call 549-8688 weekdays                         |  |
:=============================================================:  |
. #hjdku   added by john on 9/2/86                                   .  |
.  Room in a communal house available 9/15.  We are 3 men and 2     .  |
.  women looking for a third woman.  We share meals & chores.      .  |
.  Room is medium-sized & sunny.  Quiet location, near BART.       .  |
.  Your share of the rent would be $350/mo., plus $300 deposit     .  |
.  to move in.                                                     .  |
.  Call John at 746-8575 between 6 and 10PM.                       .  |
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - .  |
. #jctek   added by mary on 10/12/86                                 .  |
<= In response to message <#hjcde> 3 lines added 9/1/86 by joe       .  |
```

2.4 Responding to Messages

Responding to messages is very similar to adding a new message. You can only respond to a message when it is your current message. You begin by selecting the RESPOND button in the border of the message. CM will ask for a quarter and, if necessary, a pen name, just as it does when you are adding.

When CM displays the empty message for you to fill in, it will be indented immediately beneath the message you are responding to, and will contain the appropriate response number. It will also contain a line indicating that it is a response:



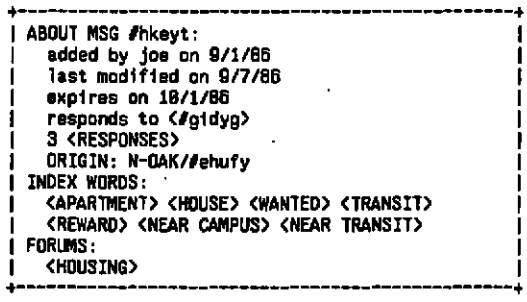
When you select the ERASE or FINISHED buttons, CM displays a dialog box as before, but selecting the STORE option stores the message immediately without adding index words. To add index words, you must select the INDEX button in the message border. The INDEX button takes you through the index word assignment like STORE did when you were adding.

3. Advanced Functions

The following functions allow you to make more effective use of CM. They allow you to keep information that you have entered up to date, find information more easily, and collect together information that you have found for others to use.

3.1 The ABOUT MSG button

The border of the current message always contains an ABOUT MSG button (unless you are editing the message). Selecting the ABOUT MSG button provides you with more information about where the message came from and how it is classified than is available in the first line of the message. Selecting the ABOUT MSG button displays a dialog box that looks like this:



The date added, the expiration date, the index words, and the forums are always present. The last modified date is present if the message has been changed since it was entered.

If a message is a response or has responses, the appropriate lines will be present. Selecting the buttons on these lines will have the same effect as selecting the corresponding lines in the message itself, except that these lines will always be available; they do not disappear once the related messages are displayed.

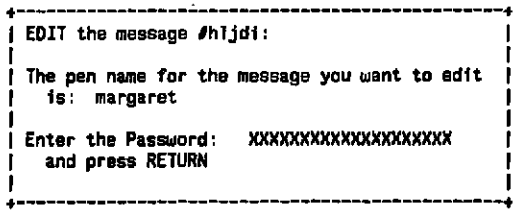
The ORIGIN line is present only if the message is a copy of a message from another node. This line gives the node on which the message was entered and the tag assigned to the message on that node.

3.2 Editing and Erasing Messages

If you are the author of a message, you can edit or erase that message. You first make the message to be worked on the current message. Then press the MENU key and select the EDIT or ERASE button from the menu displayed. Further details are given below.

Messages can only be edited or erased on the same node they were originally entered on. If the ABOUT MSG box contains an ORIGIN line, the message was entered on another node and cannot be edited or erased. The reason for this is that your pen name and password are only known by the node you first used them on. Thus you have no way of proving to any other node who you are. In fact, two different users on two different nodes could use the same pen name without conflict (eg. you could have a "nancy" in Berkeley and another "nancy" in Albany).

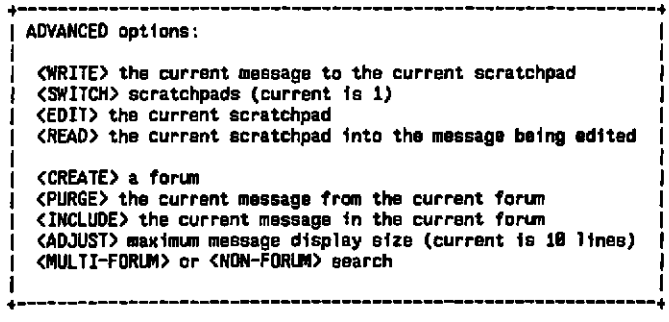
3.2.1 Editing a Message When you ask to edit a message, CM checks to see if the last pen name you used matches the one on the message. If the pen names don't match, or you haven't yet used a pen name in this session, CM presents a dialog box asking you for the password.



When password has been validated, CM will ask you for a quarter unless you have added or edited this message already during this session. Then the message is displayed as it was when you added it (AUTHOR and EXPIRES are buttons). The border contains FINISHED, ERASE, and INDEX buttons that behave as when you add a response.

3.2.2 Scratchpads CM provides nine areas called *scratchpads* for storing text. One important use of these scratchpads is for moving text while adding or editing messages. These scratchpads are numbered 1 through 9. One of them is always selected as the *current scratchpad*. The current scratchpad is initially 1.

To use the scratchpads, press the MENU key and select the ADVANCED button. CM will display a dialog box containing a menu of advanced options:



The WRITE button writes the text of the current message into the current scratchpad. The SWITCH button causes CM to prompt you for a new current scratchpad number (note that it also displays the old number). The EDIT button displays a dialog box showing the contents of the current scratchpad and allowing you to edit it. The border of the dialog box contains a FINISHED button which returns you to your browse list.

The READ button only appears if you are adding or editing a message. Selecting this button reads the content of the current scratchpad into your message.

As an example of how to use the scratchpads, assume you wanted to move a block of text in a message you were editing. First, you would select WRITE to save the message in the scratchpad. Then delete the block of text from its old position. Select EDIT to see the copy of the message in the scratchpad, and delete everything but the block you wish to move. Select FINISHED to return to editing the message. Finally, move the cursor to the place you want to insert the block

and select READ.

You can use similar techniques to move text from one message to another. You can copy text out of any message, not just the ones you can edit.

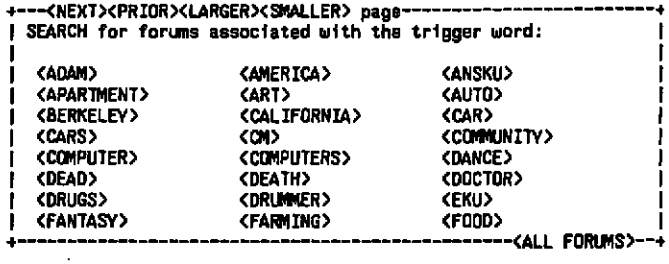
3.2.3 Erasing a Message When you select the ERASE button, CM presents a dialog box asking you to confirm the operation. As in editing, you will be prompted for a password if you have not been using the matching pen name. After completing both of these checks, CM erases the message from the database.

3.3 Putting Buttons in Messages

You can type buttons into the text of a message by enclosing a string of characters between "<" and ">" characters. What the button does depends on the enclosed character string. See the Button Definition Language section in the Appendices for more information.

3.4 Searching for Forums

When CM presents a list of forum names to pick from, the border of the dialog box will contain a WORD SEARCH button. If you select this button, CM replaces the list of forum names with a list of index words associated with forums (called *trigger words*).



Trigger words are listed in alphabetical order. When you select a trigger word, CM replaces the trigger word list with a list of the forums associated with that trigger word. You can then select a forum from this shorter, more relevant list.

If the reduced list is not to your liking, you may select WORD SEARCH again to come up with a different list. If you want to return to the full list, select the ALL FORUMS button in the border of the dialog box containing the trigger word list.

The border of the dialog box containing the forum list also contains an ENTER NAME button. Selecting this button enables you to type in the name of the forum you want without having to find it in the list.

3.5 Working with the Browse List

The Basic Functions section of this manual describes one way to get messages from a particular forum with a particular index word into your browse list. You invoke this function with the FORUM button.

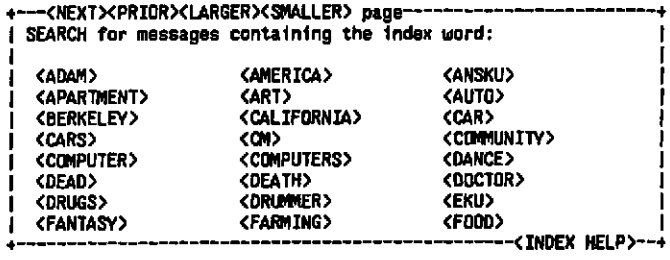
There are many more sophisticated ways to use your browse list. As you bring messages into your browse list by index word, some will be relevant to you and others will be irrelevant. You can use browse list functions to collect all possibly relevant messages, and then to find and eliminate most irrelevant ones. Once you have a reasonable number of messages, you can include and exclude messages individually, or move messages around in the list.

When using these functions, it is helpful to think of the browse list as divided into two parts. The messages above the current message should be thought of as the messages you have decided are worth looking at further. The current message and those below it should be thought of as the messages that still need to be sorted out. When searching, you add batches of raw messages to the list, weed out irrelevant ones, and move the current message down to include the filtered messages in the top part of the list.

3.5.1 EXPANDing the Browse List The Basic Functions section of this manual describes how to use the FORUM button to select a forum and search within it by index word. If you want to search using another index word in the same forum, you can do this by selecting the SEARCH button in the dialog box displayed by the MENU key.

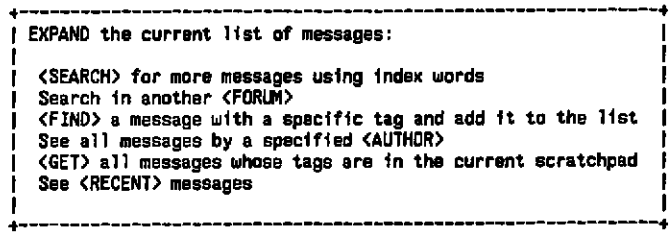
The SEARCH button displays the dialog box containing the important index words for the forum. Selecting an index word includes matching messages in your browse list after the current message. The bottom line of this dialog box contains additional special buttons. RECENT and AUTHOR are explained below. ADD was explained in the Basic Functions section.

The INDEX button displays a list of all the index words used in the forum in alphabetical order. Selecting an index word from this list has the same effect as selecting one from the SEARCH dialog box.



The INDEX HELP button returns you to the original SEARCH dialog box containing the suggested index words for the forum.

Further options for getting more messages into your browse list are available by selecting the EXPAND button in the dialog box displayed by the MENU key. This button displays a menu of all the different ways to add more messages to the browse list.



The SEARCH and FORUM buttons have already been described; they appear again on this menu for convenience. FIND displays a dialog box which prompts you for a tag, and then includes the message with this tag in your browse list after the current message. AUTHOR displays a dialog box which prompts you for a pen name, and then includes all messages by this author in your browse list after the current message. GET scans the current scratchpad for buttons containing tags and includes messages with these tags in your browse list after the current message.

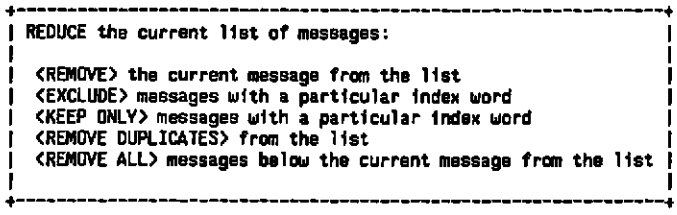
RECENT places all the messages in the current forum (or all the messages in the node, if no forum is currently selected) at the end of your browse list. Each time you select RECENT, it replaces messages from the last time you selected RECENT, but messages will only be replaced if they are after the current message and after the positionally last change that you made to your browse list. For example, if you selected RECENT, scanned through the first ten messages displayed, and then used FIND to insert a message in the eleventh position, another RECENT would replace the messages starting with twelve.

3.5.2 Multi-forum and Non-forum Searches If you want to search several forums simultaneously, or the entire database, you can do so by using buttons on the ADVANCED menu.

The NON-FORUM button de-selects your current forum, so that you are in the same state as when you started your session (i.e. without a current forum). Now any searches done before selecting another forum will search the entire database. This button then displays a list of all the index words as if you had selected the SEARCH button.

The MULTI-FORUM button displays a dialog box for selecting several forums. This dialog box looks like the one for choosing forums while adding a message. The forums already selected are displayed in the top portion of the box. After you have selected as many forums as you like, select the FINISHED button. CM then displays a list of all the index words as if you had selected the SEARCH button. Searches will find messages in any of the selected forums. Multi-forum searches with a lot of forums may be somewhat slower than other searches.

3.5.3 REDUCEing the Browse List Selecting the REDUCE button from the dialog box displayed by the MENU key gives you a list of options for removing unwanted messages from your browse list.



Selecting the REMOVE button removes the current message from the list. This is useful for individually eliminating messages you don't want to see again after you have narrowed down the browse list with other buttons. If the current message has comments, CM asks you if you want to remove all the comments as well. If you opt to keep the comments, they will be moved to the left margin and treated as independent messages. The "In response to" lines will re-appear in each of the comments.

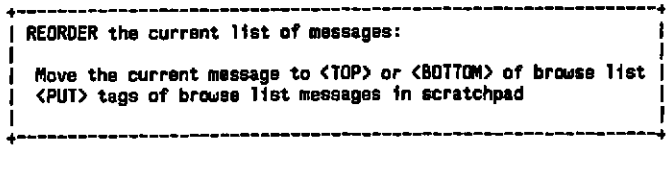
Selecting the EXCLUDE button presents an index word list like the one presented by SEARCH (except that the first line says "EXCLUDE messages containing the index word:"). Selecting an index word from this list removes all messages in the current forum containing that index word. Only messages at or below the current message are removed.

Selecting the KEEP ONLY button presents an index word list like the one presented by SEARCH (except that the first line says "KEEP ONLY messages containing the index word:"). Selecting an index word from this list removes all messages in the current forum but NOT containing that index word. Only messages at or below the current message are removed.

Selecting the REMOVE DUPLICATES button removes all messages below the current message which appear in the browse list in some earlier position as well.

Selecting the REMOVE ALL button removes all messages below the current message. CM will ask for confirmation before removing them.

3.5.4 REORDERing the Browse List Selecting the REORDER button from the dialog box displayed by the MENU key gives you a list of options for reordering the messages on your browse list.



The TOP and BOTTOM buttons move the current message to the top or bottom of the list. Usually, you would use TOP to save a message for later, and BOTTOM to put off deciding whether a message is relevant or not. (If you decide that a message is irrelevant, you would use REMOVE.) You cannot move a message to the bottom of the list if the bottom of the list is displaying RECENT messages.

The PUT button writes the tags of all messages in the browse list (except RECENT messages) into the current scratchpad in the form of buttons. By editing the scratchpad, you can change this list, and then read it back into the browse list with the GET button (see EXPANDing the Browse List). You may want to use the REMOVE ALL button before the GET button to avoid duplicating messages.

3.6 Special Forums

Messages and forums vary from one CM node to another, depending on the information needs of the users. However, some forums, messages, and pen names exist in every node.

The "Authors" forum contains a message for each pen name being used in the node. These messages are called *author descriptions*. One author description that will exist on every node is for the pen name *SYSOP*, which is reserved for the operators of the node.

The "Forums" forum contains a message for each forum in the node. These messages are called *forum descriptions*. Every node will contain forum descriptions for the forums "Forums", "Authors", and "Help". Additional forum descriptions are added when new forums are created (see below).

The "Help" forum contains messages explaining various procedures and conventions used in the node. "Help" will contain messages defining the special index word menus for each forum, the opening message displayed at the beginning of a session, and other help messages displayed by tags in the opening message. The opening message will always have the tag #aaaaa and will be authored by SYSOP.

3.6.1 Author Descriptions Author descriptions are added automatically to the Authors forum when a user first uses a pen name. Users may edit their author descriptions to change their passwords or to provide descriptive information about themselves. Author descriptions are easy to find, since they are always the oldest (last) message displayed by an AUTHOR search. An author description being edited appears as follows:

```
:-----------------------------------------<FINISHED>=<ERASE>==:
| #jguhe   added by King Arthur on 11/1/86                     |
|   I could describe myself here if I wanted to.               |
:-----------------------------------------<PASSWORD>=<INDEX>==:
```

Note that there are no AUTHOR or EXPIRES buttons. This is because the AUTHOR cannot be changed and the message has no expiration date. The PASSWORD button allows you to change your password. The INDEX button allows you to assign index words to your author description (classifying yourself so that others can find you).

The text of the message is available for you to describe yourself and your interests, and possibly to leave contact information.

The ERASE button will only allow you to erase your author description if there are no other messages by you left in the node.

3.7 User-created Forums

You can create and manage your own forums to hold information on a topic of importance to you. The person creating a forum is called its *host*. A forum is operated as a public service to all CM users. A forum is a tool for helping the user community to organize its information.

3.7.1 Creating a Forum You create a forum by selecting the CREATE button from the ADVANCED function menu. CM presents a dialog box asking for the new forum name. If you respond with a valid (not previously used) name, CM creates a forum description message for you to edit. The forum description originally appears as follows:

```
:=============================================<FINISHED>=<ERASE>==:
| <AUTHOR>: mary                                                  |
| Forum Name: HOUSING                                             |
| <DESCRIPTION>:                                                  |
|                                                                 |
| <DEFAULT EXPIRATION>: 30 days                                   |
| <CHANGES TO>:                                                   |
| <CHANGES FROM>:                                                 |
:=============================================================<INDEX>==:
```

If you select the ERASE button, CM returns to browsing without creating the forum.

The DESCRIPTION line is used to describe the forum in various lists. Selecting this button allows you to enter a description. The DEFAULT EXPIRATION line is used to calculate a default expiration date for messages added to this forum. Selecting this button allows you to change the value.

The CHANGES TO and CHANGES FROM lists specify forums on other nodes to exchange messages with. Selecting these buttons allows you to enter information into these lists. These lists are described further in the Networking section.

The body of the message is available for more detailed comments and notes about the forum.

The INDEX button allows you to assign index words to the forum description message. These index words can be used to find the message by searching in the "Forums" forum. They also serve as trigger words for the forum. You should use any words that might be used on messages that you want in your forum.

When you have finished editing the forum description, select FINISHED. CM will present you with a blank index word help message to edit. The index word help message is an empty message into which you type what you want to appear in the dialog box when users of this forum need to pick index words. For example, the index word help message to generate the dialog boxes used in the examples earlier in this document would appear as follows:

```
:=============================================<FINISHED>=<ERASE>==:
| #chuje   added by mary on 1/15/86                                |
|   Describe location:                                             |
|    <BERKELEY> <ALBANY> <OAKLAND> <NORTH> <SOUTH> <EAST>          |
|   Describe price:                                                |
|    <under $300/rm> <$300-400/rm> <$400-500/rm> <over $500/rm>    |
|   Describe situation:                                            |
|    <APARTMENT> <FLAT> <HOUSE> <ROOMMATE>    <WANTED> <AVAILABLE>|
|   Other criteria:                                                |
|    <MALE> <FEMALE> <SMOKING> <NO SMOKING> <PETS> <NO PETS>       |
|    <GARAGE> <NEAR TRANSIT> <NEAR CAMPUS> <SHARED FOOD>           |
:==================================================================:
```

When you select the FINISHED button, the creation of the forum is complete. The host of a forum can edit a forum description or index menu, in the same way as editing any other message. When being edited, a forum description appears as follows:

```
:=============================================<FINISHED>=<ERASE>==:
| #chujd   added by mary on 1/15/86                                |
| <AUTHOR>: mary                                                   |
| Forum Name: HOUSING                                              |
| <DESCRIPTION>: people seeking or offering living situations      |
| Index Word Help: <#chuje>        Purged Messages: <#chujf>       |
|   This forum is oriented toward making connections between       |
|   people looking for housing and those looking for roommates     |
|   or tenants.  Users of the forum are encouraged to exchange     |
|   information and opinions as responses, but messages using the  |
|   index words on the help message should essentially be housing  |
|   ads.  I'll try to keep old listings and nonsense out of the    |
|   forum.                                                         |
| <DEFAULT EXPIRATION>: 30 days                                    |
| <CHANGES TO>:                                                    |
| <CHANGES FROM>:                                                  |
| Work Areas: <#chujg>                                             |
:=================================================================<INDEX>==:
```

The forum name and the message tags cannot be changed. The "Index Word Help" tag refers to the message defining the index word help dialog box.

The "Purged Messages" and "Work Areas" tags refer to messages that are maintained by CM itself. These messages cannot be edited by any user. "Purged Messages" contains tags of messages explicitly removed from the forum by the host. "Work Areas" contain information used by CM to locate messages in forums more rapidly.

3.7.2 Managing a Forum Management of a forum consists of maintaining the list of trigger words and the forum description, and purging and including messages in the forum.

The trigger words and the forum description are what attract other users to your forum. By making them as complete and descriptive as possible, you will reach the largest possible audience while not interfering with those who aren't interested in the subject of the forum.

You can include any message you want into your forum by making that message the current message and selecting INCLUDE on the ADVANCED options menu. This is normally how you would pre-load a forum with information when you first create it.

On an ongoing basis, it is better to have users submit their messages to forums themselves, so that you don't have to hunt up all the relevant information. Your forum name will be presented to users who put any of your trigger words among their message's index words. They may then submit their message to your forum.

You may disagree with a user's choice of your forum. If you feel their message is sufficiently out of place, you may purge it from your forum. You do this by making that message the current message and selecting PURGE on the ADVANCED options menu. Purging a message removes it from your forum but does not erase it from the node. It will remain in any other forums, and can also be found via its tag or a non-forum search.

Messages purged by you will be recorded in the "Purged Messages" message associated with your forum. This prevents the author of the message from re-submitting it to your forum, and also allows other users to see what you have purged. This gives other users a practical record of your editorial decisions.

3.7.3 Networking If you own forums on two or more CM nodes, or want to cooperate with forum hosts on other nodes, you can connect forums together. Each forum to be connected must list the other forum names and node names in the CHANGES FROM and CHANGES TO lines of the forum descriptions. The CHANGES TO line lists those forums that are notified when messages are added, edited, or erased in the local forum. The CHANGES FROM line lists those forums from which such changes are copied into the local forum.

4. Appendices

4.1 Keyboard Details

This section explains the function of the keyboard in detail.

4.1.1 Arrow Keys What happens when you press an arrow key depends on whether you are editing text or not. When you are not editing text, the arrows move a highlight around between buttons. When you are editing text, they move a cursor through the text you are editing. A further distinction depends on whether you are editing a single line (as when you are typing an author name), or you are editing a message or scratchpad text, which can be several lines long.

4.1.1.1 Moving the Highlight When moving a highlight, the left and right arrows move the highlight left and right between buttons on the same line. Up and down arrows move to the next line above or below that contains buttons, and to the closest button on that line.

If the highlight is in a dialog box, arrow keys will not cause the highlight to cross the borders of the box. Instead, the highlight will wrap to the opposite side of the box.

If the highlight is on the browse list and on the first button on the line, the left arrow moves you to the response number (or does nothing if the current message has no response number). If you are on the last button on the line, the right

arrow moves you to the scroll bar. When the highlight is on the response numbers or scroll bar, the arrow keys can be used to move quickly through the browse list as described in the section on searching for messages.

If the highlight is on the browse list and up or down arrows cause the highlight to move to another message, the message moved to becomes the current message. If this message is not completely on the screen, the screen is scrolled (both vertically and horizontally) to display the entire message, up to the maximum allowable size for a message display.

4.1.1.2 Arrow Keys During Editing When editing, the arrows move the cursor up, down, left, and right within the editing area. The cursor can be moved all the way to the right margin of the editing area, even if no characters have been typed there.

Typing a left arrow at the left margin moves the cursor to the last typed character of the previous line. On the first line of the editing area, typing a left arrow at the left margin has no effect.

At the right margin, the right arrow moves to the first column of the next line. On the last line of the editing area, typing a right arrow at the right margin has no effect.

When editing a multi-line text (a message or scratchpad) any arrow key which causes the cursor to change lines also *reformats* (see below) adjacent lines.

Attempting to move the cursor out of the editing area with up or down arrows will have no effect, unless the message being edited contains buttons above or below the editing area. In that case, the cursor changes to a highlight and moves to the appropriate button.

4.1.2 Editing Keys The meanings of the editing keys also change between single-line and multi-line texts. In multi-line texts, CM attempts to fill paragraphs to keep words on as few lines as possible. Thus, changes to the edit line may affect neighboring lines.

The general rule for filling paragraphs is that if a line begins with a non-blank, and the first word on the line would fit on the end of the previous line, it is moved there. This implies that the first line of each paragraph begins with a blank (i.e. paragraphs are indented). A word is presumed to fit on a line only if there is enough room for both the word itself and a trailing blank.

During some editing operations, the filling rule may be temporarily violated, but only in the paragraph containing the cursor. Furthermore, paragraphs are always eventually brought back in conformity with this rule. The process of bringing a paragraph back into conformity with the filling rule is called reformatting the paragraph. If the character under the cursor moves during reformating, the cursor moves with it.

When editing any kind of text, the typewriter keys replace the character under the cursor with the character pressed, and move the cursor one character to the

right if it is not already in the rightmost column of the field. If the cursor is in the rightmost column and you are editing a single line, the last character is replaced and the cursor doesn't move.

Typing a character in the rightmost column of a multi-line text opens a blank line below the current line and moves the cursor on to it. In addition, if the old line contains a blank and the character typed was not a blank, the last word of the old line is wrapped down to the new line.

The INSERT key moves all characters under and right of the cursor one character to the right and inserts a blank under the cursor. The character in the rightmost column of the field is lost in single line editing. In multi-line editing, words at the right margin are wrapped down to the next line as necessary. If the next line is full, a new blank line is inserted below the current line and the word at the right margin is wrapped down to it.

The DELETE key deletes the character under the cursor and moves all characters to the right of the cursor one character to the left. The rightmost column becomes a blank.

The BACKSPACE key acts like the delete key, except it deletes the character to the left of the cursor. In the leftmost column of a multi-line edit, BACKSPACE behaves like left arrow.

The CLEAR key replaces all characters to the right of the cursor with blanks.

RETURN signals the completion of editing for single-line edits. For multi-line edits, RETURN creates a blank line after the current line, wraps all words to the right of the cursor (if any) to the new line, inserts a blank at the beginning of the new line, and puts the cursor to the right of the blank. This, in effect, inserts a paragraph boundary.

All above keys except RETURN auto repeat while being held down.

4.1.3 Other special keys The effects of the other special keys are:

HELP - Display a help dialog box. The contents of this box are derived from a message in the HELP forum. The message used depends on the context in which the HELP key is pressed (eg. pressing HELP while in a dialog box will display a help message explaining the purpose of the dialog box and what is required of the user). The message displayed may contain buttons that you can select to see additional help messages in the dialog box. The UNDO key or a FINISHED button in the border removes the dialog box from the screen.

MENU - Display a dialog box containing a menu of the main CM operations, from which you can select a button.

SELECT - Perform the operation that corresponds to the currently highlighted button.

UNDO - Undo the effects of the last change to the browse list. Multiple UNDOs will continue back in history. UNDO affects only which messages are in the browse list and which message is current. Scratchpad and message contents are unaffected. Pressing UNDO while in a dialog box will return to the previous dialog box, if any, or remove the dialog box from the screen and cancel the operation in progress.

4.2 Glossary

The following terms have special meanings in the context of Community Memory.

adding creating a new message and storing it in CM

arrow keys
4 keys on the public terminal keyboard labeled with arrows (up, down, left, right). Used for moving the cursor or highlight around on the screen.

author the user who adds a message to CM

author descriptions
a message in the "Authors" forum. There is one author description for each author on CM.

BACKSPACE
One of the keys on the public terminal keyboard. Used for backing up the cursor while erasing mistakes.

browse list The list of messages currently being displayed for a user.

buttons
areas of the public terminal screen between "<" and ">" characters. One of these buttons is always highlighted. Pressing the SELECT key while a button is highlighted causes CM to perform some action corresponding to that button.

CLEAR
One of the keys on the public terminal keyboard. Used to erase everything between the cursor and the end of a line or field while editing.

coinbox
A device attached to the public terminal that allows it to accept and return quarters under program control.

Community Memory (CM)
The system for public information exchange described in this document.

copies
messages which duplicate messages originally entered on other nodes. CM makes copies so that people on one node can see what people on another node have to say.

current scratchpad
One of the 9 scratchpads that is selected for use in scratchpad operations.

cursor
A lighted box that covers a single character. Indicates the current position in a text when editing.

DELETE
One of the keys on the public terminal keyboard. Used to delete the character under the cursor while editing.

dialog box
A rectangular area on the screen that overlays the list of messages being displayed and in which some specific interaction between the user and CM takes place.

forum descriptions
messages in the "Forums" forum. Each such message describes one of the forums on a CM node.

forums A collection of messages on a particular node.

HELP
One of the keys on the public terminal keyboard. Used to request more information about what to do in the current situation.

highlight
A lighted box covering more than one character. Indicates the button to be executed if the SELECT key is pressed.

host The user who created a forum and is responsible for managing it.

index words
words assigned to a message to classify what it is about.

INSERT
One of the keys on the public terminal keyboard. Used when editing to insert space into a piece of text.

keyboard
part of the public terminal which contains keys that the user can press.

keys switches which make up the keyboard.

MENU
One of the keys on the public terminal keyboard. Used to display a dialog box containing commonly-used buttons.

messages
A piece of text entered by a user to express a thought, idea, reaction, or item of information. CM is a system for the storage, organization, and retrieval of such messages.

node
The computer which holds messages for a set of directly-connected public terminals. Nodes can be connected together to exchange data. This term is also sometimes used to mean the node computer and its public terminals together.

opening message
The initial help message displayed when a CM session starts. The tag of the opening message is #aaaaa.

originals
Messages entered through this node's public terminals. These are distinguished from copies, which are messages obtained from other nodes.

pen names
Names which users make up to identify themselves as authors of messages.

printer
An optional device in the public terminal which can make a paper copy of a message.

programmable function keys
keys on the public terminal whose function can be changed by the user.

public terminals
The devices which allow users to enter and examine messages on CM.

reformat
Rearrange typed lines into paragraphs which occupy as few lines as possible.

response
A message entered to express a reaction to another message.

response numbers
Numbers displayed to the left of responses to show their interrelationship.

RETURN
One of the keys on the public terminal keyboard. Used to indicate that you are finished editing a single-line text, or to insert a paragraph divider into a multi-line text.

scratchpads
9 numbered ares for holding text during a session.

screen Part of the public terminal on which messages are displayed.

SELECT
One of the keys on the public terminal keyboard. Used to initiate the activity associated with the highlighted button.

selecting a button
pressing the SELECT key while a button is highlighted.

session
A single interval of interaction between a user and a public terminal.

SYSOP A pen name reserved for use by the operators of a node.

tag
A five-letter code assigned to a message that is used to identify that message within the node.

teaser
An activity performed by a public terminal between sessions to attract the attention of potential users.

trigger words
The index words on a forum description message. These words are used to find the forums that a message might belong in.

typewriter keys
The keys on the public terminal keyboard that produce typewritten text when pressed.

UNDO
One of the keys on the public terminal keyboard. It is used to undo erroneous changes to the browse list and to back out of dialog boxes.

user A person who uses CM.

version 4
The version of CM designed to run on intelligent terminals. Version 1 is the original 1972 version. Version 2 is the version demonstrated at the 1983 Computer Faire. Version 3 is the version installed in Berkeley in 1984 using Soroc terminals and running under UNIX.

4.3 Button Definition Language

(to be provided)

Community Memory User's Manual

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CM User's Manual

Carl Farrington

The Community Memory Project

The proposed Community Memory user interface is described in the form of a user's manual for the hypothetical system. All important features, terminology, and concepts are included.

1. Introduction

This document contains all the information needed to use *version 4* of *Community Memory (CM)*. It contains both introductory material and advanced procedures.

Other documents describe system administration and software internals.

The first section of this document introduces basic concepts and terminology. The second section explains how to get started using CM. The third section contains more advanced techniques. The fourth section contains reference information.

Terms with a technical meaning in the scope of this document are presented in italics (underlined on impact printers) the first time they are used. These words and phrases are defined in a glossary in the fourth section of this document.

1.1 What is Community Memory?

CM is a system for the unmediated sharing of information for use by the general public. Anyone can become a *user* of CM. As a user, you can put *messages* into CM, or look at messages put into CM by others. A message is a short piece of text containing someone's ideas or observations on a particular subject.

Putting a message into CM is called *adding* the message. You can add a message that stands on its own, or as a *response* to another message. The user who adds a message to CM is called the message's *author*.

Users add and read messages through *public terminals*. The main focus of this document is how to use the public terminals.

A local Community Memory system consists of several public terminals and a single central computer called a *node*. The node stores all of the messages added through any of the public terminals. This means that a message added through one public terminal is available for reading on all other public terminals attached to that node.

A full implementation of CM consists of many nodes which exchange data with one another. The messages stored on a node may be *originals*, which are added through local public terminals, or *copies*, which are received from other nodes. Users may only read messages stored on the node to which their public terminal is attached, but these may include copies of messages originating anywhere in the network.

network.

1.2 The Public Terminals

A public terminal consists of a *keyboard*, *screen*, *coinbox*, and optional *printer*.

You use the keyboard to cause CM to do things for you. You do this by pressing one or more *keys* on the keyboard. The keyboard contains a standard set of *typewriter keys*, including *RETURN*, for entering text, *arrow keys* for moving things displayed on the screen, and the special keys *DELETE*, *INSERT*, *BACKSPACE*, *CLEAR*, *HELP*, *SELECT*, *UNDO*, and *MENU*.

The terminal also has several *programmable function keys* which you can assign to any commonly used function.

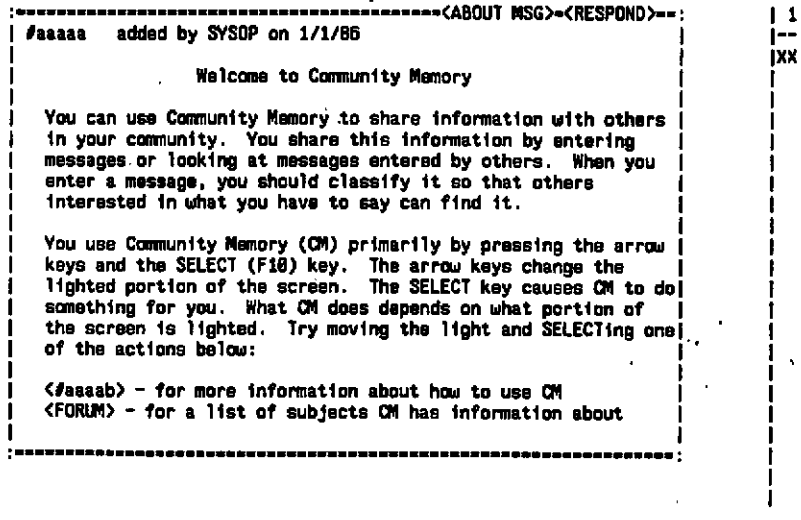
2. Basic Functions

This section describes the basics of how to use a CM public terminal.

2.1 Getting Started

If you approach a public terminal when no one is using it, you will find it displaying a *teaser*, which is a moving display designed to attract attention and induce people to try using CM. If you press any key on the keyboard, the teaser stops and your *session* with CM begins. Your session will continue until you tell CM you are through, or until 2 minutes go by without you pressing any keys. To prevent this from taking you by surprise, CM will warn you to press a key 30 seconds before it ends your session.

During your session, CM displays a list of messages called the *browse list* on the screen for you to read. When your session starts, the browse list contains only one message, called the *opening message*. When the opening message is displayed, the screen will look like this:



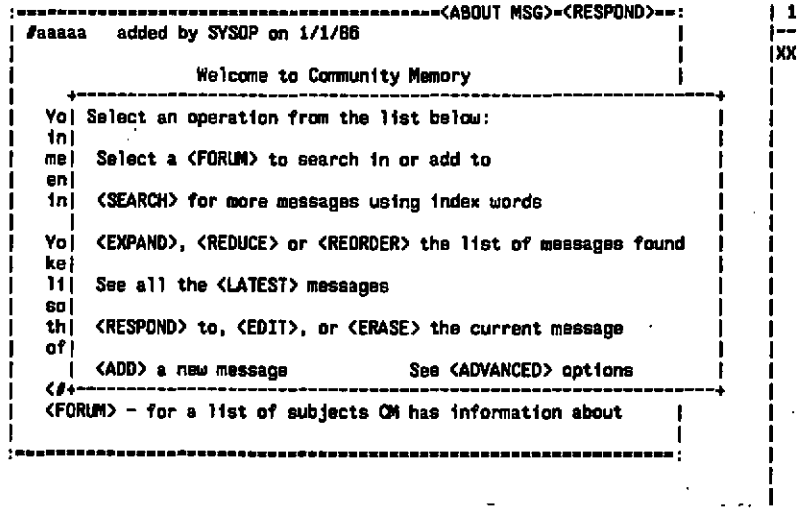
The opening message gives you the basic information you need to use CM.

The words "ABOUT MSG" in the opening message will be *highlighted*. By using the arrow keys, you can move this highlight around the screen, to any other phrase between "<" and ">" characters. These phrases that you can highlight are called *buttons*. Each button is a command to CM. If you press the SELECT key on the keyboard, CM does what the highlighted button tells it to do. This is called *selecting a button*. Note that buttons (which are on the screen) and keys (which are on the keyboard) are very different things, but are used in similar ways. PRESSING a KEY or SELECTING a BUTTON are both ways of telling CM to do something.

If you press INSERT followed by a programmable function key while a button is highlighted, that function key can then be used in place of that button.

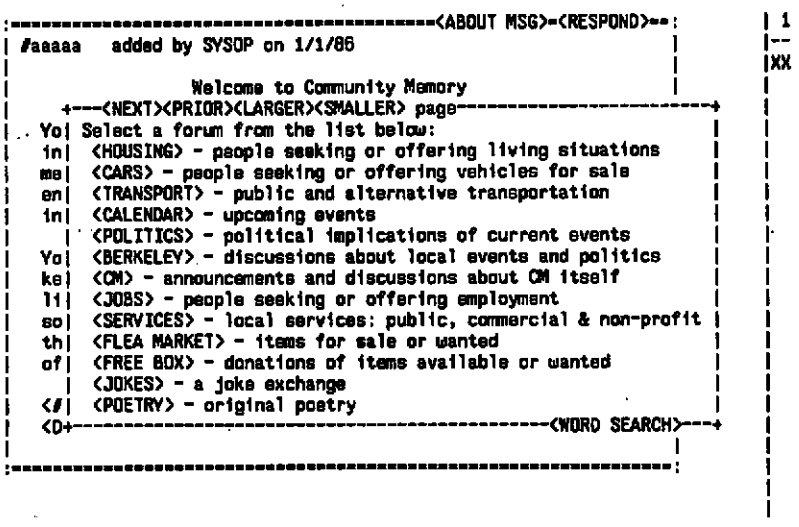
2.2 Searching for Messages

You begin searching for messages by selecting the FORUM button. If you want to search for messages and the opening message is not on the screen, you can press the MENU key. The MENU key can be used at any time to put the most important buttons onto your screen. If you pressed the MENU key while looking at the opening message, your screen would look like this:



The box drawn on your screen by the MENU key is called a *dialog box*. The FORUM button (the first button in the dialog box) will be highlighted. As before, you can move the highlight around to other buttons in the box using the arrow keys, but you can't move the highlight outside the box. Once you have a dialog box on your screen, you must do what the box tells you (in this case, "Select an operation from the list below"). If you change your mind and want to get out of a dialog box without doing what it says, press the UNDO key.

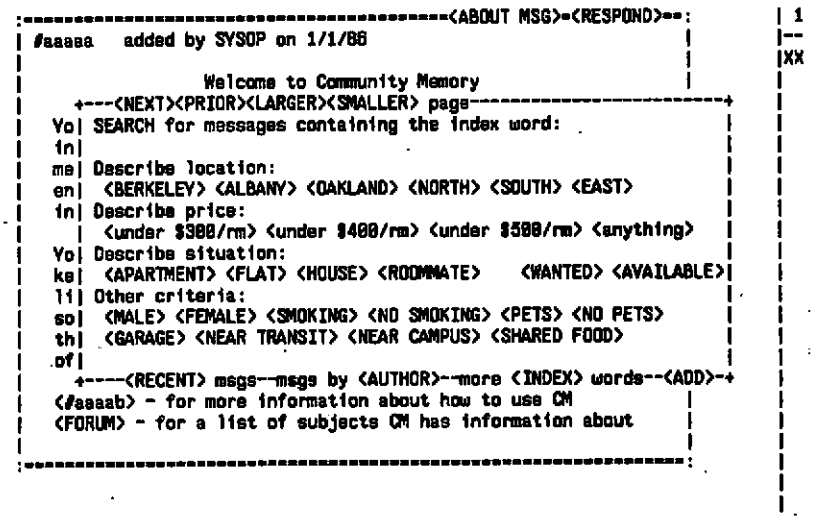
After you select the FORUM button, your screen will look like this:



This screen also contains a dialog box, this one listing all of the *forums* available on this CM node. A forum is a collection of messages on a particular subject. You begin searching for a message by choosing a forum in which to search.

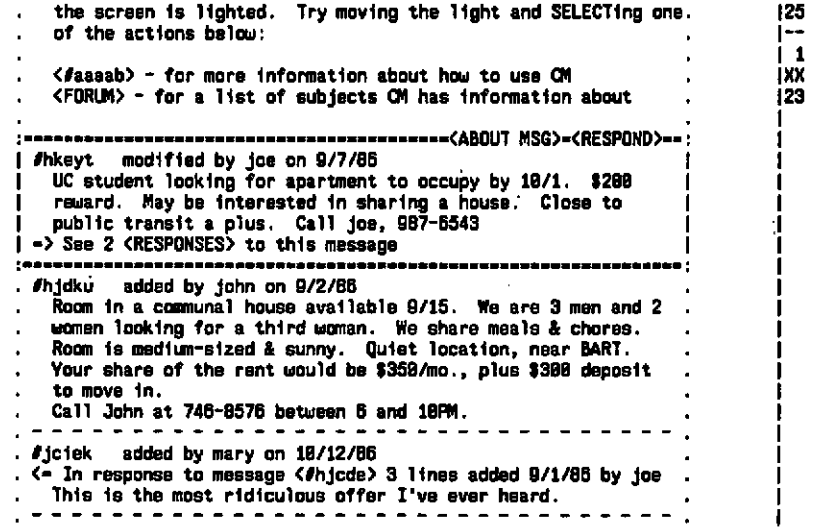
CM contains more forums than it can list on a single screen. You can move back and forth through the list of forums one screenful at a time by selecting the PRIOR and NEXT page buttons. The LARGER and SMALLER page buttons expand and shrink the dialog box itself so that each page contains more or fewer forums. The WORD SEARCH button is described in the Advanced Functions section.

After you select a forum, CM will display another dialog box in which you further describe what you are searching for. The contents of this dialog box depend on the forum you are searching in. If you had chosen HOUSING, for example, your screen would look like this:



The buttons in the box correspond to *index words* that authors may have chosen to describe their messages. Selecting one of the buttons within the dialog box will put all the messages whose authors chose that index word into your browse list. Buttons in the bottom line of the dialog box are described in the Advanced Functions section, except for the ADD button, which is described in the Adding Messages section.

After you select an index word button, your screen will look like this:



This is a display of your browse list (just like the first display) except that now it contains more than one message. The opening message is still at the top of the list, but now most of it has scrolled off the top of the screen to make room for new messages. The number in the upper right corner of the screen (25) tells you how many messages you have in your list. The 1 and 23 just below this number indicate that there is one message above the current message in the list and 23

messages below it. In the list of messages itself, the current message is indicated by the heavier border.

The highlight is always in the current message. Initially, it will be on the ABOUT MSG button. If you attempt to move the highlight up or down off of the current message, the current message changes to the previous or next message in the browse list. If the current message is not completely on the screen, CM scrolls the screen to bring it completely into view. By moving the highlight repeatedly, you can scroll through the entire list of messages.

If a message is longer than a specified maximum, only a portion of it will be displayed. In this case, when the message becomes the current message, the border around the message will include buttons for seeing other pages of the message or adjusting the amount of space the message occupies on the screen.

If you try to move the highlight off of the browse list with the right arrow, it will highlight the "XX" on the right side of the screen. While the "XX" is highlighted, the up and down arrows will quickly change the current message and scroll through the list of messages. A left arrow will return the highlight to the browse list.

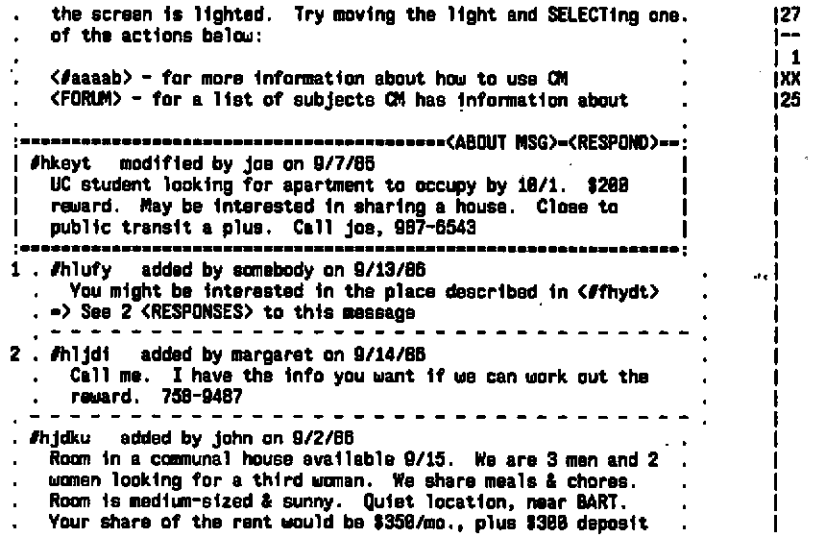
The first line of each message contains information about the message itself. The five letters following the "#" at the start of the line is a code that uniquely identifies the message. This code is called the *tag* of the message. The tag is assigned to the message automatically when the message is added to CM. If you remember the message's tag, CM will always be able to find the message for you again.

The first line of each message also contains the name of its author. These *pen names* are made up by the author when the message is entered. Pen names are protected by passwords to prevent people other than the author from using the pen name, but several users could agree to share a pen name, or a single user could have several pen names.

The first line of the message also gives the date that the message was added or the date of the most recent change to the message.

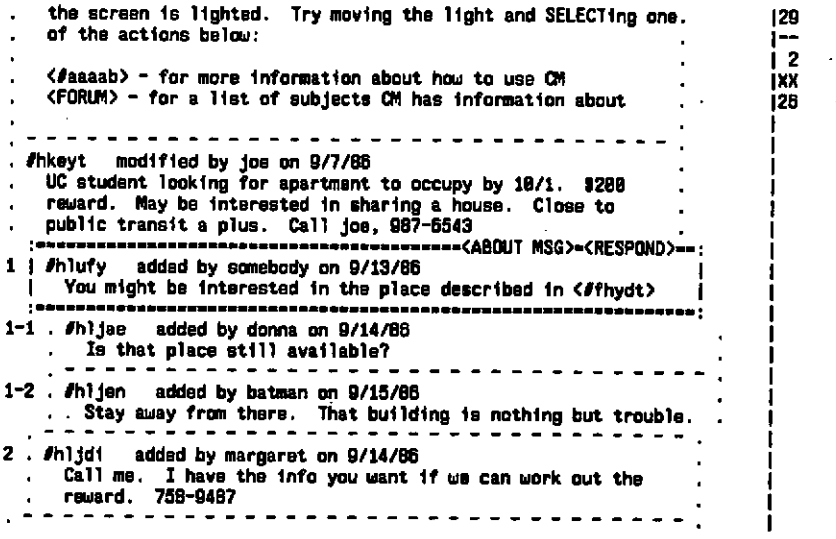
If people have written responses to messages, or if a message is itself a response, it will contain a line that tells you so. The line at the end of the current message (#hkeyt) tells you that two people have responded to that message. The line contains a button which you can select to see their responses. The second line of the bottom message on the screen (#jciek) tells you that that message is a response to another message. Selecting the button in that line will show you the message that #jciek responds to.

Responses are shown indented under the message they respond to. If you select the RESPONSES button in message #hkeyt, the screen will look like this:



Note the *response numbers* added to the left of the indented responses. Note also that the line containing the button for displaying the responses disappeared when the responses were displayed.

Responses can have responses of their own. These are displayed by further indenting. If you select the RESPONSES button in message #hlufy, the screen would look like this:



If responses are nested deeply enough, they may be indented far enough to the right to not show up completely on the screen. If this is the case, the entire screen will be shifted to the left sufficiently far to center the current message. If the screen is shifted to the left, it will be done in such a way that the response numbers will have dashes instead of digits in the leftmost column.

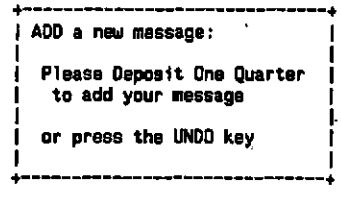
You can use the response numbers to move quickly between responses. If you try to move the highlight off the left edge of the current message (#hlufy), it will highlight the response number "1". If you then press the down arrow, the highlight will move to the response number "2" to the left of #hljdi, which then becomes the current message. Moving up and down on the response numbers always moves you to responses with the same or less indentation.

Where response numbers contain dashes, you have even more flexibility in how you can use them. If #hljae were the current message, trying to move the highlight off of the left edge of the message would highlight the second "1" in the response number "1-1". Up and down arrows at this point would move the highlight to the response numbers of adjacent messages. A left arrow would move the response number to the first "1" in the "1-1". Up and down arrows at this point would move the highlight to the response numbers "1" and "2" (the adjacent messages at the same indent as the highlight).

2.3 Adding Messages

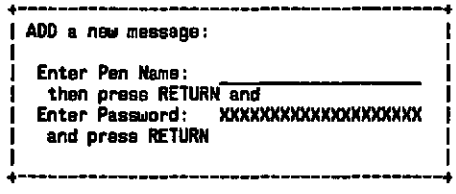
You begin adding a message by selecting the ADD button. There is an ADD button in the dialog box that CM displays when you press the MENU key.

When you select the ADD button, CM displays a dialog box asking you to deposit a quarter. At this point, you must either deposit a quarter or press the UNDO key. Pressing UNDO cancels the add and returns you to your browse list. If you deposit the quarter the add proceeds.



If you have not already used a pen name during this session, CM asks you for a pen name. If you have already used a pen name, CM allows you to enter your message at this point.

CM asks for a pen name by displaying a dialog box prompting you for a name and password.



When you enter the pen name and password and press RETURN, CM checks the pen name to see if it has been used before. If the pen name hasn't been used before, CM assumes you are trying to create a new pen name and asks you to

confirm the password you just typed.

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| That is a new pen name.  If you want to claim |
| this name as your own, re-enter your password.|
|                                               |
| or press UNDO to enter another pen name.      |
|                                               |
|  Pen Name:          King Arthur               |
|                                               |
|  Enter Password:    XXXXXXXXXXXXXXXXXX        |
|   and press RETURN                            |
|                                               |
+-----------------------------------------------+
```

If the pen name has been used before and the password doesn't match, CM presents an error message and asks you to try again:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Sorry!  That pen name and password don't match!|
|     Perhaps you mis-typed the password.       |
|                                               |
| Please try again....                          |
|                                               |
|  Enter Pen Name:  _____________               |
|   then press RETURN and                       |
|  Enter Password:    XXXXXXXXXXXXXXXXXX        |
|   and press RETURN                            |
|                                               |
+-----------------------------------------------+
```

Once CM has gotten a valid pen name, it displays an empty message for you to fill in. The empty message is placed in the browse list after the current message. The empty message then becomes the new current message. The screen will then look, for example, like this:

```
.  the screen is lighted.  Try moving the light and SELECTing one.
.  of the actions below:
.
.  <#aaaab> - for more information about how to use CM
.  <FORUM> - for a list of subjects CM has information about
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
. #hkeyt   modified by joe on 9/7/86
.  UC student looking for apartment to occupy by 10/1.  $200
.  reward.  May be interested in sharing a house.  Close to
.  public transit a plus.  Call joe, 987-6543
:==============================================<FINISHED>=<ERASE>==:
| <AUTHOR>: King Arthur                          <EXPIRES>: 12/1/86 |
|                                                                   |
:===================================================================:
. #hjdku   added by john on 9/2/86
.  Room in a communal house available 9/15.  We are 3 men and 2
.  women looking for a third woman.  We share meals & chores.
.  Room is medium-sized & sunny.  Quiet location, near BART.
.  Your share of the rent would be $350/mo., plus $300 deposit
.  to move in.
.  Call John at 746-8576 between 6 and 10PM.
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
. #jciek   added by mary on 10/12/86
. <= In response to message <#hjcde> 3 lines added 9/1/86 by joe
```

```
|26
|--
|
| 2
|XX
|23
```

The *cursor* is on the blank line of the message, allowing you to type your message

into CM. The message has not yet been assigned a tag, but has been assigned a pen name and expiration date. Selecting the AUTHOR or EXPIRES button allows you to change these values. Selecting the ERASE button will present a dialog box which looks like this:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Select an option below...                     |
|                                               |
|  <ERASE> the new message (returns your quarter) |
|  Continue <EDITING> the new message           |
|  <STORE> the message (CM keeps your quarter)  |
|                                               |
+-----------------------------------------------+
```

The FINISHED button presents a similar dialog box, with the same options in a different order:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Select an option below...                     |
|                                               |
|  <STORE> the message (CM keeps your quarter)  |
|  Continue <EDITING> the new message           |
|  <ERASE> the new message (returns your quarter) |
|                                               |
+-----------------------------------------------+
```

From either box, selecting EDITING returns you to editing the message, and selecting ERASE removes the message from CM and from the browse list, and returns your quarter.

If you select STORE, CM asks you to select index words that describe your message. CM will ask you to select these words from a dialog box that looks similar to the one you use for searching. If you are in the HOUSING forum, the dialog box might look like this:

```
+-------------------------------------------------<FINISHED>--+
| INDEX words selected (select again to remove):              |
|  <BERKELEY> <ALBANY> <$400-500/rm>                          |
|  ---------------------------------------------------------  |
| Select up to 7 more words from the list below:              |
|                                                             |
| Describe location:                                          |
|  <BERKELEY> <ALBANY> <OAKLAND> <NORTH> <SOUTH> <EAST>       |
| Describe price:                                             |
|  <under $300/rm> <$300-400/rm> <$400-500/rm> <over $500/rm> |
| Describe situation:                                         |
|  <APARTMENT> <FLAT> <HOUSE> <ROOMMATE>    <WANTED> <AVAILABLE>|
| Other criteria:                                             |
|  <MALE> <FEMALE> <SMOKING> <NO SMOKING> <PETS> <NO PETS>    |
|  <GARAGE> <NEAR TRANSIT> <NEAR CAMPUS> <SHARED FOOD>        |
+-----------------------------more <INDEX> words--------------+
```

You should select index words from the box that describe your message, up to the maximum number allowed. As you select a button, it is copied to the top part of the box. The top of the box is your record of the index words you have selected. Selecting an already selected word causes it to be un-selected and to disappear from the top part of the dialog box. When you have selected the best words for

describing your message, select the FINISHED button.

The INDEX button at the bottom of the box is explained in the Advanced Functions section.

When you select FINISHED, CM examines the index words you have chosen to see if your message might belong in any forum other than the one you are currently working in. If you have used index words that are associated with any other forums, CM presents you with a list of those forums and allows you to include your message in them as well. The list appears in a dialog box that looks like this:

```
+---<NEXT><PRIOR><LARGER><SMALLER> page-------------<FINISHED>--+
| Forums selected (select again to remove):                      |
|  <HOUSING>                                                     |
|  ------------------------------------------------------------  |
| Select any other forums you want your message included in:     |
|                                                                |
|  <HOUSING> - people seeking or offering living situations      |
|  <CALENDAR> - upcoming events                                  |
|  <BERKELEY> - discussions about local events and politics      |
|  <JOBS> - people seeking or offering employment                |
|  <SERVICES> - local services; public, commercial & non-profit  |
|  <FLEA MARKET> - items for sale or wanted                      |
|  <FREE BOX> - donations of items available or wanted           |
|                                                                |
+-------------------------------<WORD SEARCH>--<ENTER NAME>--+
```

Select buttons for any relevant forums, and then select FINISHED. As with index words, you can undo mistakes by selecting them again. The WORD SEARCH and ENTER NAME buttons are described in the Advanced Functions section.

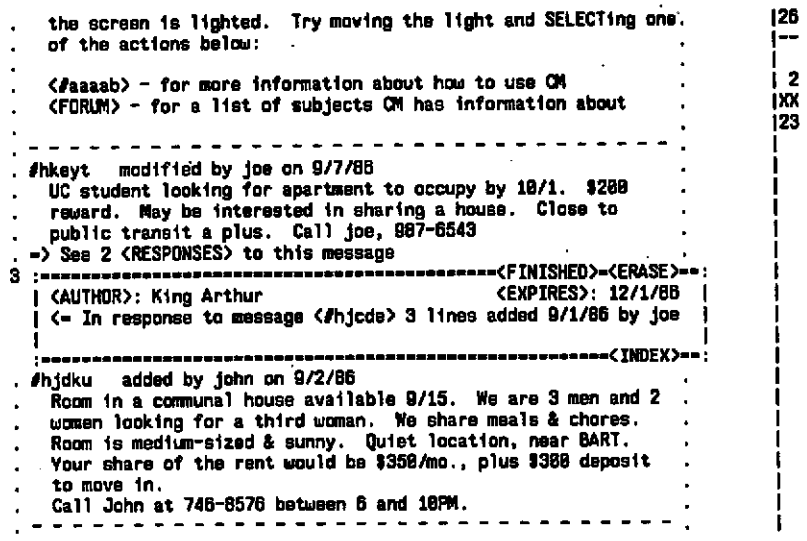
After you have selected index words and forums for your message, it will be assigned a tag and displayed in the browse list like any other message:

```
.  the screen is lighted.  Try moving the light and SELECTing one.      |26
.  of the actions below:                                               |--
.                                                                      |
.  <#aaaab> - for more information about how to use CM                 | 2
.  <FORUM> - for a list of subjects CM has information about           |XX
.                                                                      |23
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
. #hkeyt   modified by joe on 9/7/86                                   |
.  UC student looking for apartment to occupy by 10/1.  $200          |
.  reward.  May be interested in sharing a house.  Close to           |
.  public transit a plus.  Call joe, 987-6543                         |
:=========================================<ABOUT MSG>=<RESPOND>==:     |
| #jguhf   added by King Arthur on 11/1/86                       |     |
|  Student looking for 1-bedroom apartment.  Can pay up to $450  |     |
|  for the right place.  Must be large, sunny, in a safe         |     |
|  location and convenient to grocery shopping (walking         |     |
|  distance).  Call 549-8888 weekdays                            |     |
:================================================================:     |
. #hjdku   added by john on 9/2/86                                     |
.  Room in a communal house available 9/15.  We are 3 men and 2       |
.  women looking for a third woman.  We share meals & chores.         |
.  Room is medium-sized & sunny.  Quiet location, near BART.          |
.  Your share of the rent would be $350/mo., plus $300 deposit       |
.  to move in.                                                        |
.  Call John at 748-8576 between 6 and 10PM.                         |
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
. #jciek   added by mary on 10/12/86                                   |
.  <= In response to message <#hjcde> 3 lines added 9/1/86 by joe     |
```

2.4 Responding to Messages

Responding to messages is very similar to adding a new message. You can only respond to a message when it is your current message. You begin by selecting the RESPOND button in the border of the message. CM will ask for a quarter and, if necessary, a pen name, just as it does when you are adding.

When CM displays the empty message for you to fill in, it will be indented immediately beneath the message you are responding to, and will contain the appropriate response number. It will also contain a line indicating that it is a response:



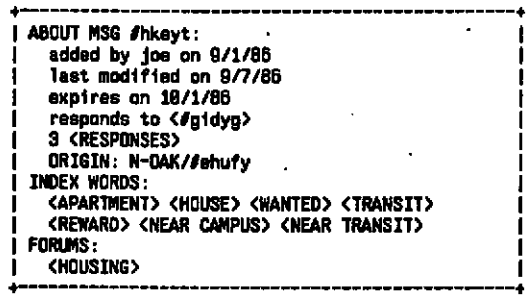
When you select the ERASE or FINISHED buttons, CM displays a dialog box as before, but selecting the STORE option stores the message immediately without adding index words. To add index words, you must select the INDEX button in the message border. The INDEX button takes you through the index word assignment like STORE did when you were adding.

3. Advanced Functions

The following functions allow you to make more effective use of CM. They allow you to keep information that you have entered up to date, find information more easily, and collect together information that you have found for others to use.

3.1 The ABOUT MSG button

The border of the current message always contains an ABOUT MSG button (unless you are editing the message). Selecting the ABOUT MSG button provides you with more information about where the message came from and how it is classified than is available in the first line of the message. Selecting the ABOUT MSG button displays a dialog box that looks like this:



The date added, the expiration date, the index words, and the forums are always present. The last modified date is present if the message has been changed since it was entered.

If a message is a response or has responses, the appropriate lines will be present. Selecting the buttons on these lines will have the same effect as selecting the corresponding lines in the message itself, except that these lines will always be available; they do not disappear once the related messages are displayed.

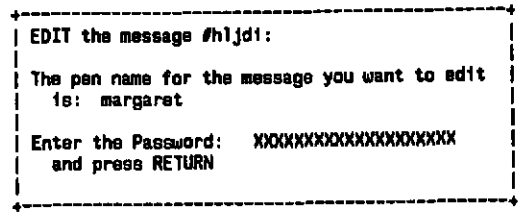
The ORIGIN line is present only if the message is a copy of a message from another node. This line gives the node on which the message was entered and the tag assigned to the message on that node.

3.2 Editing and Erasing Messages

If you are the author of a message, you can edit or erase that message. You first make the message to be worked on the current message. Then press the MENU key and select the EDIT or ERASE button from the menu displayed. Further details are given below.

Messages can only be edited or erased on the same node they were originally entered on. If the ABOUT MSG box contains an ORIGIN line, the message was entered on another node and cannot be edited or erased. The reason for this is that your pen name and password are only known by the node you first used them on. Thus you have no way of proving to any other node who you are. In fact, two different users on two different nodes could use the same pen name without conflict (eg. you could have a "nancy" in Berkeley and another "nancy" in Albany).

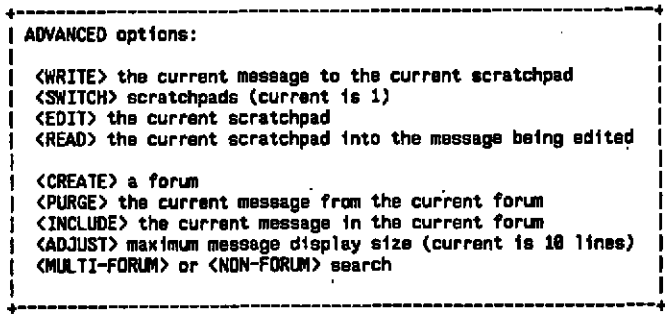
3.2.1 Editing a Message When you ask to edit a message, CM checks to see if the last pen name you used matches the one on the message. If the pen names don't match, or you haven't yet used a pen name in this session, CM presents a dialog box asking you for the password.



When password has been validated, CM will ask you for a quarter unless you have added or edited this message already during this session. Then the message is displayed as it was when you added it (AUTHOR and EXPIRES are buttons). The border contains FINISHED, ERASE, and INDEX buttons that behave as when you add a response.

3.2.2 Scratchpads CM provides nine areas called *scratchpads* for storing text. One important use of these scratchpads is for moving text while adding or editing messages. These scratchpads are numbered 1 through 9. One of them is always selected as the *current scratchpad*. The current scratchpad is initially 1.

To use the scratchpads, press the MENU key and select the ADVANCED button. CM will display a dialog box containing a menu of advanced options:



The WRITE button writes the text of the current message into the current scratchpad. The SWITCH button causes CM to prompt you for a new current scratchpad number (note that it also displays the old number). The EDIT button displays a dialog box showing the contents of the current scratchpad and allowing you to edit it. The border of the dialog box contains a FINISHED button which returns you to your browse list.

The READ button only appears if you are adding or editing a message. Selecting this button reads the content of the current scratchpad into your message.

As an example of how to use the scratchpads, assume you wanted to move a block of text in a message you were editing. First, you would select WRITE to save the message in the scratchpad. Then delete the block of text from its old position. Select EDIT to see the copy of the message in the scratchpad, and delete everything but the block you wish to move. Select FINISHED to return to editing the message. Finally, move the cursor to the place you want to insert the block

and select READ.

You can use similar techniques to move text from one message to another. You can copy text out of any message, not just the ones you can edit.

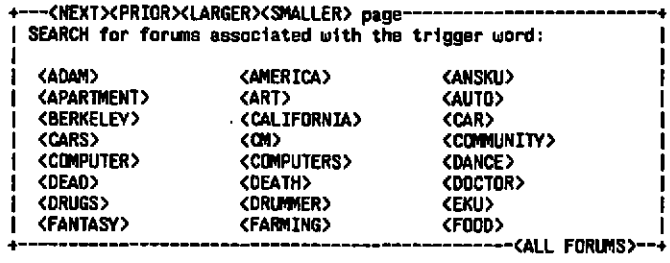
3.2.3 Erasing a Message When you select the ERASE button, CM presents a dialog box asking you to confirm the operation. As in editing, you will be prompted for a password if you have not been using the matching pen name. After completing both of these checks, CM erases the message from the database.

3.3 Putting Buttons in Messages

You can type buttons into the text of a message by enclosing a string of characters between "<" and ">" characters. What the button does depends on the enclosed character string. See the Button Definition Language section in the Appendices for more information.

3.4 Searching for Forums

When CM presents a list of forum names to pick from, the border of the dialog box will contain a WORD SEARCH button. If you select this button, CM replaces the list of forum names with a list of index words associated with forums (called *trigger words*).



Trigger words are listed in alphabetical order. When you select a trigger word, CM replaces the trigger word list with a list of the forums associated with that trigger word. You can then select a forum from this shorter, more relevant list.

If the reduced list is not to your liking, you may select WORD SEARCH again to come up with a different list. If you want to return to the full list, select the ALL FORUMS button in the border of the dialog box containing the trigger word list.

The border of the dialog box containing the forum list also contains an ENTER NAME button. Selecting this button enables you to type in the name of the forum you want without having to find it in the list.

3.5 Working with the Browse List

The Basic Functions section of this manual describes one way to get messages from a particular forum with a particular index word into your browse list. You invoke this function with the FORUM button.

There are many more sophisticated ways to use your browse list. As you bring messages into your browse list by index word, some will be relevant to you and others will be irrelevant. You can use browse list functions to collect all possibly relevant messages, and then to find and eliminate most irrelevant ones. Once you have a reasonable number of messages, you can include and exclude messages individually, or move messages around in the list.

When using these functions, it is helpful to think of the browse list as divided into two parts. The messages above the current message should be thought of as the messages you have decided are worth looking at further. The current message and those below it should be thought of as the messages that still need to be sorted out. When searching, you add batches of raw messages to the list, weed out irrelevant ones, and move the current message down to include the filtered messages in the top part of the list.

3.5.1 EXPANDing the Browse List The Basic Functions section of this manual describes how to use the FORUM button to select a forum and search within it by index word. If you want to search using another index word in the same forum, you can do this by selecting the SEARCH button in the dialog box displayed by the MENU key.

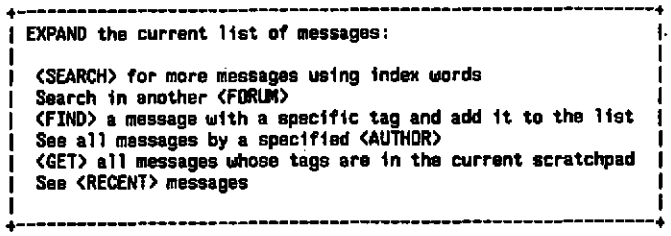
The SEARCH button displays the dialog box containing the important index words for the forum. Selecting an index word includes matching messages in your browse list after the current message. The bottom line of this dialog box contains additional special buttons. RECENT and AUTHOR are explained below. ADD was explained in the Basic Functions section.

The INDEX button displays a list of all the index words used in the forum in alphabetical order. Selecting an index word from this list has the same effect as selecting one from the SEARCH dialog box.

```
+---<NEXT><PRIOR><LARGER><SMALLER> page-------------------------+
| SEARCH for messages containing the index word:                |
|                                                               |
| <ADAM>          <AMERICA>       <ANSKU>                       |
| <APARTMENT>     <ART>           <AUTO>                        |
| <BERKELEY>      <CALIFORNIA>    <CAR>                         |
| <CARS>          <CM>            <COMMUNITY>                   |
| <COMPUTER>      <COMPUTERS>     <DANCE>                       |
| <DEAD>          <DEATH>         <DOCTOR>                      |
| <DRUGS>         <DRUMMER>       <EKU>                         |
| <FANTASY>       <FARMING>       <FOOD>                        |
+-----------------------------------------------<INDEX HELP>---+
```

The INDEX HELP button returns you to the original SEARCH dialog box containing the suggested index words for the forum.

Further options for getting more messages into your browse list are available by selecting the EXPAND button in the dialog box displayed by the MENU key. This button displays a menu of all the different ways to add more messages to the browse list.



The SEARCH and FORUM buttons have already been described; they appear again on this menu for convenience. FIND displays a dialog box which prompts you for a tag, and then includes the message with this tag in your browse list after the current message. AUTHOR displays a dialog box which prompts you for a pen name, and then includes all messages by this author in your browse list after the current message. GET scans the current scratchpad for buttons containing tags and includes messages with these tags in your browse list after the current message.

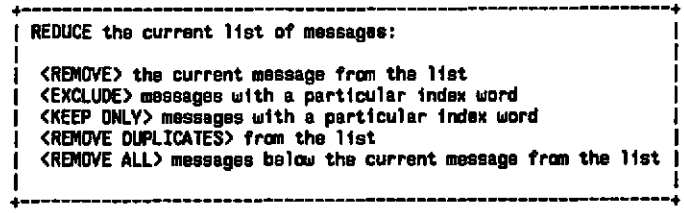
RECENT places all the messages in the current forum (or all the messages in the node, if no forum is currently selected) at the end of your browse list. Each time you select RECENT, it replaces messages from the last time you selected RECENT, but messages will only be replaced if they are after the current message and after the positionally last change that you made to your browse list. For example, if you selected RECENT, scanned through the first ten messages displayed, and then used FIND to insert a message in the eleventh position, another RECENT would replace the messages starting with twelve.

3.5.2 Multi-forum and Non-forum Searches If you want to search several forums simultaneously, or the entire database, you can do so by using buttons on the ADVANCED menu.

The NON-FORUM button de-selects your current forum, so that you are in the same state as when you started your session (i.e. without a current forum). Now any searches done before selecting another forum will search the entire database. This button then displays a list of all the index words as if you had selected the SEARCH button.

The MULTI-FORUM button displays a dialog box for selecting several forums. This dialog box looks like the one for choosing forums while adding a message. The forums already selected are displayed in the top portion of the box. After you have selected as many forums as you like, select the FINISHED button. CM then displays a list of all the index words as if you had selected the SEARCH button. Searches will find messages in any of the selected forums. Multi-forum searches with a lot of forums may be somewhat slower than other searches.

3.5.3 REDUCEing the Browse List Selecting the REDUCE button from the dialog box displayed by the MENU key gives you a list of options for removing unwanted messages from your browse list.



Selecting the REMOVE button removes the current message from the list. This is useful for individually eliminating messages you don't want to see again after you have narrowed down the browse list with other buttons. If the current message has comments, CM asks you if you want to remove all the comments as well. If you opt to keep the comments, they will be moved to the left margin and treated as independent messages. The "In response to" lines will re-appear in each of the comments.

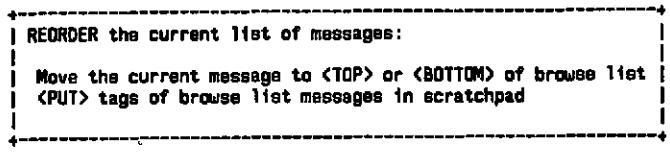
Selecting the EXCLUDE button presents an index word list like the one presented by SEARCH (except that the first line says "EXCLUDE messages containing the index word:"). Selecting an index word from this list removes all messages in the current forum containing that index word. Only messages at or below the current message are removed.

Selecting the KEEP ONLY button presents an index word list like the one presented by SEARCH (except that the first line says "KEEP ONLY messages containing the index word:"). Selecting an index word from this list removes all messages in the current forum but NOT containing that index word. Only messages at or below the current message are removed.

Selecting the REMOVE DUPLICATES button removes all messages below the current message which appear in the browse list in some earlier position as well.

Selecting the REMOVE ALL button removes all messages below the current message. CM will ask for confirmation before removing them.

3.5.4 REORDERing the Browse List Selecting the REORDER button from the dialog box displayed by the MENU key gives you a list of options for reordering the messages on your browse list.



The TOP and BOTTOM buttons move the current message to the top or bottom of the list. Usually, you would use TOP to save a message for later, and BOTTOM to put off deciding whether a message is relevant or not. (If you decide that a message is irrelevant, you would use REMOVE.) You cannot move a message to the bottom of the list if the bottom of the list is displaying RECENT messages.

The PUT button writes the tags of all messages in the browse list (except RECENT messages) into the current scratchpad in the form of buttons. By editing the scratchpad, you can change this list, and then read it back into the browse list with the GET button (see EXPANDing the Browse List). You may want to use the REMOVE ALL button before the GET button to avoid duplicating messages.

3.6 Special Forums

Messages and forums vary from one CM node to another, depending on the information needs of the users. However, some forums, messages, and pen names exist in every node.

The "Authors" forum contains a message for each pen name being used in the node. These messages are called *author descriptions*. One author description that will exist on every node is for the pen name *SYSOP*, which is reserved for the operators of the node.

The "Forums" forum contains a message for each forum in the node. These messages are called *forum descriptions*. Every node will contain forum descriptions for the forums "Forums", "Authors", and "Help". Additional forum descriptions are added when new forums are created (see below).

The "Help" forum contains messages explaining various procedures and conventions used in the node. "Help" will contain messages defining the special index word menus for each forum, the opening message displayed at the beginning of a session, and other help messages displayed by tags in the opening message. The opening message will always have the tag #aaaaa and will be authored by SYSOP.

3.6.1 Author Descriptions Author descriptions are added automatically to the Authors forum when a user first uses a pen name. Users may edit their author descriptions to change their passwords or to provide descriptive information about themselves. Author descriptions are easy to find, since they are always the oldest (last) message displayed by an AUTHOR search. An author description being edited appears as follows:

```
:=============================================<FINISHED>=<ERASE>==:
| #jguhe   added by King Arthur on 11/1/86                       |
|   I could describe myself here if I wanted to.                 |
:=============================================<PASSWORD>=<INDEX>==:
```

Note that there are no AUTHOR or EXPIRES buttons. This is because the AUTHOR cannot be changed and the message has no expiration date. The PASSWORD button allows you to change your password. The INDEX button allows you to assign index words to your author description (classifying yourself so that others can find you).

The text of the message is available for you to describe yourself and your interests, and possibly to leave contact information.

The ERASE button will only allow you to erase your author description if there are no other messages by you left in the node.

3.7 User-created Forums

You can create and manage your own forums to hold information on a topic of importance to you. The person creating a forum is called its *host*. A forum is operated as a public service to all CM users. A forum is a tool for helping the user community to organize its information.

3.7.1 Creating a Forum You create a forum by selecting the CREATE button from the ADVANCED function menu. CM presents a dialog box asking for the new forum name. If you respond with a valid (not previously used) name, CM creates a forum description message for you to edit. The forum description originally appears as follows:

```
:-------------------------------------------<FINISHED>-<ERASE>--:
| <AUTHOR>: mary                                                 |
| Forum Name: HOUSING                                            |
| <DESCRIPTION>:                                                 |
|                                                                |
| <DEFAULT EXPIRATION>: 30 days                                  |
| <CHANGES TO>:                                                  |
| <CHANGES FROM>:                                                |
:-------------------------------------------------------<INDEX>--:
```

If you select the ERASE button, CM returns to browsing without creating the forum.

The DESCRIPTION line is used to describe the forum in various lists. Selecting this button allows you to enter a description. The DEFAULT EXPIRATION line is used to calculate a default expiration date for messages added to this forum. Selecting this button allows you to change the value.

The CHANGES TO and CHANGES FROM lists specify forums on other nodes to exchange messages with. Selecting these buttons allows you to enter information into these lists. These lists are described further in the Networking section.

The body of the message is available for more detailed comments and notes about the forum.

The INDEX button allows you to assign index words to the forum description message. These index words can be used to find the message by searching in the "Forums" forum. They also serve as trigger words for the forum. You should use any words that might be used on messages that you want in your forum.

When you have finished editing the forum description, select FINISHED. CM will present you with a blank index word help message to edit. The index word help message is an empty message into which you type what you want to appear in the dialog box when users of this forum need to pick index words. For example, the index word help message to generate the dialog boxes used in the examples earlier in this document would appear as follows:

```
:=========================================<FINISHED>=<ERASE>==:
| #chuje   added by mary on 1/15/86                            |
|   Describe location:                                         |
|    <BERKELEY> <ALBANY> <OAKLAND> <NORTH> <SOUTH> <EAST>      |
|   Describe price:                                            |
|    <under $300/rm> <$300-400/rm> <$400-500/rm> <over $500/rm>|
|   Describe situation:                                        |
|    <APARTMENT> <FLAT> <HOUSE> <ROOMMATE>    <WANTED> <AVAILABLE>|
|   Other criteria:                                            |
|    <MALE> <FEMALE> <SMOKING> <NO SMOKING> <PETS> <NO PETS>   |
|    <GARAGE> <NEAR TRANSIT> <NEAR CAMPUS> <SHARED FOOD>       |
:==============================================================:
```

When you select the FINISHED button, the creation of the forum is complete. The host of a forum can edit a forum description or index menu, in the same way as editing any other message. When being edited, a forum description appears as follows:

```
:=========================================<FINISHED>=<ERASE>==:
| #chujd   added by mary on 1/15/86                            |
| <AUTHOR>: mary                                               |
| Forum Name: HOUSING                                          |
| <DESCRIPTION>: people seeking or offering living situations  |
| Index Word Help: <#chuje>        Purged Messages: <#chujf>   |
|   This forum is oriented toward making connections between   |
|   people looking for housing and those looking for roommates |
|   or tenants.  Users of the forum are encouraged to exchange |
|   information and opinions as responses, but messages using the|
|   index words on the help message should essentially be housing|
|   ads.  I'll try to keep old listings and nonsense out of the|
|   forum.                                                     |
| <DEFAULT EXPIRATION>: 30 days                                |
| <CHANGES TO>:                                                |
| <CHANGES FROM>:                                              |
| Work Areas: <#chujg>                                         |
:==============================================================:
```

The forum name and the message tags cannot be changed. The "Index Word Help" tag refers to the message defining the index word help dialog box.

The "Purged Messages" and "Work Areas" tags refer to messages that are maintained by CM itself. These messages cannot be edited by any user. "Purged Messages" contains tags of messages explicitly removed from the forum by the host. "Work Areas" contain information used by CM to locate messages in forums more rapidly.

3.7.2 Managing a Forum Management of a forum consists of maintaining the list of trigger words and the forum description, and purging and including messages in the forum.

The trigger words and the forum description are what attract other users to your forum. By making them as complete and descriptive as possible, you will reach the largest possible audience while not interfering with those who aren't interested in the subject of the forum.

You can include any message you want into your forum by making that message the current message and selecting INCLUDE on the ADVANCED options menu. This is normally how you would pre-load a forum with information when you first create it.

On an ongoing basis, it is better to have users submit their messages to forums themselves, so that you don't have to hunt up all the relevant information. Your forum name will be presented to users who put any of your trigger words among their message's index words. They may then submit their message to your forum.

You may disagree with a user's choice of your forum. If you feel their message is sufficiently out of place, you may purge it from your forum. You do this by making that message the current message and selecting PURGE on the ADVANCED options menu. Purging a message removes it from your forum but does not erase it from the node. It will remain in any other forums, and can also be found via its tag or a non-forum search.

Messages purged by you will be recorded in the "Purged Messages" message associated with your forum. This prevents the author of the message from re-submitting it to your forum, and also allows other users to see what you have purged. This gives other users a practical record of your editorial decisions.

3.7.3 Networking If you own forums on two or more CM nodes, or want to cooperate with forum hosts on other nodes, you can connect forums together. Each forum to be connected must list the other forum names and node names in the CHANGES FROM and CHANGES TO lines of the forum descriptions. The CHANGES TO line lists those forums that are notified when messages are added, edited, or erased in the local forum. The CHANGES FROM line lists those forums from which such changes are copied into the local forum.

4. Appendices

4.1 Keyboard Details

This section explains the function of the keyboard in detail.

4.1.1 Arrow Keys What happens when you press an arrow key depends on whether you are editing text or not. When you are not editing text, the arrows move a highlight around between buttons. When you are editing text, they move a cursor through the text you are editing. A further distinction depends on whether you are editing a single line (as when you are typing an author name), or you are editing a message or scratchpad text, which can be several lines long.

4.1.1.1 Moving the Highlight When moving a highlight, the left and right arrows move the highlight left and right between buttons on the same line. Up and down arrows move to the next line above or below that contains buttons, and to the closest button on that line.

If the highlight is in a dialog box, arrow keys will not cause the highlight to cross the borders of the box. Instead, the highlight will wrap to the opposite side of the box.

If the highlight is on the browse list and on the first button on the line, the left arrow moves you to the response number (or does nothing if the current message has no response number). If you are on the last button on the line, the right

arrow moves you to the scroll bar. When the highlight is on the response numbers or scroll bar, the arrow keys can be used to move quickly through the browse list as described in the section on searching for messages.

If the highlight is on the browse list and up or down arrows cause the highlight to move to another message, the message moved to becomes the current message. If this message is not completely on the screen, the screen is scrolled (both vertically and horizontally) to display the entire message, up to the maximum allowable size for a message display.

4.1.1.2 Arrow Keys During Editing When editing, the arrows move the cursor up, down, left, and right within the editing area. The cursor can be moved all the way to the right margin of the editing area, even if no characters have been typed there.

Typing a left arrow at the left margin moves the cursor to the last typed character of the previous line. On the first line of the editing area, typing a left arrow at the left margin has no effect.

At the right margin, the right arrow moves to the first column of the next line. On the last line of the editing area, typing a right arrow at the right margin has no effect.

When editing a multi-line text (a message or scratchpad) any arrow key which causes the cursor to change lines also *reformats* (see below) adjacent lines.

Attempting to move the cursor out of the editing area with up or down arrows will have no effect, unless the message being edited contains buttons above or below the editing area. In that case, the cursor changes to a highlight and moves to the appropriate button.

4.1.2 Editing Keys The meanings of the editing keys also change between single-line and multi-line texts. In multi-line texts, CM attempts to fill paragraphs to keep words on as few lines as possible. Thus, changes to the edit line may affect neighboring lines.

The general rule for filling paragraphs is that if a line begins with a non-blank, and the first word on the line would fit on the end of the previous line, it is moved there. This implies that the first line of each paragraph begins with a blank (i.e. paragraphs are indented). A word is presumed to fit on a line only if there is enough room for both the word itself and a trailing blank.

During some editing operations, the filling rule may be temporarily violated, but only in the paragraph containing the cursor. Furthermore, paragraphs are always eventually brought back in conformity with this rule. The process of bringing a paragraph back into conformity with the filling rule is called reformatting the paragraph. If the character under the cursor moves during reformating, the cursor moves with it.

When editing any kind of text, the typewriter keys replace the character under the cursor with the character pressed, and move the cursor one character to the

right if it is not already in the rightmost column of the field. If the cursor is in the rightmost column and you are editing a single line, the last character is replaced and the cursor doesn't move.

Typing a character in the rightmost column of a multi-line text opens a blank line below the current line and moves the cursor on to it. In addition, if the old line contains a blank and the character typed was not a blank, the last word of the old line is wrapped down to the new line.

The INSERT key moves all characters under and right of the cursor one character to the right and inserts a blank under the cursor. The character in the rightmost column of the field is lost in single line editing. In multi-line editing, words at the right margin are wrapped down to the next line as necessary. If the next line is full, a new blank line is inserted below the current line and the word at the right margin is wrapped down to it.

The DELETE key deletes the character under the cursor and moves all characters to the right of the cursor one character to the left. The rightmost column becomes a blank.

The BACKSPACE key acts like the delete key, except it deletes the character to the left of the cursor. In the leftmost column of a multi-line edit, BACKSPACE behaves like left arrow.

The CLEAR key replaces all characters to the right of the cursor with blanks.

RETURN signals the completion of editing for single-line edits. For multi-line edits, RETURN creates a blank line after the current line, wraps all words to the right of the cursor (if any) to the new line, inserts a blank at the beginning of the new line, and puts the cursor to the right of the blank. This, in effect, inserts a paragraph boundary.

All above keys except RETURN auto repeat while being held down.

4.1.3 Other special keys The effects of the other special keys are:

HELP - Display a help dialog box. The contents of this box are derived from a message in the HELP forum. The message used depends on the context in which the HELP key is pressed (eg. pressing HELP while in a dialog box will display a help message explaining the purpose of the dialog box and what is required of the user). The message displayed may contain buttons that you can select to see additional help messages in the dialog box. The UNDO key or a FINISHED button in the border removes the dialog box from the screen.

MENU - Display a dialog box containing a menu of the main CM operations, from which you can select a button.

SELECT - Perform the operation that corresponds to the currently highlighted button.

UNDO - Undo the effects of the last change to the browse list. Multiple UNDOs will continue back in history. UNDO affects only which messages are in the browse list and which message is current. Scratchpad and message contents are unaffected. Pressing UNDO while in a dialog box will return to the previous dialog box, if any, or remove the dialog box from the screen and cancel the operation in progress.

4.2 Glossary

The following terms have special meanings in the context of Community Memory.

adding Creating a new message and storing it in CM.

arrow keys
4 keys on the public terminal keyboard labeled with arrows (up, down, left, right). Used for moving the cursor or highlight around on the screen.

author The user who adds a message to CM.

author descriptions
A message in the "Authors" forum. There is one author description for each author on CM.

BACKSPACE
One of the keys on the public terminal keyboard. Used for backing up the cursor while erasing mistakes.

browse list The list of messages currently being displayed for a user.

buttons
Areas of the public terminal screen between "<" and ">" characters. One of these buttons is always highlighted. Pressing the SELECT key while a button is highlighted causes CM to perform some action corresponding to that button.

CLEAR
One of the keys on the public terminal keyboard. Used to erase everything between the cursor and the end of a line or field while editing.

coinbox
A device attached to the public terminal that allows it to accept and return quarters under program control.

Community Memory (CM)
The system for public information exchange described in this document.

copies
Messages which duplicate messages originally entered on other nodes. CM makes copies so that people on one node can see what people on another node have to say.

current scratchpad
One of the 9 scratchpads that is selected for use in scratchpad operations.

cursor
A lighted box that covers a single character. Indicates the current position in a text when editing.

DELETE
One of the keys on the public terminal keyboard. Used to delete the character under the cursor while editing.

dialog box
A rectangular area on the screen that overlays the list of messages being displayed and in which some specific interaction between the user and CM takes place.

forum descriptions
Messages in the "Forums" forum. Each such message describes one of the forums on a CM node.

forums A collection of messages on a particular node.

HELP
One of the keys on the public terminal keyboard. Used to request more information about what to do in the current situation.

highlight
A lighted box covering more than one character. Indicates the button to be executed if the SELECT key is pressed.

host The user who created a forum and is responsible for managing it.

index words
Words assigned to a message to classify what it is about.

INSERT
One of the keys on the public terminal keyboard. Used when editing to insert space into a piece of text.

keyboard
Part of the public terminal which contains keys that the user can press.

keys Switches which make up the keyboard.

MENU
One of the keys on the public terminal keyboard. Used to display a dialog box containing commonly-used buttons.

messages
A piece of text entered by a user to express a thought, idea, reaction, or item of information. CM is a system for the storage, organization, and retrieval of such messages.

node
The computer which holds messages for a set of directly-connected public terminals. Nodes can be connected together to exchange data. This term is also sometimes used to mean the node computer and its public terminals together.

opening message
The initial help message displayed when a CM session starts. The tag of the opening message is #aaaaa.

originals
Messages entered through this node's public terminals. These are distinguished from copies, which are messages obtained from other nodes.

pen names
Names which users make up to identify themselves as authors of messages.

printer
An optional device in the public terminal which can make a paper copy of a message.

programmable function keys
Keys on the public terminal whose function can be changed by the user.

public terminals
The devices which allow users to enter and examine messages on CM.

reformat
Rearrange typed lines into paragraphs which occupy as few lines as possible.

response
A message entered to express a reaction to another message.

response numbers
Numbers displayed to the left of responses to show their interrelationship.

RETURN
One of the keys on the public terminal keyboard. Used to indicate that you are finished editing a single-line text, or to insert a paragraph divider into a multi-line text.

scratchpads
9 numbered ares for holding text during a session.

screen Part of the public terminal on which messages are displayed.

SELECT
One of the keys on the public terminal keyboard. Used to initiate the activity associated with the highlighted button.

selecting a button
Pressing the SELECT key while a button is highlighted.

session
A single interval of interaction between a user and a public terminal.

SYSOP A pen name reserved for use by the operators of a node.

tag
A five-letter code assigned to a message that is used to identify that message within the node.

teaser
An activity performed by a public terminal between sessions to attract the attention of potential users.

trigger words
The index words on a forum description message. These words are used to find the forums that a message might belong in.

typewriter keys
The keys on the public terminal keyboard that produce typewritten text when pressed.

UNDO
One of the keys on the public terminal keyboard. It is used to undo erroneous changes to the browse list and to back out of dialog boxes.

user A person who uses CM.

version 4
The version of CM designed to run on intelligent terminals. Version 1 is the original 1972 version. Version 2 is the version demonstrated at the 1983 Computer Faire. Version 3 is the version installed in Berkeley in 1984 using Soroc terminals and running under UNIX.

4.3 Button Definition Language

(to be provided)

COMMUNITY MEMORY USER'S MANUAL

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CM User's Manual

Carl Farrington

The Community Memory Project

The proposed Community Memory user interface is described in the form of a user's manual for the hypothetical system. All important features, terminology, and concepts are included.

1. Introduction

This document contains all the information needed to use *version 4* of *Community Memory (CM)*. It contains both introductory material and advanced procedures.

Other documents describe system administration and software internals.

The first section of this document introduces basic concepts and terminology. The second section explains how to get started using CM. The third section contains more advanced techniques. The fourth section contains reference information.

Terms with a technical meaning in the scope of this document are presented in italics (underlined on impact printers) the first time they are used. These words and phrases are defined in a glossary in the fourth section of this document.

1.1 What is Community Memory?

CM is a system for the unmediated sharing of information for use by the general public. Anyone can become a *user* of CM. As a user, you can put *messages* into CM, or look at messages put into CM by others. A message is a short piece of text containing someone's ideas or observations on a particular subject.

Putting a message into CM is called *adding* the message. You can add a message that stands on its own, or as a *response* to another message. The user who adds a message to CM is called the message's *author*.

Users add and read messages through *public terminals*. The main focus of this document is how to use the public terminals.

A local Community Memory system consists of several public terminals and a single central computer called a *node*. The node stores all of the messages added through any of the public terminals. This means that a message added through one public terminal is available for reading on all other public terminals attached to that node.

A full implementation of CM consists of many nodes which exchange data with one another. The messages stored on a node may be *originals*, which are added through local public terminals, or *copies*, which are received from other nodes. Users may only read messages stored on the node to which their public terminal is attached, but these may include copies of messages originating anywhere in the network.

1.2 The Public Terminals

A public terminal consists of a *keyboard*, *screen*, *coinbox*, and optional *printer*.

You use the keyboard to cause CM to do things for you. You do this by pressing one or more *keys* on the keyboard. The keyboard contains a standard set of *typewriter keys*, including *RETURN*, for entering text, *arrow keys* for moving things displayed on the screen, and the special keys *DELETE*, *INSERT*, *BACKSPACE*, *CLEAR*, *HELP*, *SELECT*, *UNDO*, and *MENU*.

The terminal also has several *programmable function keys* which you can assign to any commonly used function.

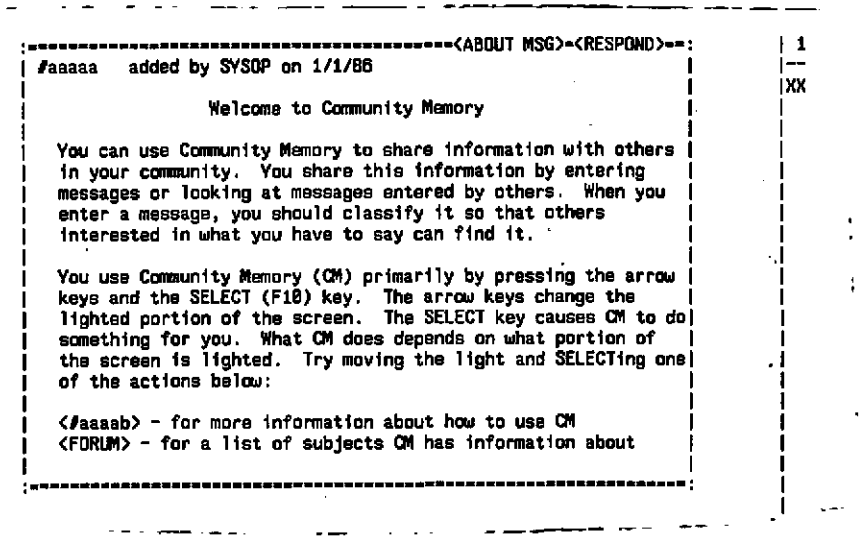
2. Basic Functions

This section describes the basics of how to use a CM public terminal.

2.1 Getting Started

If you approach a public terminal when no one is using it, you will find it displaying a *teaser*, which is a moving display designed to attract attention and induce people to try using CM. If you press any key on the keyboard, the teaser stops and your *session* with CM begins. Your session will continue until you tell CM you are through, or until 2 minutes go by without you pressing any keys. To prevent this from taking you by surprise, CM will warn you to press a key 30 seconds before it ends your session.

During your session, CM displays a list of messages called the *browse list* on the screen for you to read. When your session starts, the browse list contains only one message, called the *opening message*. When the opening message is displayed, the screen will look like this:



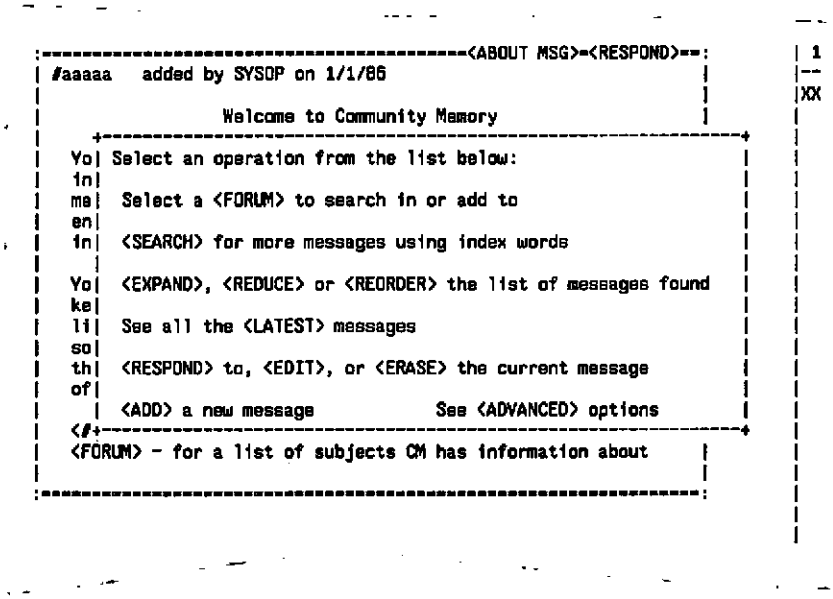
The opening message gives you the basic information you need to use CM.

The words "ABOUT MSG" in the opening message will be *highlighted*. By using the arrow keys, you can move this highlight around the screen, to any other phrase between "<" and ">" characters. These phrases that you can highlight are called *buttons*. Each button is a command to CM. If you press the SELECT key on the keyboard, CM does what the highlighted button tells it to do. This is called *selecting a button*. Note that buttons (which are on the screen) and keys (which are on the keyboard) are very different things, but are used in similar ways. PRESSING a KEY or SELECTING a BUTTON are both ways of telling CM to do something.

If you press INSERT followed by a programmable function key while a button is highlighted, that function key can then be used in place of that button.

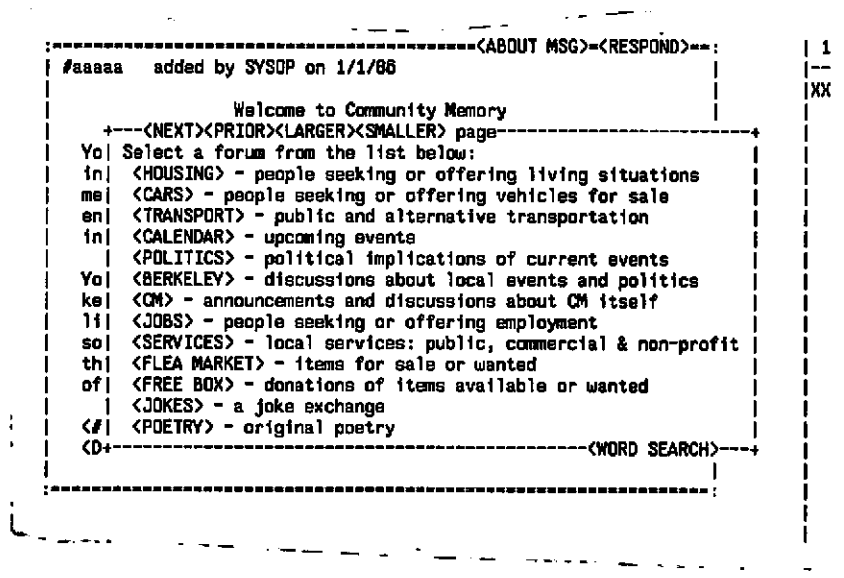
2.2 Searching for Messages

You begin searching for messages by selecting the FORUM button. If you want to search for messages and the opening message is not on the screen, you can press the MENU key. The MENU key can be used at any time to put the most important buttons onto your screen. If you pressed the MENU key while looking at the opening message, your screen would look like this:



The box drawn on your screen by the MENU key is called a *dialog box*. The FORUM button (the first button in the dialog box) will be highlighted. As before, you can move the highlight around to other buttons in the box using the arrow keys, but you can't move the highlight outside the box. Once you have a dialog box on your screen, you must do what the box tells you (in this case, "Select an operation from the list below"). If you change your mind and want to get out of a dialog box without doing what it says, press the UNDO key.

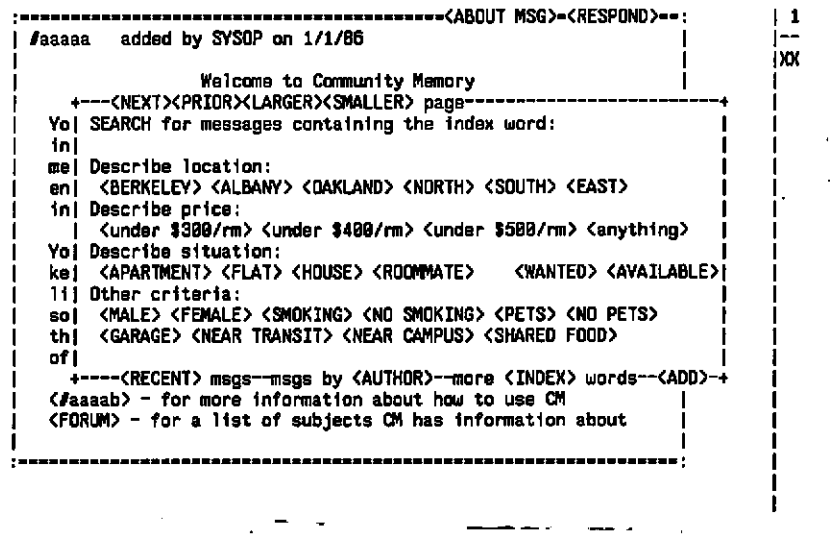
After you select the FORUM button, your screen will look like this:



This screen also contains a dialog box, this one listing all of the *forums* available on this CM node. A forum is a collection of messages on a particular subject. You begin searching for a message by choosing a forum in which to search.

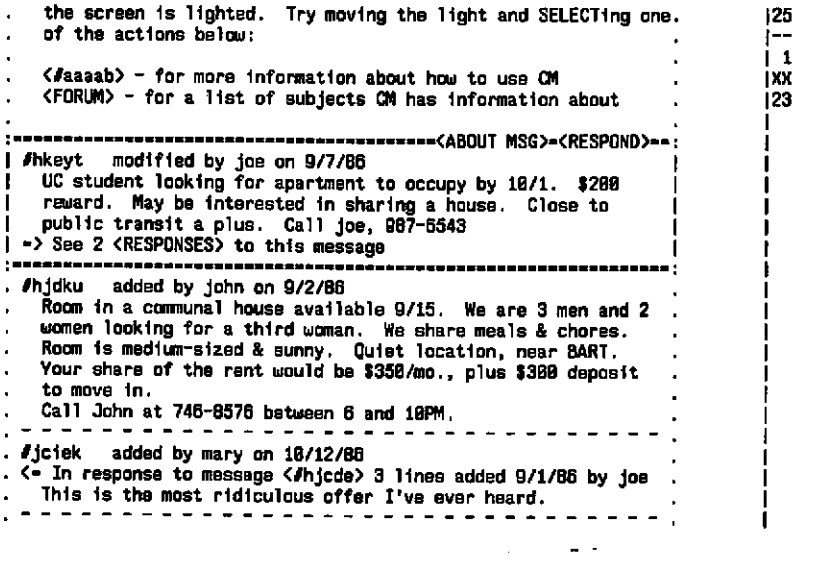
CM contains more forums than it can list on a single screen. You can move back and forth through the list of forums one screenful at a time by selecting the PRIOR and NEXT page buttons. The LARGER and SMALLER page buttons expand and shrink the dialog box itself so that each page contains more or fewer forums. The WORD SEARCH button is described in the Advanced Functions section.

After you select a forum, CM will display another dialog box in which you further describe what you are searching for. The contents of this dialog box depend on the forum you are searching in. If you had chosen HOUSING, for example, your screen would look like this:



The buttons in the box correspond to *index words* that authors may have chosen to describe their messages. Selecting one of the buttons within the dialog box will put all the messages whose authors chose that index word into your browse list. Buttons in the bottom line of the dialog box are described in the Advanced Functions section, except for the ADD button, which is described in the Adding Messages section.

After you select an index word button, your screen will look like this:



This is a display of your browse list (just like the first display) except that now it contains more than one message. The opening message is still at the top of the list, but now most of it has scrolled off the top of the screen to make room for new messages. The number in the upper right corner of the screen (25) tells you how many messages you have in your list. The 1 and 23 just below this number indicate that there is one message above the current message in the list and 23

messages below it. In the list of messages itself, the current message is indicated by the heavier border.

The highlight is always in the current message. Initially, it will be on the ABOUT MSG button. If you attempt to move the highlight up or down off of the current message, the current message changes to the previous or next message in the browse list. If the current message is not completely on the screen, CM scrolls the screen to bring it completely into view. By moving the highlight repeatedly, you can scroll through the entire list of messages.

If a message is longer than a specified maximum, only a portion of it will be displayed. In this case, when the message becomes the current message, the border around the message will include buttons for seeing other pages of the message or adjusting the amount of space the message occupies on the screen.

If you try to move the highlight off of the browse list with the right arrow, it will highlight the "XX" on the right side of the screen. While the "XX" is highlighted, the up and down arrows will quickly change the current message and scroll through the list of messages. A left arrow will return the highlight to the browse list.

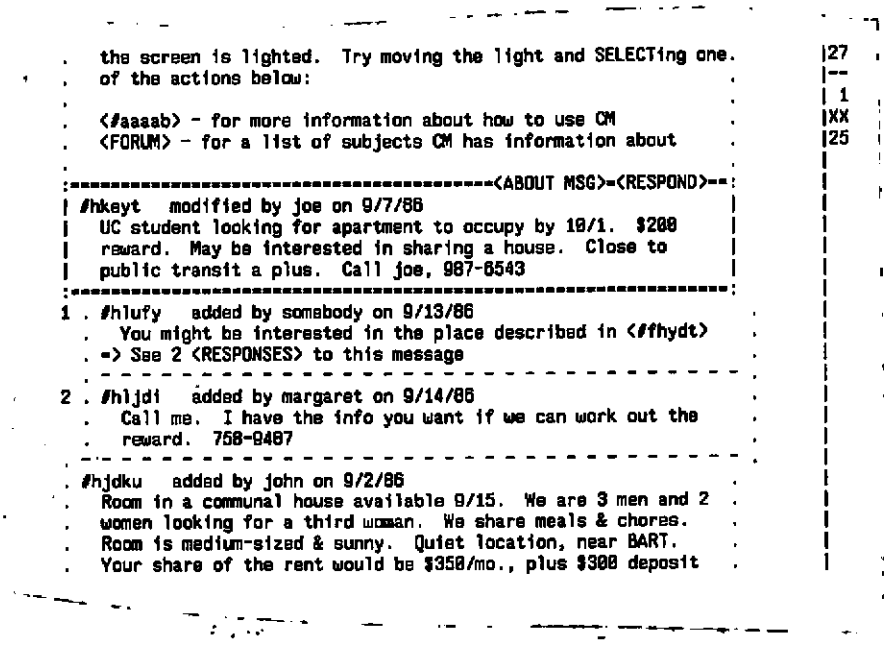
The first line of each message contains information about the message itself. The five letters following the "#" at the start of the line is a code that uniquely identifies the message. This code is called the *tag* of the message. The tag is assigned to the message automatically when the message is added to CM. If you remember the message's tag, CM will always be able to find the message for you again.

The first line of each message also contains the name of its author. These *pen names* are made up by the author when the message is entered. Pen names are protected by passwords to prevent people other than the author from using the pen name, but several users could agree to share a pen name, or a single user could have several pen names.

The first line of the message also gives the date that the message was added or the date of the most recent change to the message.

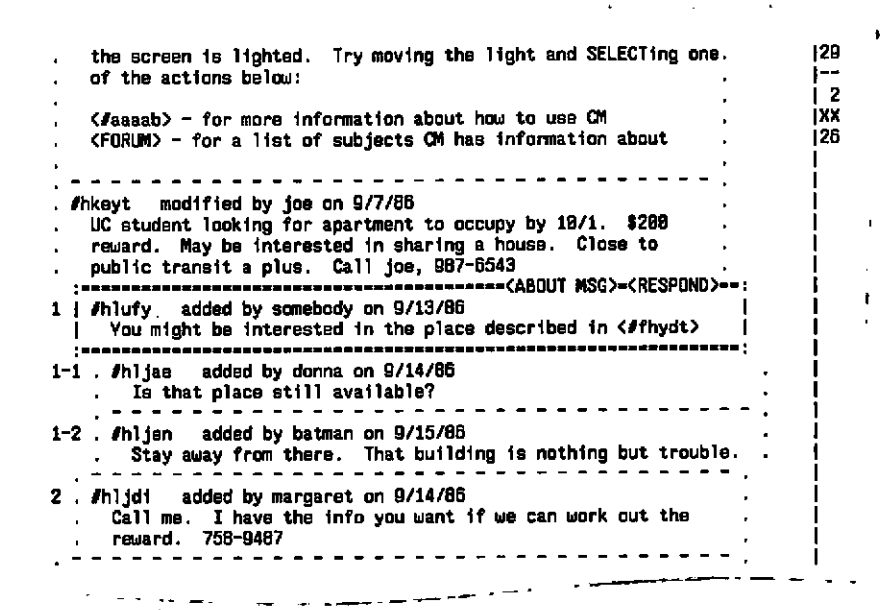
If people have written responses to messages, or if a message is itself a response, it will contain a line that tells you so. The line at the end of the current message (#hkeyt) tells you that two people have responded to that message. The line contains a button which you can select to see their responses. The second line of the bottom message on the screen (#jciek) tells you that that message is a response to another message. Selecting the button in that line will show you the message that #jciek responds to.

Responses are shown indented under the message they respond to. If you select the RESPONSES button in message #hkeyt, the screen will look like this:



Note the *response numbers* added to the left of the indented responses. Note also that the line containing the button for displaying the responses disappeared when the responses were displayed.

Responses can have responses of their own. These are displayed by further indenting. If you select the RESPONSES button in message #hlufy, the screen would look like this:



If responses are nested deeply enough, they may be indented far enough to the right to not show up completely on the screen. If this is the case, the entire screen will be shifted to the left sufficiently far to center the current message. If the screen is shifted to the left, it will be done in such a way that the response numbers will have dashes instead of digits in the leftmost column.

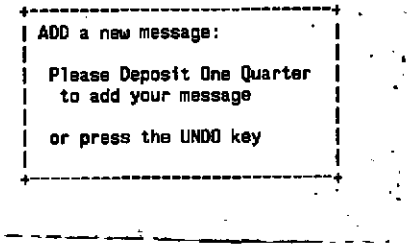
You can use the response numbers to move quickly between responses. If you try to move the highlight off the left edge of the current message (#hlufy), it will highlight the response number "1". If you then press the down arrow, the highlight will move to the response number "2" to the left of #hljdi, which then becomes the current message. Moving up and down on the response numbers always moves you to responses with the same or less indentation.

Where response numbers contain dashes, you have even more flexibility in how you can use them. If #hljae were the current message, trying to move the highlight off of the left edge of the message would highlight the second "1" in the response number "1-1". Up and down arrows at this point would move the highlight to the response numbers of adjacent messages. A left arrow would move the response number to the first "1" in the "1-1". Up and down arrows at this point would move the highlight to the response numbers "1" and "2" (the adjacent messages at the same indent as the highlight).

2.3 Adding Messages

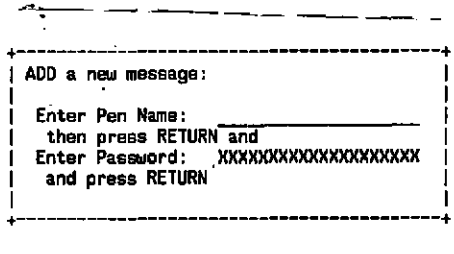
You begin adding a message by selecting the ADD button. There is an ADD button in the dialog box that CM displays when you press the MENU key.

When you select the ADD button, CM displays a dialog box asking you to deposit a quarter. At this point, you must either deposit a quarter or press the UNDO key. Pressing UNDO cancels the add and returns you to your browse list. If you deposit the quarter the add proceeds.



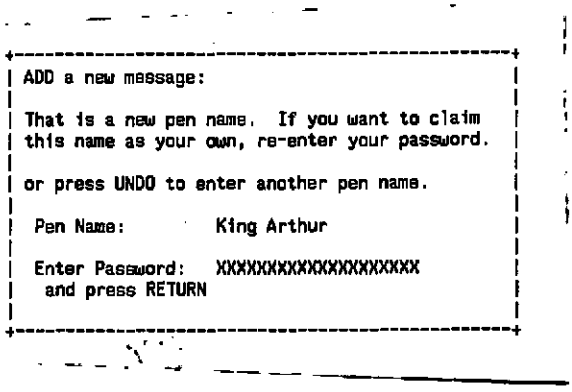
If you have not already used a pen name during this session, CM asks you for a pen name. If you have already used a pen name, CM allows you to enter your message at this point.

CM asks for a pen name by displaying a dialog box prompting you for a name and password.

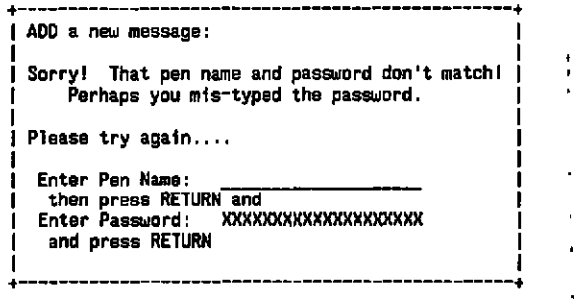


When you enter the pen name and password and press RETURN, CM checks the pen name to see if it has been used before. If the pen name hasn't been used before, CM assumes you are trying to create a new pen name and asks you to

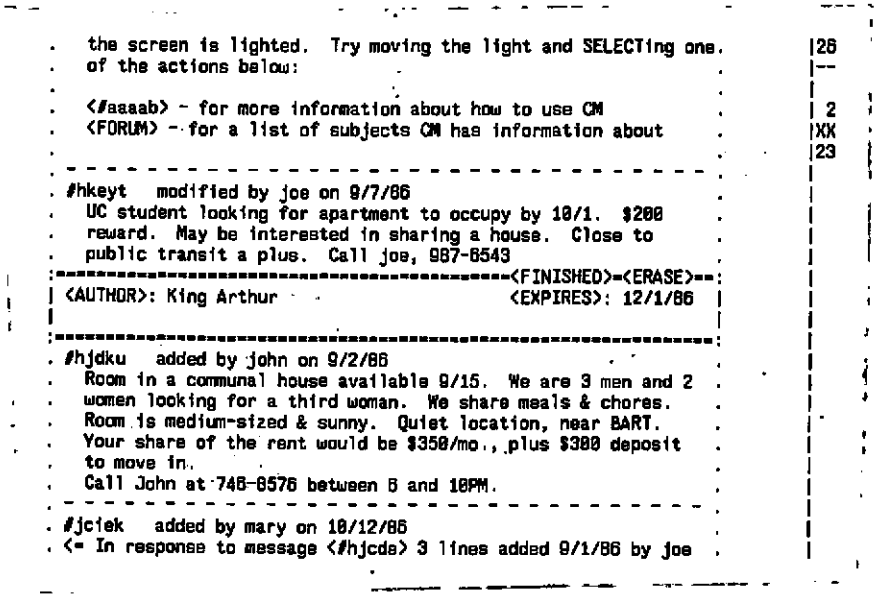
confirm the password you just typed.



If the pen name has been used before and the password doesn't match, CM presents an error message and asks you to try again:



Once CM has gotten a valid pen name, it displays an empty message for you to fill in. The empty message is placed in the browse list after the current message. The empty message then becomes the new current message. The screen will then look, for example, like this:



The *cursor* is on the blank line of the message, allowing you to type your message

into CM. The message has not yet been assigned a tag, but has been assigned a pen name and expiration date. Selecting the AUTHOR or EXPIRES button allows you to change these values. Selecting the ERASE button will present a dialog box which looks like this:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Select an option below...                     |
|                                               |
|  <ERASE> the new message (returns your quarter) |
|  Continue <EDITING> the new message           |
|  <STORE> the message (CM keeps your quarter)  |
|                                               |
+-----------------------------------------------+
```

The FINISHED button presents a similar dialog box, with the same options in a different order:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Select an option below...                     |
|                                               |
|  <STORE> the message (CM keeps your quarter)  |
|  Continue <EDITING> the new message           |
|  <ERASE> the new message (returns your quarter) |
|                                               |
+-----------------------------------------------+
```

From either box, selecting EDITING returns you to editing the message, and selecting ERASE removes the message from CM and from the browse list, and returns your quarter.

If you select STORE, CM asks you to select index words that describe your message. CM will ask you to select these words from a dialog box that looks similar to the one you use for searching. If you are in the HOUSING forum, the dialog box might look like this:

```
+-------------------------------------------------<FINISHED>--+
| INDEX words selected (select again to remove):              |
|  <BERKELEY> <ALBANY> <$400-500/rm>                          |
|  ---------------------------------------------------------  |
| Select up to 7 more words from the list below:              |
|                                                             |
| Describe location:                                          |
|  <BERKELEY> <ALBANY> <OAKLAND> <NORTH> <SOUTH> <EAST>       |
| Describe price:                                             |
|  <under $300/rm> <$300-400/rm> <$400-500/rm> <over $500/rm> |
| Describe situation:                                         |
|  <APARTMENT> <FLAT> <HOUSE> <ROOMMATE>    <WANTED> <AVAILABLE>|
| Other criteria:                                             |
|  <MALE> <FEMALE> <SMOKING> <NO SMOKING> <PETS> <NO PETS>    |
|  <GARAGE> <NEAR TRANSIT> <NEAR CAMPUS> <SHARED FOOD>        |
+-----------------------------------more <INDEX> words--------+
```

You should select index words from the box that describe your message, up to the maximum number allowed. As you select a button, it is copied to the top part of the box. The top of the box is your record of the index words you have selected. Selecting an already selected word causes it to be un-selected and to disappear from the top part of the dialog box. When you have selected the best words for

describing your message, select the FINISHED button.

The INDEX button at the bottom of the box is explained in the Advanced Functions section.

When you select FINISHED, CM examines the index words you have chosen to see if your message might belong in any forum other than the one you are currently working in. If you have used index words that are associated with any other forums, CM presents you with a list of those forums and allows you to include your message in them as well. The list appears in a dialog box that looks like this:

```
+---<NEXT><PRIOR><LARGER><SMALLER> page----------<FINISHED>--+
| Forums selected (select again to remove):                  |
|  <HOUSING>                                                 |
|  ----------------------------------------------------------|
| Select any other forums you want your message included in: |
|                                                            |
|  <HOUSING> - people seeking or offering living situations  |
|  <CALENDAR> - upcoming events                              |
|  <BERKELEY> - discussions about local events and politics  |
|  <JOBS> - people seeking or offering employment            |
|  <SERVICES> - local services; public, commercial & non-profit |
|  <FLEA MARKET> - items for sale or wanted                  |
|  <FREE BOX> - donations of items available or wanted       |
|                                                            |
+-------------------------------<WORD SEARCH>--<ENTER NAME>--+
```

Select buttons for any relevant forums, and then select FINISHED. As with index words, you can undo mistakes by selecting them again. The WORD SEARCH and ENTER NAME buttons are described in the Advanced Functions section.

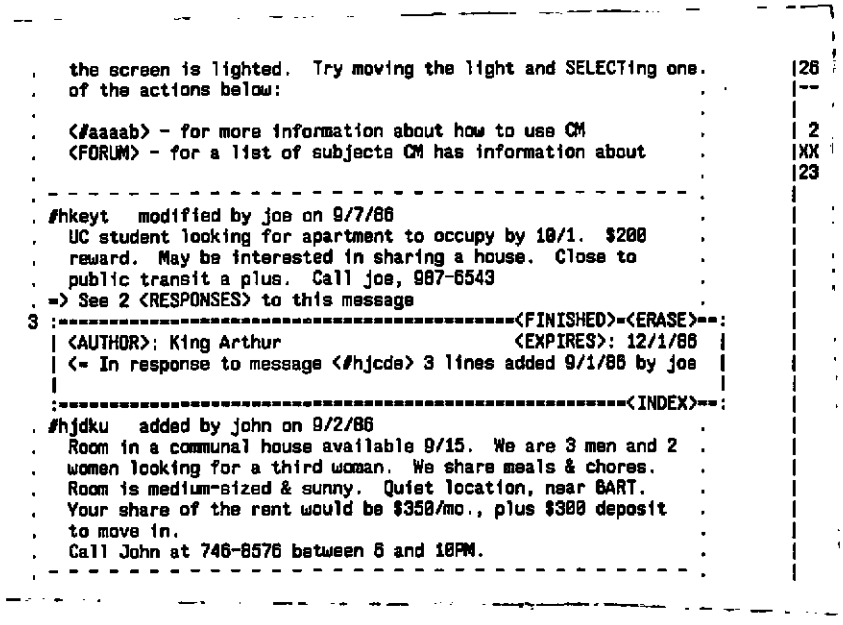
After you have selected index words and forums for your message, it will be assigned a tag and displayed in the browse list like any other message:

```
.  the screen is lighted.  Try moving the light and SELECTing one.
.  of the actions below:
.
.  <#aaaab> - for more information about how to use CM
.  <FORUM> - for a list of subjects CM has information about
.
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
. #hkeyt   modified by joe on 9/7/86
.  UC student looking for apartment to occupy by 10/1.  $200
.  reward.  May be interested in sharing a house.  Close to
.  public transit a plus.  Call joe, 987-6543
:=============================================<ABOUT MSG>=<RESPOND>==:
| #jguhf   added by King Arthur on 11/1/86
|.  Student looking for 1-bedroom apartment.  Can pay up to $450
|  for the right place.  Must be large, sunny, in a safe
|  location and convenient to grocery shopping (walking
|  distance).  Call 549-8688 weekdays
:=============================================================:
. #hjdku   added by john on 9/2/86
.  Room in a communal house available 9/15.  We are 3 men and 2
.  women looking for a third woman.  We share meals & chores.
.  Room is medium-sized & sunny.  Quiet location, near BART.
.  Your share of the rent would be $350/mo., plus $300 deposit
.  to move in.
.  Call John at 745-8576 between 6 and 10PM.
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
. #jciek   added by mary on 10/12/86
  <= In response to message <#hjcde> 3 lines added 9/1/86 by joe
```

2.4 Responding to Messages

Responding to messages is very similar to adding a new message. You can only respond to a message when it is your current message. You begin by selecting the RESPOND button in the border of the message. CM will ask for a quarter and, if necessary, a pen name, just as it does when you are adding.

When CM displays the empty message for you to fill in, it will be indented immediately beneath the message you are responding to, and will contain the appropriate response number. It will also contain a line indicating that it is a response:



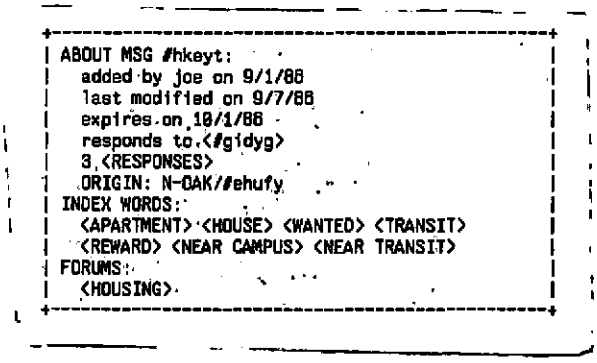
When you select the ERASE or FINISHED buttons, CM displays a dialog box as before, but selecting the STORE option stores the message immediately without adding index words. To add index words, you must select the INDEX button in the message border. The INDEX button takes you through the index word assignment like STORE did when you were adding.

3. Advanced Functions

The following functions allow you to make more effective use of CM. They allow you to keep information that you have entered up to date, find information more easily, and collect together information that you have found for others to use.

3.1 The ABOUT MSG button

The border of the current message always contains an ABOUT MSG button (unless you are editing the message). Selecting the ABOUT MSG button provides you with more information about where the message came from and how it is classified than is available in the first line of the message. Selecting the ABOUT MSG button displays a dialog box that looks like this:



The date added, the expiration date, the index words, and the forums are always present. The last modified date is present if the message has been changed since it was entered.

If a message is a response or has responses, the appropriate lines will be present. Selecting the buttons on these lines will have the same effect as selecting the corresponding lines in the message itself, except that these lines will always be available; they do not disappear once the related messages are displayed.

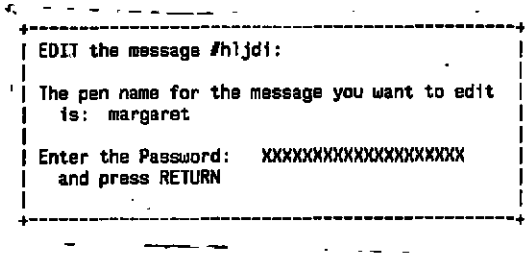
The ORIGIN line is present only if the message is a copy of a message from another node. This line gives the node on which the message was entered and the tag assigned to the message on that node.

3.2 Editing and Erasing Messages

If you are the author of a message, you can edit or erase that message. You first make the message to be worked on the current message. Then press the MENU key and select the EDIT or ERASE button from the menu displayed. Further details are given below.

Messages can only be edited or erased on the same node they were originally entered on. If the ABOUT MSG box contains an ORIGIN line, the message was entered on another node and cannot be edited or erased. The reason for this is that your pen name and password are only known by the node you first used them on. Thus you have no way of proving to any other node who you are. In fact, two different users on two different nodes could use the same pen name without conflict (eg. you could have a "nancy" in Berkeley and another "nancy" in Albany).

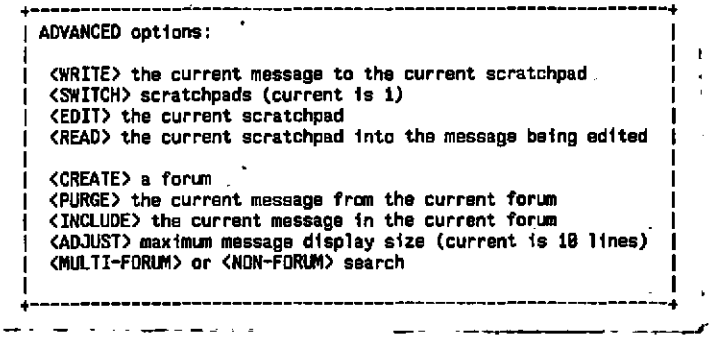
3.2.1 Editing a Message When you ask to edit a message, CM checks to see if the last pen name you used matches the one on the message. If the pen names don't match, or you haven't yet used a pen name in this session, CM presents a dialog box asking you for the password.



When password has been validated, CM will ask you for a quarter unless you have added or edited this message already during this session. Then the message is displayed as it was when you added it (AUTHOR and EXPIRES are buttons). The border contains FINISHED, ERASE, and INDEX buttons that behave as when you add a response.

3.2.2 Scratchpads CM provides nine areas called *scratchpads* for storing text. One important use of these scratchpads is for moving text while adding or editing messages. These scratchpads are numbered 1 through 9. One of them is always selected as the *current scratchpad*. The current scratchpad is initially 1.

To use the scratchpads, press the MENU key and select the ADVANCED button. CM will display a dialog box containing a menu of advanced options:



The WRITE button writes the text of the current message into the current scratchpad. The SWITCH button causes CM to prompt you for a new current scratchpad number (note that it also displays the old number). The EDIT button displays a dialog box showing the contents of the current scratchpad and allowing you to edit it. The border of the dialog box contains a FINISHED button which returns you to your browse list.

The READ button only appears if you are adding or editing a message. Selecting this button reads the content of the current scratchpad into your message.

As an example of how to use the scratchpads, assume you wanted to move a block of text in a message you were editing. First, you would select WRITE to save the message in the scratchpad. Then delete the block of text from its old position. Select EDIT to see the copy of the message in the scratchpad, and delete everything but the block you wish to move. Select FINISHED to return to editing the message. Finally, move the cursor to the place you want to insert the block

and select READ.

You can use similar techniques to move text from one message to another. You can copy text out of any message, not just the ones you can edit.

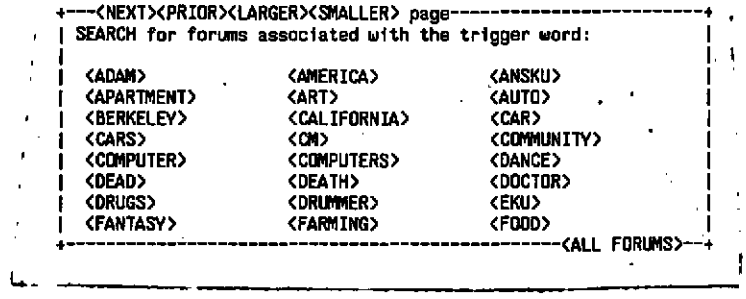
3.2.3 Erasing a Message When you select the ERASE button, CM presents a dialog box asking you to confirm the operation. As in editing, you will be prompted for a password if you have not been using the matching pen name. After completing both of these checks, CM erases the message from the database.

3.3 Putting Buttons in Messages

You can type buttons into the text of a message by enclosing a string of characters between "<" and ">" characters. What the button does depends on the enclosed character string. See the Button Definition Language section in the Appendices for more information.

3.4 Searching for Forums

When CM presents a list of forum names to pick from, the border of the dialog box will contain a WORD SEARCH button. If you select this button, CM replaces the list of forum names with a list of index words associated with forums (called *trigger words*).



Trigger words are listed in alphabetical order. When you select a trigger word, CM replaces the trigger word list with a list of the forums associated with that trigger word. You can then select a forum from this shorter, more relevant list.

If the reduced list is not to your liking, you may select WORD SEARCH again to come up with a different list. If you want to return to the full list, select the ALL FORUMS button in the border of the dialog box containing the trigger word list.

The border of the dialog box containing the forum list also contains an ENTER NAME button. Selecting this button enables you to type in the name of the forum you want without having to find it in the list.

3.5 Working with the Browse List

The Basic Functions section of this manual describes one way to get messages from a particular forum with a particular index word into your browse list. You invoke this function with the FORUM button.

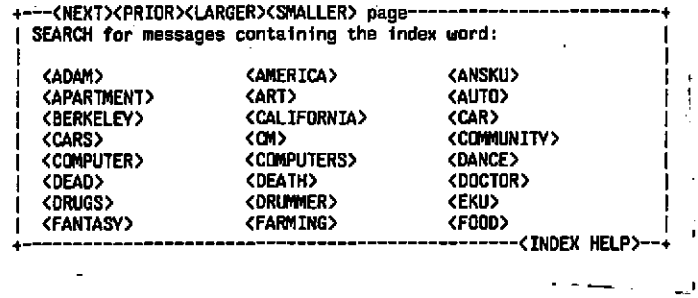
There are many more sophisticated ways to use your browse list. As you bring messages into your browse list by index word, some will be relevant to you and others will be irrelevant. You can use browse list functions to collect all possibly relevant messages, and then to find and eliminate most irrelevant ones. Once you have a reasonable number of messages, you can include and exclude messages individually, or move messages around in the list.

When using these functions, it is helpful to think of the browse list as divided into two parts. The messages above the current message should be thought of as the messages you have decided are worth looking at further. The current message and those below it should be thought of as the messages that still need to be sorted out. When searching, you add batches of raw messages to the list, weed out irrelevant ones, and move the current message down to include the filtered messages in the top part of the list.

3.5.1 EXPANDing the Browse List The Basic Functions section of this manual describes how to use the FORUM button to select a forum and search within it by index word. If you want to search using another index word in the same forum, you can do this by selecting the SEARCH button in the dialog box displayed by the MENU key.

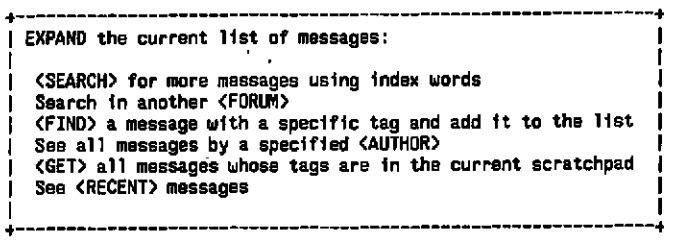
The SEARCH button displays the dialog box containing the important index words for the forum. Selecting an index word includes matching messages in your browse list after the current message. The bottom line of this dialog box contains additional special buttons. RECENT and AUTHOR are explained below. ADD was explained in the Basic Functions section.

The INDEX button displays a list of all the index words used in the forum in alphabetical order. Selecting an index word from this list has the same effect as selecting one from the SEARCH dialog box.



The INDEX HELP button returns you to the original SEARCH dialog box containing the suggested index words for the forum.

Further options for getting more messages into your browse list are available by selecting the EXPAND button in the dialog box displayed by the MENU key. This button displays a menu of all the different ways to add more messages to the browse list.



The SEARCH and FORUM buttons have already been described; they appear again on this menu for convenience. FIND displays a dialog box which prompts you for a tag, and then includes the message with this tag in your browse list after the current message. AUTHOR displays a dialog box which prompts you for a pen name, and then includes all messages by this author in your browse list after the current message. GET scans the current scratchpad for buttons containing tags and includes messages with these tags in your browse list after the current message.

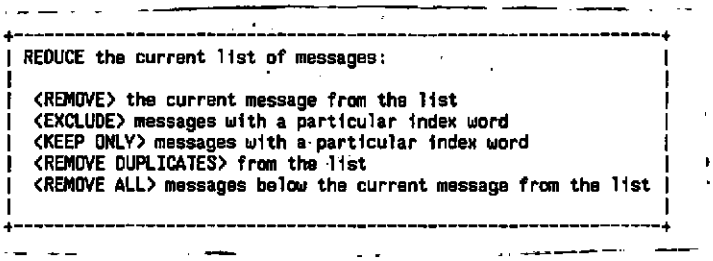
RECENT places all the messages in the current forum (or all the messages in the node, if no forum is currently selected) at the end of your browse list. Each time you select RECENT, it replaces messages from the last time you selected RECENT, but messages will only be replaced if they are after the current message and after the positionally last change that you made to your browse list. For example, if you selected RECENT, scanned through the first ten messages displayed, and then used FIND to insert a message in the eleventh position, another RECENT would replace the messages starting with twelve.

3.5.2 Multi-forum and Non-forum Searches If you want to search several forums simultaneously, or the entire database, you can do so by using buttons on the ADVANCED menu.

The NON-FORUM button de-selects your current forum, so that you are in the same state as when you started your session (i.e. without a current forum). Now any searches done before selecting another forum will search the entire database. This button then displays a list of all the index words as if you had selected the SEARCH button.

The MULTI-FORUM button displays a dialog box for selecting several forums. This dialog box looks like the one for choosing forums while adding a message. The forums already selected are displayed in the top portion of the box. After you have selected as many forums as you like, select the FINISHED button. CM then displays a list of all the index words as if you had selected the SEARCH button. Searches will find messages in any of the selected forums. Multi-forum searches with a lot of forums may be somewhat slower than other searches.

3.5.3 REDUCEing the Browse List Selecting the REDUCE button from the dialog box displayed by the MENU key gives you a list of options for removing unwanted messages from your browse list.



Selecting the REMOVE button removes the current message from the list. This is useful for individually eliminating messages you don't want to see again after you have narrowed down the browse list with other buttons. If the current message has comments, CM asks you if you want to remove all the comments as well. If you opt to keep the comments, they will be moved to the left margin and treated as independent messages. The "In response to" lines will re-appear in each of the comments.

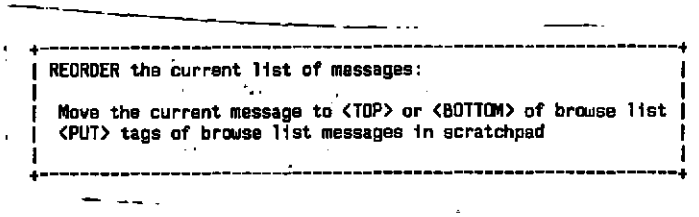
Selecting the EXCLUDE button presents an index word list like the one presented by SEARCH (except that the first line says "EXCLUDE messages containing the index word:"). Selecting an index word from this list removes all messages in the current forum containing that index word. Only messages at or below the current message are removed.

Selecting the KEEP ONLY button presents an index word list like the one presented by SEARCH (except that the first line says "KEEP ONLY messages containing the index word:"). Selecting an index word from this list removes all messages in the current forum but NOT containing that index word. Only messages at or below the current message are removed.

Selecting the REMOVE DUPLICATES button removes all messages below the current message which appear in the browse list in some earlier position as well.

Selecting the REMOVE ALL button removes all messages below the current message. CM will ask for confirmation before removing them.

3.5.4 REORDERing the Browse List Selecting the REORDER button from the dialog box displayed by the MENU key gives you a list of options for reordering the messages on your browse list.



The TOP and BOTTOM buttons move the current message to the top or bottom of the list. Usually, you would use TOP to save a message for later, and BOTTOM to put off deciding whether a message is relevant or not. (If you decide that a message is irrelevant, you would use REMOVE.) You cannot move a message to the bottom of the list if the bottom of the list is displaying RECENT messages.

The PUT button writes the tags of all messages in the browse list (except RECENT messages) into the current scratchpad in the form of buttons. By editing the scratchpad, you can change this list, and then read it back into the browse list with the GET button (see EXPANDing the Browse List). You may want to use the REMOVE ALL button before the GET button to avoid duplicating messages.

3.6 Special Forums

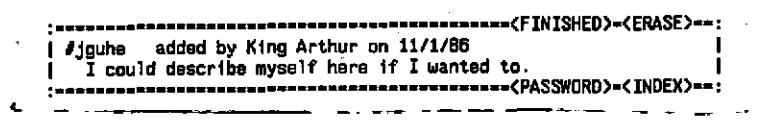
Messages and forums vary from one CM node to another, depending on the information needs of the users. However, some forums, messages, and pen names exist in every node.

The "Authors" forum contains a message for each pen name being used in the node. These messages are called *author descriptions*. One author description that will exist on every node is for the pen name *SYSOP*, which is reserved for the operators of the node.

The "Forums" forum contains a message for each forum in the node. These messages are called *forum descriptions*. Every node will contain forum descriptions for the forums "Forums", "Authors", and "Help". Additional forum descriptions are added when new forums are created (see below).

The "Help" forum contains messages explaining various procedures and conventions used in the node. "Help" will contain messages defining the special index word menus for each forum, the opening message displayed at the beginning of a session, and other help messages displayed by tags in the opening message. The opening message will always have the tag #aaaaa and will be authored by SYSOP.

3.6.1 Author Descriptions Author descriptions are added automatically to the Authors forum when a user first uses a pen name. Users may edit their author descriptions to change their passwords or to provide descriptive information about themselves. Author descriptions are easy to find, since they are always the oldest (last) message displayed by an AUTHOR search. An author description being edited appears as follows:



Note that there are no AUTHOR or EXPIRES buttons. This is because the AUTHOR cannot be changed and the message has no expiration date. The PASSWORD button allows you to change your password. The INDEX button allows you to assign index words to your author description (classifying yourself so that others can find you).

The text of the message is available for you to describe yourself and your interests, and possibly to leave contact information.

The ERASE button will only allow you to erase your author description if there are no other messages by you left in the node.

3.7 User-created Forums

You can create and manage your own forums to hold information on a topic of importance to you. The person creating a forum is called its *host*. A forum is operated as a public service to all CM users. A forum is a tool for helping the user community to organize its information.

3.7.1 Creating a Forum You create a forum by selecting the CREATE button from the ADVANCED function menu. CM presents a dialog box asking for the new forum name. If you respond with a valid (not previously used) name, CM creates a forum description message for you to edit. The forum description originally appears as follows:

```
:=============================================<FINISHED>=<ERASE>==:
| <AUTHOR>: mary                                                  |
| Forum Name: HOUSING                                             |
| <DESCRIPTION>:                                                  |
|                                                                 |
| <DEFAULT EXPIRATION>: 30 days                                   |
| <CHANGES TO>:                                                   |
| <CHANGES FROM>:                                                 |
:=================================================<INDEX>==:
```

If you select the ERASE button, CM returns to browsing without creating the forum.

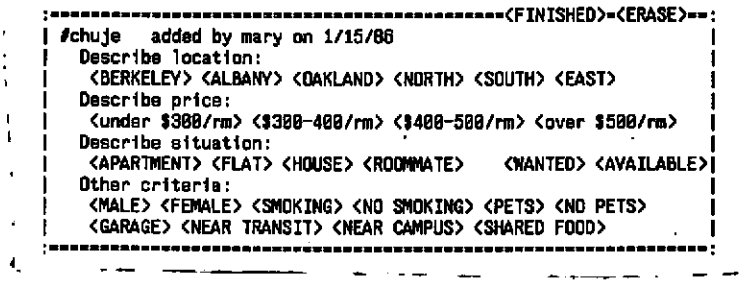
The DESCRIPTION line is used to describe the forum in various lists. Selecting this button allows you to enter a description. The DEFAULT EXPIRATION line is used to calculate a default expiration date for messages added to this forum. Selecting this button allows you to change the value.

The CHANGES TO and CHANGES FROM lists specify forums on other nodes to exchange messages with. Selecting these buttons allows you to enter information into these lists. These lists are described further in the Networking section.

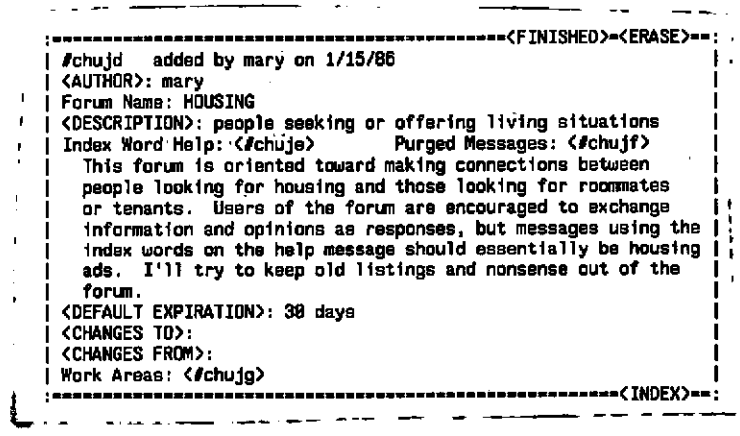
The body of the message is available for more detailed comments and notes about the forum.

The INDEX button allows you to assign index words to the forum description message. These index words can be used to find the message by searching in the "Forums" forum. They also serve as trigger words for the forum. You should use any words that might be used on messages that you want in your forum.

When you have finished editing the forum description, select FINISHED. CM will present you with a blank index word help message to edit. The index word help message is an empty message into which you type what you want to appear in the dialog box when users of this forum need to pick index words. For example, the index word help message to generate the dialog boxes used in the examples earlier in this document would appear as follows:



When you select the FINISHED button, the creation of the forum is complete. The host of a forum can edit a forum description or index menu, in the same way as editing any other message. When being edited, a forum description appears as follows:



The forum name and the message tags cannot be changed. The "Index Word Help" tag refers to the message defining the index word help dialog box.

The "Purged Messages" and "Work Areas" tags refer to messages that are maintained by CM itself. These messages cannot be edited by any user. "Purged Messages" contains tags of messages explicitly removed from the forum by the host. "Work Areas" contain information used by CM to locate messages in forums more rapidly.

3.7.2 Managing a Forum Management of a forum consists of maintaining the list of trigger words and the forum description, and purging and including messages in the forum.

The trigger words and the forum description are what attract other users to your forum. By making them as complete and descriptive as possible, you will reach the largest possible audience while not interfering with those who aren't interested in the subject of the forum.

You can include any message you want into your forum by making that message the current message and selecting INCLUDE on the ADVANCED options menu. This is normally how you would pre-load a forum with information when you first create it.

On an ongoing basis, it is better to have users submit their messages to forums themselves, so that you don't have to hunt up all the relevant information. Your forum name will be presented to users who put any of your trigger words among their message's index words. They may then submit their message to your forum.

You may disagree with a user's choice of your forum. If you feel their message is sufficiently out of place, you may purge it from your forum. You do this by making that message the current message and selecting PURGE on the ADVANCED options menu. Purging a message removes it from your forum but does not erase it from the node. It will remain in any other forums, and can also be found via its tag or a non-forum search.

Messages purged by you will be recorded in the "Purged Messages" message associated with your forum. This prevents the author of the message from re-submitting it to your forum, and also allows other users to see what you have purged. This gives other users a practical record of your editorial decisions.

3.7.3 Networking If you own forums on two or more CM nodes, or want to cooperate with forum hosts on other nodes, you can connect forums together. Each forum to be connected must list the other forum names and node names in the CHANGES FROM and CHANGES TO lines of the forum descriptions. The CHANGES TO line lists those forums that are notified when messages are added, edited, or erased in the local forum. The CHANGES FROM line lists those forums from which such changes are copied into the local forum.

4. Appendices

4.1 Keyboard Details

This section explains the function of the keyboard in detail.

4.1.1 Arrow Keys What happens when you press an arrow key depends on whether you are editing text or not. When you are not editing text, the arrows move a highlight around between buttons. When you are editing text, they move a cursor through the text you are editing. A further distinction depends on whether you are editing a single line (as when you are typing an author name), or you are editing a message or scratchpad text, which can be several lines long.

4.1.1.1 Moving the Highlight When moving a highlight, the left and right arrows move the highlight left and right between buttons on the same line. Up and down arrows move to the next line above or below that contains buttons, and to the closest button on that line.

If the highlight is in a dialog box, arrow keys will not cause the highlight to cross the borders of the box. Instead, the highlight will wrap to the opposite side of the box.

If the highlight is on the browse list and on the first button on the line, the left arrow moves you to the response number (or does nothing if the current message has no response number). If you are on the last button on the line, the right

arrow moves you to the scroll bar. When the highlight is on the response numbers or scroll bar, the arrow keys can be used to move quickly through the browse list as described in the section on searching for messages.

If the highlight is on the browse list and up or down arrows cause the highlight to move to another message, the message moved to becomes the current message. If this message is not completely on the screen, the screen is scrolled (both vertically and horizontally) to display the entire message, up to the maximum allowable size for a message display.

4.1.1.2 Arrow Keys During Editing When editing, the arrows move the cursor up, down, left, and right within the editing area. The cursor can be moved all the way to the right margin of the editing area, even if no characters have been typed there.

Typing a left arrow at the left margin moves the cursor to the last typed character of the previous line. On the first line of the editing area, typing a left arrow at the left margin has no effect.

At the right margin, the right arrow moves to the first column of the next line. On the last line of the editing area, typing a right arrow at the right margin has no effect.

When editing a multi-line text (a message or scratchpad) any arrow key which causes the cursor to change lines also *reformats* (see below) adjacent lines.

Attempting to move the cursor out of the editing area with up or down arrows will have no effect, unless the message being edited contains buttons above or below the editing area. In that case, the cursor changes to a highlight and moves to the appropriate button.

4.1.2 Editing Keys The meanings of the editing keys also change between single-line and multi-line texts. In multi-line texts, CM attempts to fill paragraphs to keep words on as few lines as possible. Thus, changes to the edit line may affect neighboring lines.

The general rule for filling paragraphs is that if a line begins with a non-blank, and the first word on the line would fit on the end of the previous line, it is moved there. This implies that the first line of each paragraph begins with a blank (i.e. paragraphs are indented). A word is presumed to fit on a line only if there is enough room for both the word itself and a trailing blank.

During some editing operations, the filling rule may be temporarily violated, but only in the paragraph containing the cursor. Furthermore, paragraphs are always eventually brought back in conformity with this rule. The process of bringing a paragraph back into conformity with the filling rule is called reformatting the paragraph. If the character under the cursor moves during reformating, the cursor moves with it.

When editing any kind of text, the typewriter keys replace the character under the cursor with the character pressed, and move the cursor one character to the

right if it is not already in the rightmost column of the field. If the cursor is in the rightmost column and you are editing a single line, the last character is replaced and the cursor doesn't move.

Typing a character in the rightmost column of a multi-line text opens a blank line below the current line and moves the cursor on to it. In addition, if the old line contains a blank and the character typed was not a blank, the last word of the old line is wrapped down to the new line.

The INSERT key moves all characters under and right of the cursor one character to the right and inserts a blank under the cursor. The character in the rightmost column of the field is lost in single line editing. In multi-line editing, words at the right margin are wrapped down to the next line as necessary. If the next line is full, a new blank line is inserted below the current line and the word at the right margin is wrapped down to it.

The DELETE key deletes the character under the cursor and moves all characters to the right of the cursor one character to the left. The rightmost column becomes a blank.

The BACKSPACE key acts like the delete key, except it deletes the character to the left of the cursor. In the leftmost column of a multi-line edit, BACKSPACE behaves like left arrow.

The CLEAR key replaces all characters to the right of the cursor with blanks.

RETURN signals the completion of editing for single-line edits. For multi-line edits, RETURN creates a blank line after the current line, wraps all words to the right of the cursor (if any) to the new line, inserts a blank at the beginning of the new line, and puts the cursor to the right of the blank. This, in effect, inserts a paragraph boundary.

All above keys except RETURN auto repeat while being held down.

4.1.3 Other special keys The effects of the other special keys are:

HELP - Display a help dialog box. The contents of this box are derived from a message in the HELP forum. The message used depends on the context in which the HELP key is pressed (eg. pressing HELP while in a dialog box will display a help message explaining the purpose of the dialog box and what is required of the user). The message displayed may contain buttons that you can select to see additional help messages in the dialog box. The UNDO key or a FINISHED button in the border removes the dialog box from the screen.

MENU - Display a dialog box containing a menu of the main CM operations, from which you can select a button.

SELECT - Perform the operation that corresponds to the currently highlighted button.

UNDO - Undo the effects of the last change to the browse list. Multiple UNDOs will continue back in history. UNDO affects only which messages are in the browse list and which message is current. Scratchpad and message contents are unaffected. Pressing UNDO while in a dialog box will return to the previous dialog box, if any, or remove the dialog box from the screen and cancel the operation in progress.

4.2 Glossary

The following terms have special meanings in the context of Community Memory.

adding creating a new message and storing it in CM

arrow keys
4 keys on the public terminal keyboard labeled with arrows (up, down, left, right). Used for moving the cursor or highlight around on the screen.

author the user who adds a message to CM

author descriptions
a message in the "Authors" forum. There is one author description for each author on CM.

BACKSPACE
One of the keys on the public terminal keyboard. Used for backing up the cursor while erasing mistakes.

browse list The list of messages currently being displayed for a user.

buttons
areas of the public terminal screen between "<" and ">" characters. One of these buttons is always highlighted. Pressing the SELECT key while a button is highlighted causes CM to perform some action corresponding to that button.

CLEAR
One of the keys on the public terminal keyboard. Used to erase everything between the cursor and the end of a line or field while editing.

coinbox
A device attached to the public terminal that allows it to accept and return quarters under program control.

Community Memory (CM)
The system for public information exchange described in this document.

copies
messages which duplicate messages originally entered on other nodes. CM makes copies so that people on one node can see what people on another node have to say.

current scratchpad
One of the 9 scratchpads that is selected for use in scratchpad operations.

cursor
A lighted box that covers a single character. Indicates the current position in a text when editing.

DELETE
One of the keys on the public terminal keyboard. Used to delete the character under the cursor while editing.

dialog box
A rectangular area on the screen that overlays the list of messages being displayed and in which some specific interaction between the user and CM takes place.

forum descriptions
messages in the "Forums" forum. Each such message describes one of the forums on a CM node.

forums A collection of messages on a particular node.

HELP
One of the keys on the public terminal keyboard. Used to request more information about what to do in the current situation.

highlight
A lighted box covering more than one character. Indicates the button to be executed if the SELECT key is pressed.

host The user who created a forum and is responsible for managing it.

index words
words assigned to a message to classify what it is about.

INSERT
One of the keys on the public terminal keyboard. Used when editing to insert space into a piece of text.

keyboard
part of the public terminal which contains keys that the user can press.

keys switches which make up the keyboard.

MENU
One of the keys on the public terminal keyboard. Used to display a dialog box containing commonly-used buttons.

messages
A piece of text entered by a user to express a thought, idea, reaction, or item of information. CM is a system for the storage, organization, and retrieval of such messages.

node
The computer which holds messages for a set of directly-connected public terminals. Nodes can be connected together to exchange data. This term is also sometimes used to mean the node computer and its public terminals together.

opening message
The initial help message displayed when a CM session starts. The tag of the opening message is #aaaaa.

originals
Messages entered through this node's public terminals. These are distinguished from copies, which are messages obtained from other nodes.

pen names
Names which users make up to identify themselves as authors of messages.

printer
An optional device in the public terminal which can make a paper copy of a message.

programmable function keys
keys on the public terminal whose function can be changed by the user.

public terminals
The devices which allow users to enter and examine messages on CM.

reformat
Rearrange typed lines into paragraphs which occupy as few lines as possible.

response
A message entered to express a reaction to another message.

response numbers
Numbers displayed to the left of responses to show their interrelationship.

RETURN
One of the keys on the public terminal keyboard. Used to indicate that you are finished editing a single-line text, or to insert a paragraph divider into a multi-line text.

scratchpads
9 numbered ares for holding text during a session.

screen Part of the public terminal on which messages are displayed.

SELECT
One of the keys on the public terminal keyboard. Used to initiate the activity associated with the highlighted button.

selecting a button
pressing the SELECT key while a button is highlighted.

session
A single interval of interaction between a user and a public terminal.

SYSOP A pen name reserved for use by the operators of a node.

tag
A five-letter code assigned to a message that is used to identify that message within the node.

teaser
An activity performed by a public terminal between sessions to attract the attention of potential users.

trigger words
The index words on a forum description message. These words are used to find the forums that a message might belong in.

typewriter keys
The keys on the public terminal keyboard that produce typewritten text when pressed.

UNDO
One of the keys on the public terminal keyboard. It is used to undo erroneous changes to the browse list and to back out of dialog boxes.

user A person who uses CM.

version 4
The version of CM designed to run on intelligent terminals. Version 1 is the original 1972 version. Version 2 is the version demonstrated at the 1983 Computer Faire. Version 3 is the version installed in Berkeley in 1984 using Soroc terminals and running under UNIX.

4.3 Button Definition Language

(to be provided)

Community Memory User's Manual

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CM User's Manual

Carl Farrington

The Community Memory Project

The proposed Community Memory user interface is described in the form of a user's manual for the hypothetical system. All important features, terminology, and concepts are included.

1. Introduction

This document contains all the information needed to use *version 4* of *Community Memory (CM)*. It contains both introductory material and advanced procedures.

Other documents describe system administration and software internals.

The first section of this document introduces basic concepts and terminology. The second section explains how to get started using CM. The third section contains more advanced techniques. The fourth section contains reference information.

Terms with a technical meaning in the scope of this document are presented in italics (underlined on impact printers) the first time they are used. These words and phrases are defined in a glossary in the fourth section of this document.

1.1 What is Community Memory?

CM is a system for the unmediated sharing of information for use by the general public. Anyone can become a *user* of CM. As a user, you can put *messages* into CM, or look at messages put into CM by others. A message is a short piece of text containing someone's ideas or observations on a particular subject.

Putting a message into CM is called *adding* the message. You can add a message that stands on its own, or as a *response* to another message. The user who adds a message to CM is called the message's *author*.

Users add and read messages through *public terminals*. The main focus of this document is how to use the public terminals.

A local Community Memory system consists of several public terminals and a single central computer called a *node*. The node stores all of the messages added through any of the public terminals. This means that a message added through one public terminal is available for reading on all other public terminals attached to that node.

A full implementation of CM consists of many nodes which exchange data with one another. The messages stored on a node may be *originals*, which are added through local public terminals, or *copies*, which are received from other nodes. Users may only read messages stored on the node to which their public terminal is attached, but these may include copies of messages originating anywhere in the network.

network.

1.2 The Public Terminals

A public terminal consists of a *keyboard*, *screen*, *coinbox*, and optional *printer*.

You use the keyboard to cause CM to do things for you. You do this by pressing one or more *keys* on the keyboard. The keyboard contains a standard set of *typewriter keys*, including *RETURN*, for entering text, *arrow keys* for moving things displayed on the screen, and the special keys *DELETE*, *INSERT*, *BACKSPACE*, *CLEAR*, *HELP*, *SELECT*, *UNDO*, and *MENU*.

The terminal also has several *programmable function keys* which you can assign to any commonly used function.

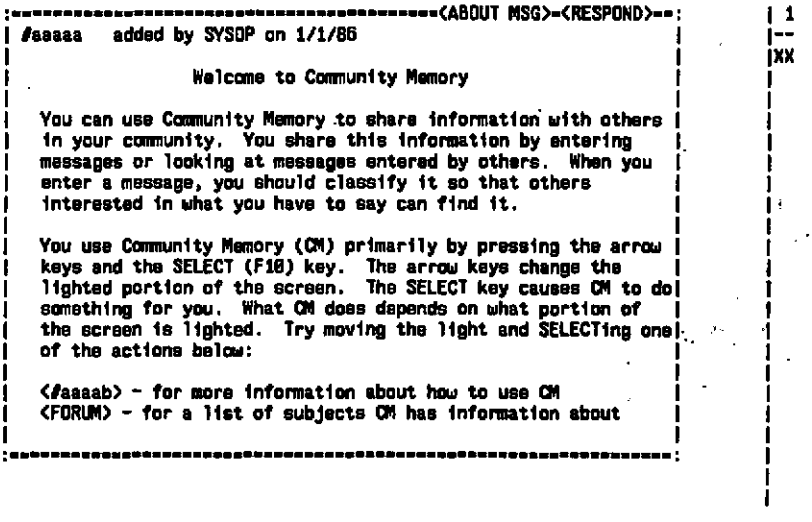
2. Basic Functions

This section describes the basics of how to use a CM public terminal.

2.1 Getting Started

If you approach a public terminal when no one is using it, you will find it displaying a *teaser*, which is a moving display designed to attract attention and induce people to try using CM. If you press any key on the keyboard, the teaser stops and your *session* with CM begins. Your session will continue until you tell CM you are through, or until 2 minutes go by without you pressing any keys. To prevent this from taking you by surprise, CM will warn you to press a key 30 seconds before it ends your session.

During your session, CM displays a list of messages called the *browse list* on the screen for you to read. When your session starts, the browse list contains only one message, called the *opening message*. When the opening message is displayed, the screen will look like this:



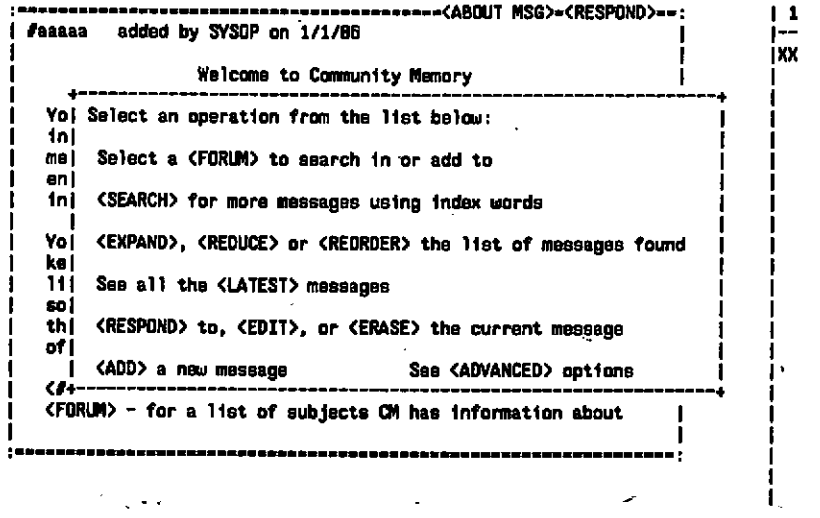
The opening message gives you the basic information you need to use CM.

The words "ABOUT MSG" in the opening message will be *highlighted*. By using the arrow keys, you can move this highlight around the screen, to any other phrase between "<" and ">" characters. These phrases that you can highlight are called *buttons*. Each button is a command to CM. If you press the SELECT key on the keyboard, CM does what the highlighted button tells it to do. This is called *selecting a button*. Note that buttons (which are on the screen) and keys (which are on the keyboard) are very different things, but are used in similar ways. PRESSING a KEY or SELECTING a BUTTON are both ways of telling CM to do something.

If you press INSERT followed by a programmable function key while a button is highlighted, that function key can then be used in place of that button.

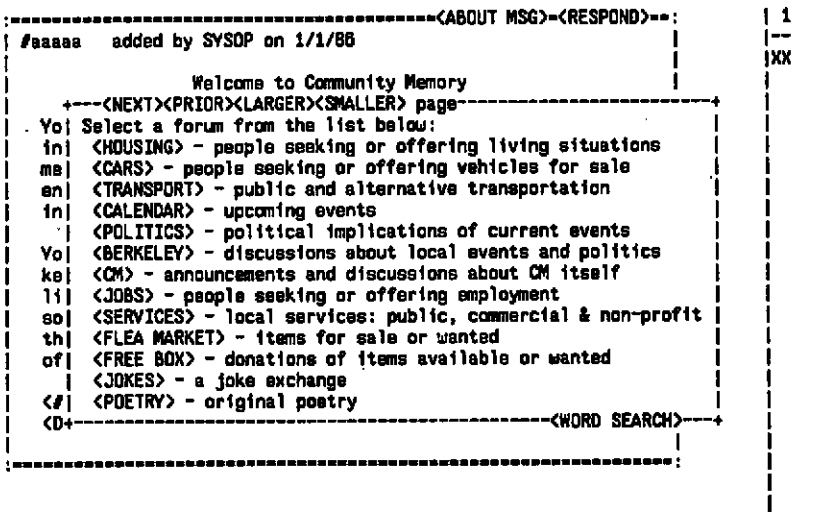
2.2 Searching for Messages

You begin searching for messages by selecting the FORUM button. If you want to search for messages and the opening message is not on the screen, you can press the MENU key. The MENU key can be used at any time to put the most important buttons onto your screen. If you pressed the MENU key while looking at the opening message, your screen would look like this:



The box drawn on your screen by the MENU key is called a *dialog box*. The FORUM button (the first button in the dialog box) will be highlighted. As before, you can move the highlight around to other buttons in the box using the arrow keys, but you can't move the highlight outside the box. Once you have a dialog box on your screen, you must do what the box tells you (in this case, "Select an operation from the list below"). If you change your mind and want to get out of a dialog box without doing what it says, press the UNDO key.

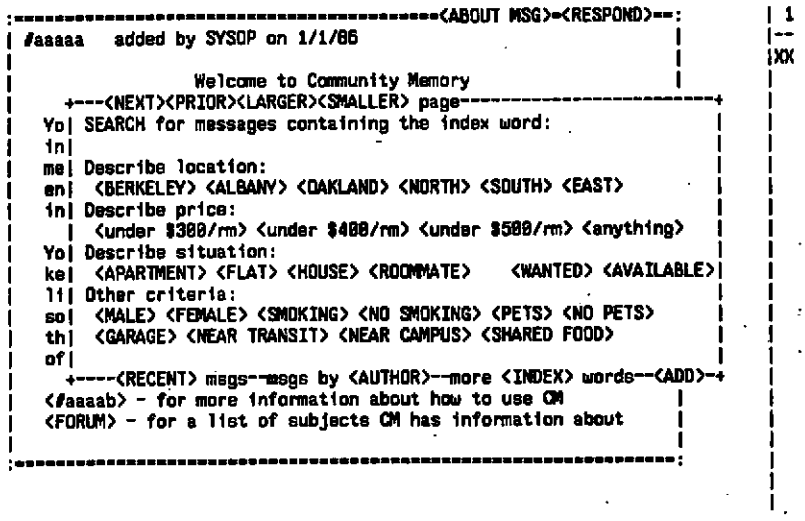
After you select the FORUM button, your screen will look like this:



This screen also contains a dialog box, this one listing all of the *forums* available on this CM node. A forum is a collection of messages on a particular subject. You begin searching for a message by choosing a forum in which to search.

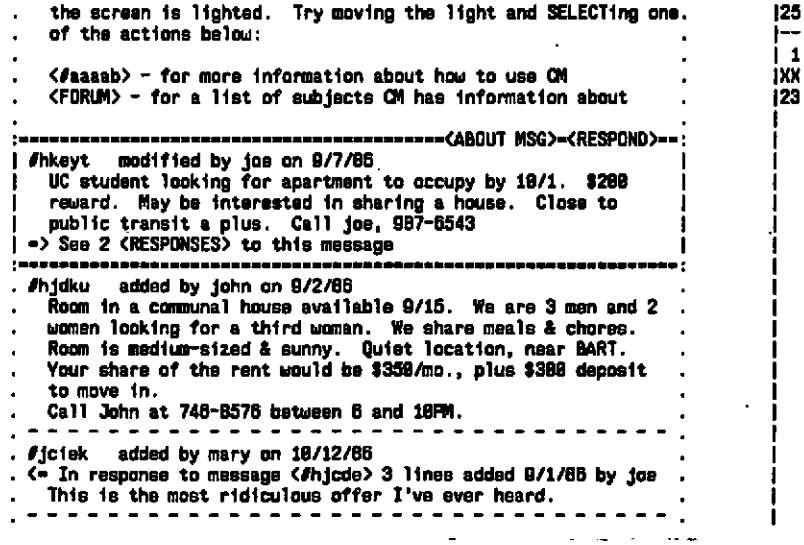
CM contains more forums than it can list on a single screen. You can move back and forth through the list of forums one screenful at a time by selecting the PRIOR and NEXT page buttons. The LARGER and SMALLER page buttons expand and shrink the dialog box itself so that each page contains more or fewer forums. The WORD SEARCH button is described in the Advanced Functions section.

After you select a forum, CM will display another dialog box in which you further describe what you are searching for. The contents of this dialog box depend on the forum you are searching in. If you had chosen HOUSING, for example, your screen would look like this:



The buttons in the box correspond to *index words* that authors may have chosen to describe their messages. Selecting one of the buttons within the dialog box will put all the messages whose authors chose that index word into your browse list. Buttons in the bottom line of the dialog box are described in the Advanced Functions section, except for the ADD button, which is described in the Adding Messages section.

After you select an index word button, your screen will look like this:



This is a display of your browse list (just like the first display) except that now it contains more than one message. The opening message is still at the top of the list, but now most of it has scrolled off the top of the screen to make room for new messages. The number in the upper right corner of the screen (25) tells you how many messages you have in your list. The 1 and 23 just below this number indicate that there is one message above the current message in the list and 23

messages below it. In the list of messages itself, the current message is indicated by the heavier border.

The highlight is always in the current message. Initially, it will be on the ABOUT MSG button. If you attempt to move the highlight up or down off of the current message, the current message changes to the previous or next message in the browse list. If the current message is not completely on the screen, CM scrolls the screen to bring it completely into view. By moving the highlight repeatedly, you can scroll through the entire list of messages.

If a message is longer than a specified maximum, only a portion of it will be displayed. In this case, when the message becomes the current message, the border around the message will include buttons for seeing other pages of the message or adjusting the amount of space the message occupies on the screen.

If you try to move the highlight off of the browse list with the right arrow, it will highlight the "XX" on the right side of the screen. While the "XX" is highlighted, the up and down arrows will quickly change the current message and scroll through the list of messages. A left arrow will return the highlight to the browse list.

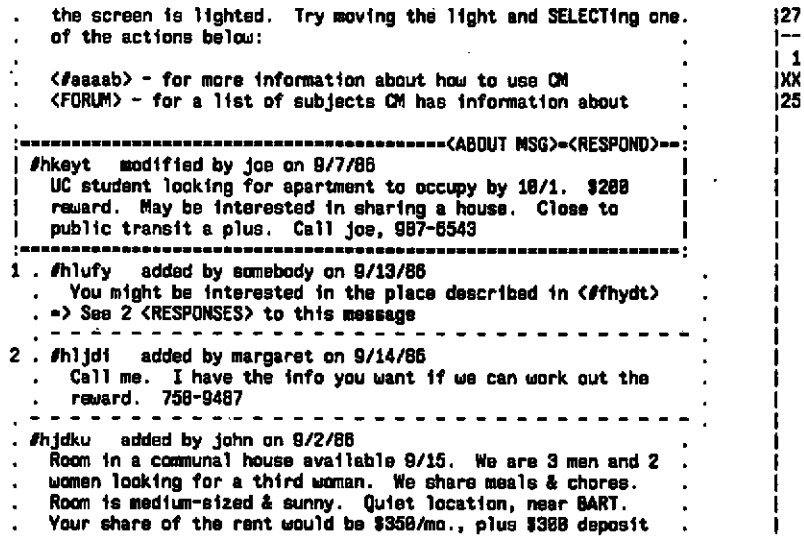
The first line of each message contains information about the message itself. The five letters following the "#" at the start of the line is a code that uniquely identifies the message. This code is called the *tag* of the message. The tag is assigned to the message automatically when the message is added to CM. If you remember the message's tag, CM will always be able to find the message for you again.

The first line of each message also contains the name of its author. These *pen names* are made up by the author when the message is entered. Pen names are protected by passwords to prevent people other than the author from using the pen name, but several users could agree to share a pen name, or a single user could have several pen names.

The first line of the message also gives the date that the message was added or the date of the most recent change to the message.

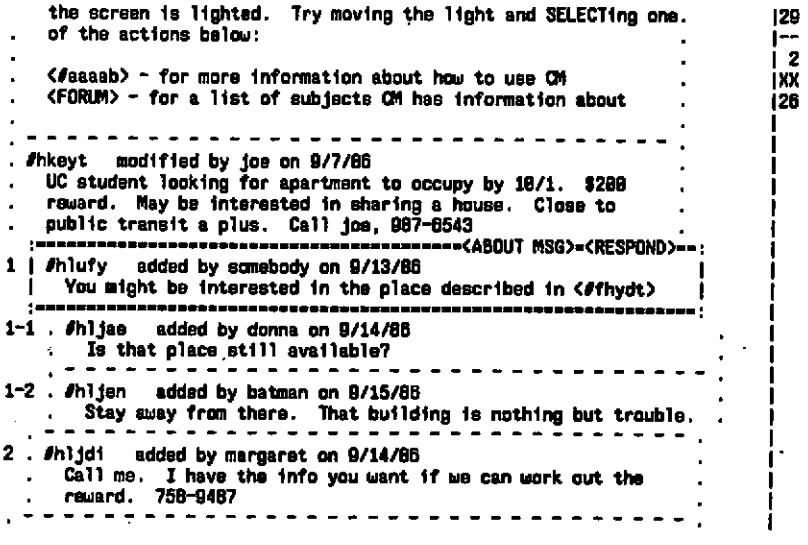
If people have written responses to messages, or if a message is itself a response, it will contain a line that tells you so. The line at the end of the current message (#hkeyt) tells you that two people have responded to that message. The line contains a button which you can select to see their responses. The second line of the bottom message on the screen (#jciek) tells you that that message is a response to another message. Selecting the button in that line will show you the message that #jciek responds to.

Responses are shown indented under the message they respond to. If you select the RESPONSES button in message #hkeyt, the screen will look like this:



Note the *response numbers* added to the left of the indented responses. Note also that the line containing the button for displaying the responses disappeared when the responses were displayed.

Responses can have responses of their own. These are displayed by further indenting. If you select the RESPONSES button in message #hlufy, the screen would look like this:



If responses are nested deeply enough, they may be indented far enough to the right to not show up completely on the screen. If this is the case, the entire screen will be shifted to the left sufficiently far to center the current message. If the screen is shifted to the left, it will be done in such a way that the response numbers will have dashes instead of digits in the leftmost column.

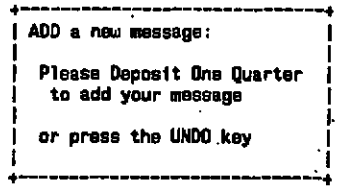
You can use the response numbers to move quickly between responses. If you try to move the highlight off the left edge of the current message (#hlufy), it will highlight the response number "1". If you then press the down arrow, the highlight will move to the response number "2" to the left of #hljdi, which then becomes the current message. Moving up and down on the response numbers always moves you to responses with the same or less indentation.

Where response numbers contain dashes, you have even more flexibility in how you can use them. If #hljae were the current message, trying to move the highlight off of the left edge of the message would highlight the second "1" in the response number "1-1". Up and down arrows at this point would move the highlight to the response numbers of adjacent messages. A left arrow would move the response number to the first "1" in the "1-1". Up and down arrows at this point would move the highlight to the response numbers "1" and "2" (the adjacent messages at the same indent as the highlight).

2.3 Adding Messages

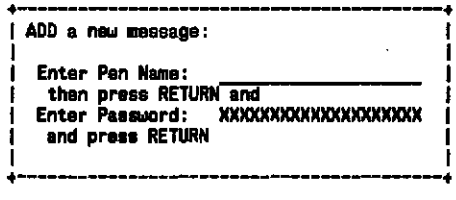
You begin adding a message by selecting the ADD button. There is an ADD button in the dialog box that CM displays when you press the MENU key.

When you select the ADD button, CM displays a dialog box asking you to deposit a quarter. At this point, you must either deposit a quarter or press the UNDO key. Pressing UNDO cancels the add and returns you to your browse list. If you deposit the quarter the add proceeds.



If you have not already used a pen name during this session, CM asks you for a pen name. If you have already used a pen name, CM allows you to enter your message at this point.

CM asks for a pen name by displaying a dialog box prompting you for a name and password.



When you enter the pen name and password and press RETURN, CM checks the pen name to see if it has been used before. If the pen name hasn't been used before, CM assumes you are trying to create a new pen name and asks you to

confirm the password you just typed.

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| That is a new pen name.  If you want to claim |
| this name as your own, re-enter your password. |
|                                               |
| or press UNDO to enter another pen name.      |
|                                               |
|  Pen Name:          King Arthur               |
|                                               |
|  Enter Password:    XXXXXXXXXXXXXXXXXXX       |
|   and press RETURN                            |
|                                               |
+-----------------------------------------------+
```

If the pen name has been used before and the password doesn't match, CM presents an error message and asks you to try again:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Sorry!  That pen name and password don't match! |
|     Perhaps you mis-typed the password.       |
|                                               |
| Please try again....                          |
|                                               |
|  Enter Pen Name:  ____________________        |
|   then press RETURN and                       |
|  Enter Password:   XXXXXXXXXXXXXXXXXXXX       |
|   and press RETURN                            |
|                                               |
+-----------------------------------------------+
```

Once CM has gotten a valid pen name, it displays an empty message for you to fill in. The empty message is placed in the browse list after the current message. The empty message then becomes the new current message. The screen will then look, for example, like this:

```
.   the screen is lighted.  Try moving the light and SELECTing one.      |26
.   of the actions below:                                        .      |--
.                                                                .      |
.   <#aaaab> - for more information about how to use CM          .      | 2
.   <FORUM> - for a list of subjects CM has information about    .      |XX
.                                                                .      |23
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - .      |
. #hkeyt   modified by joe on 9/7/86                             .      |
.   UC student looking for apartment to occupy by 10/1.  $200    .      |
.   reward.  May be interested in sharing a house.  Close to     .      |
.   public transit a plus.  Call joe, 987-6543                   .      |
:==============================================<FINISHED>=<ERASE>==:      |
| <AUTHOR>: King Arthur                      <EXPIRES>: 12/1/86  |      |
|                                                                |      |
:================================================================:      |
. #hjdku   added by john on 9/2/86                               .      |
.   Room in a communal house available 9/15.  We are 3 men and 2 .      |
.   women looking for a third woman.  We share meals & chores.   .      |
.   Room is medium-sized & sunny.  Quiet location, near BART.    .      |
.   Your share of the rent would be $350/mo., plus $300 deposit  .      |
.   to move in.                                                  .      |
.   Call John at 746-8576 between 6 and 10PM.                    .      |
. - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - .      |
. #jciek   added by mary on 10/12/86                             .      |
. <= In response to message <#hjcde> 3 lines added 9/1/86 by joe .      |
```

The *cursor* is on the blank line of the message, allowing you to type your message

into CM. The message has not yet been assigned a tag, but has been assigned a pen name and expiration date. Selecting the AUTHOR or EXPIRES button allows you to change these values. Selecting the ERASE button will present a dialog box which looks like this:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Select an option below...                     |
|                                               |
|  <ERASE> the new message (returns your quarter)|
|  Continue <EDITING> the new message           |
|  <STORE> the message (CM keeps your quarter)  |
|                                               |
+-----------------------------------------------+
```

The FINISHED button presents a similar dialog box, with the same options in a different order:

```
+-----------------------------------------------+
| ADD a new message:                            |
|                                               |
| Select an option below...                     |
|                                               |
|  <STORE> the message (CM keeps your quarter)  |
|  Continue <EDITING> the new message           |
|  <ERASE> the new message (returns your quarter)|
|                                               |
+-----------------------------------------------+
```

From either box, selecting EDITING returns you to editing the message, and selecting ERASE removes the message from CM and from the browse list, and returns your quarter.

If you select STORE, CM asks you to select index words that describe your message. CM will ask you to select these words from a dialog box that looks similar to the one you use for searching. If you are in the HOUSING forum, the dialog box might look like this:

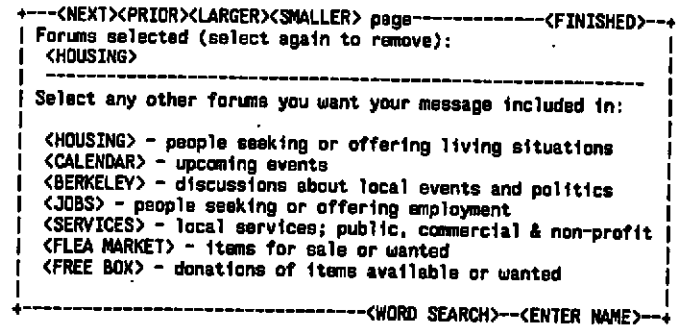
```
+-------------------------------------------------<FINISHED>--+
| INDEX words selected (select again to remove):              |
|  <BERKELEY> <ALBANY> <$400-500/rm>                          |
|  -----------------------------------------------------------|
| Select up to 7 more words from the list below:              |
|                                                             |
| Describe location:                                          |
|  <BERKELEY> <ALBANY> <OAKLAND> <NORTH> <SOUTH> <EAST>       |
| Describe price:                                             |
|  <under $300/rm> <$300-400/rm> <$400-500/rm> <over $500/rm> |
| Describe situation:                                         |
|  <APARTMENT> <FLAT> <HOUSE> <ROOMMATE>    <WANTED> <AVAILABLE>|
| Other criteria:                                             |
|  <MALE> <FEMALE> <SMOKING> <NO SMOKING> <PETS> <NO PETS>    |
|  <GARAGE> <NEAR TRANSIT> <NEAR CAMPUS> <SHARED FOOD>        |
+-----------------------------more <INDEX> words--------------+
```

You should select index words from the box that describe your message, up to the maximum number allowed. As you select a button, it is copied to the top part of the box. The top of the box is your record of the index words you have selected. Selecting an already selected word causes it to be un-selected and to disappear from the top part of the dialog box. When you have selected the best words for

describing your message, select the FINISHED button.

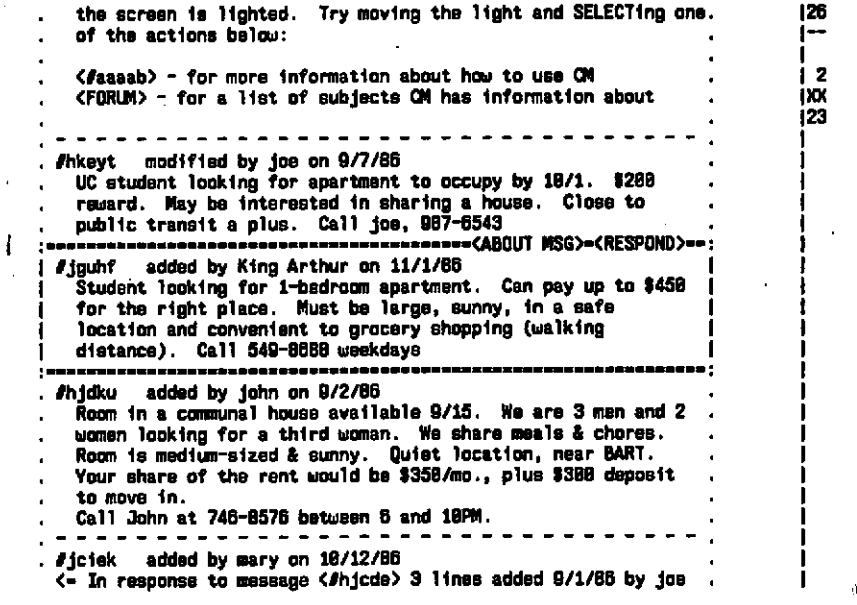
The INDEX button at the bottom of the box is explained in the Advanced Functions section.

When you select FINISHED, CM examines the index words you have chosen to see if your message might belong in any forum other than the one you are currently working in. If you have used index words that are associated with any other forums, CM presents you with a list of those forums and allows you to include your message in them as well. The list appears in a dialog box that looks like this:



Select buttons for any relevant forums, and then select FINISHED. As with index words, you can undo mistakes by selecting them again. The WORD SEARCH and ENTER NAME buttons are described in the Advanced Functions section.

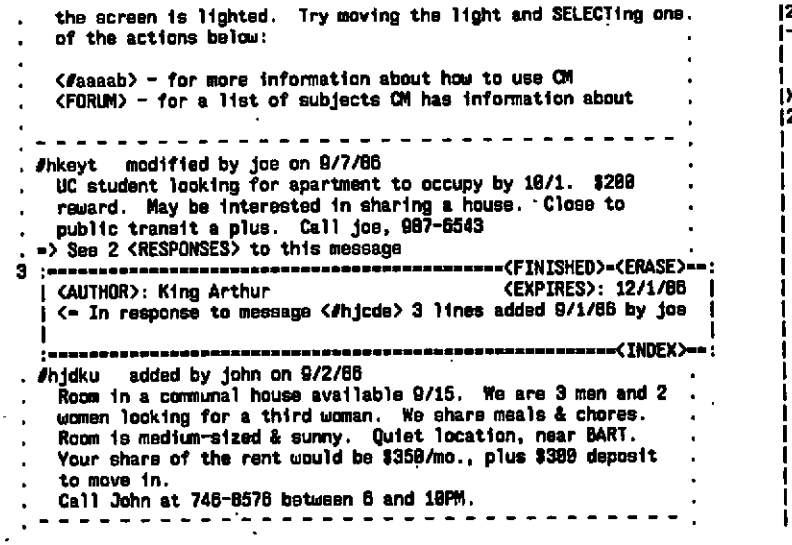
After you have selected index words and forums for your message, it will be assigned a tag and displayed in the browse list like any other message:



2.4 Responding to Messages

Responding to messages is very similar to adding a new message. You can only respond to a message when it is your current message. You begin by selecting the RESPOND button in the border of the message. CM will ask for a quarter and, if necessary, a pen name, just as it does when you are adding.

When CM displays the empty message for you to fill in, it will be indented immediately beneath the message you are responding to, and will contain the appropriate response number. It will also contain a line indicating that it is a response:



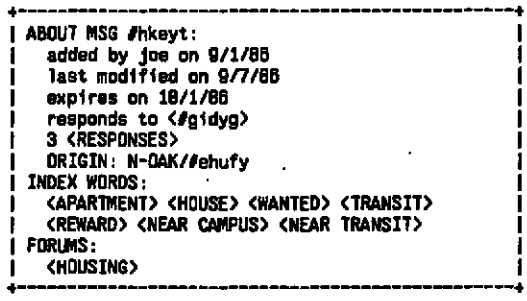
When you select the ERASE or FINISHED buttons, CM displays a dialog box as before, but selecting the STORE option stores the message immediately without adding index words. To add index words, you must select the INDEX button in the message border. The INDEX button takes you through the index word assignment like STORE did when you were adding.

3. Advanced Functions

The following functions allow you to make more effective use of CM. They allow you to keep information that you have entered up to date, find information more easily, and collect together information that you have found for others to use.

3.1 The ABOUT MSG button

The border of the current message always contains an ABOUT MSG button (unless you are editing the message). Selecting the ABOUT MSG button provides you with more information about where the message came from and how it is classified than is available in the first line of the message. Selecting the ABOUT MSG button displays a dialog box that looks like this:



The date added, the expiration date, the index words, and the forums are always present. The last modified date is present if the message has been changed since it was entered.

If a message is a response or has responses, the appropriate lines will be present. Selecting the buttons on these lines will have the same effect as selecting the corresponding lines in the message itself, except that these lines will always be available; they do not disappear once the related messages are displayed.

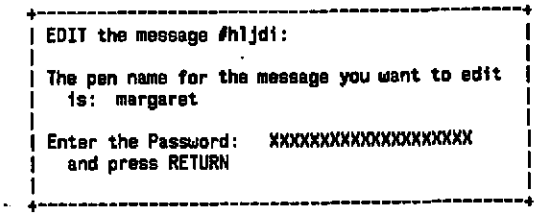
The ORIGIN line is present only if the message is a copy of a message from another node. This line gives the node on which the message was entered and the tag assigned to the message on that node.

3.2 Editing and Erasing Messages

If you are the author of a message, you can edit or erase that message. You first make the message to be worked on the current message. Then press the MENU key and select the EDIT or ERASE button from the menu displayed. Further details are given below.

Messages can only be edited or erased on the same node they were originally entered on. If the ABOUT MSG box contains an ORIGIN line, the message was entered on another node and cannot be edited or erased. The reason for this is that your pen name and password are only known by the node you first used them on. Thus you have no way of proving to any other node who you are. In fact, two different users on two different nodes could use the same pen name without conflict (eg. you could have a "nancy" in Berkeley and another "nancy" in Albany).

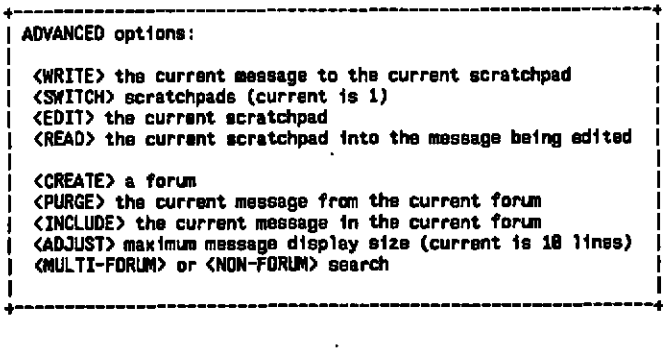
3.2.1 Editing a Message When you ask to edit a message, CM checks to see if the last pen name you used matches the one on the message. If the pen names don't match, or you haven't yet used a pen name in this session, CM presents a dialog box asking you for the password.



When password has been validated, CM will ask you for a quarter unless you have added or edited this message already during this session. Then the message is displayed as it was when you added it (AUTHOR and EXPIRES are buttons). The border contains FINISHED, ERASE, and INDEX buttons that behave as when you add a response.

3.2.2 Scratchpads CM provides nine areas called *scratchpads* for storing text. One important use of these scratchpads is for moving text while adding or editing messages. These scratchpads are numbered 1 through 9. One of them is always selected as the *current scratchpad*. The current scratchpad is initially 1.

To use the scratchpads, press the MENU key and select the ADVANCED button. CM will display a dialog box containing a menu of advanced options:



The WRITE button writes the text of the current message into the current scratchpad. The SWITCH button causes CM to prompt you for a new current scratchpad number (note that it also displays the old number). The EDIT button displays a dialog box showing the contents of the current scratchpad and allowing you to edit it. The border of the dialog box contains a FINISHED button which returns you to your browse list.

The READ button only appears if you are adding or editing a message. Selecting this button reads the content of the current scratchpad into your message.

As an example of how to use the scratchpads, assume you wanted to move a block of text in a message you were editing. First, you would select WRITE to save the message in the scratchpad. Then delete the block of text from its old position. Select EDIT to see the copy of the message in the scratchpad, and delete everything but the block you wish to move. Select FINISHED to return to editing the message. Finally, move the cursor to the place you want to insert the block

and select READ.

You can use similar techniques to move text from one message to another. You can copy text out of any message, not just the ones you can edit.

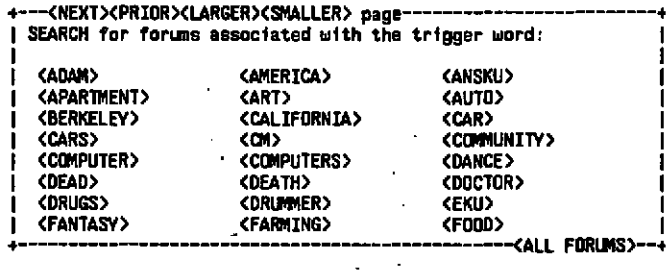
3.2.3 Erasing a Message When you select the ERASE button, CM presents a dialog box asking you to confirm the operation. As in editing, you will be prompted for a password if you have not been using the matching pen name. After completing both of these checks, CM erases the message from the database.

3.3 Putting Buttons in Messages

You can type buttons into the text of a message by enclosing a string of characters between "<" and ">" characters. What the button does depends on the enclosed character string. See the Button Definition Language section in the Appendices for more information.

3.4 Searching for Forums

When CM presents a list of forum names to pick from, the border of the dialog box will contain a WORD SEARCH button. If you select this button, CM replaces the list of forum names with a list of index words associated with forums (called *trigger words*).



Trigger words are listed in alphabetical order. When you select a trigger word, CM replaces the trigger word list with a list of the forums associated with that trigger word. You can then select a forum from this shorter, more relevant list.

If the reduced list is not to your liking, you may select WORD SEARCH again to come up with a different list. If you want to return to the full list, select the ALL FORUMS button in the border of the dialog box containing the trigger word list.

The border of the dialog box containing the forum list also contains an ENTER NAME button. Selecting this button enables you to type in the name of the forum you want without having to find it in the list.

3.5 Working with the Browse List

The Basic Functions section of this manual describes one way to get messages from a particular forum with a particular index word into your browse list. You invoke this function with the FORUM button.

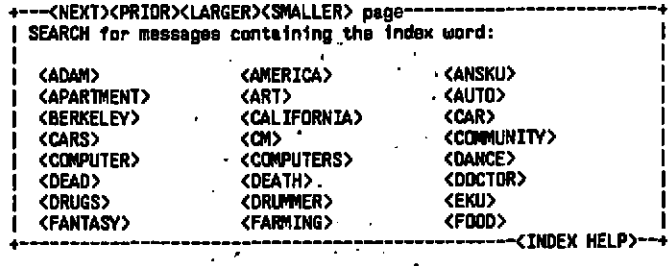
There are many more sophisticated ways to use your browse list. As you bring messages into your browse list by index word, some will be relevant to you and others will be irrelevant. You can use browse list functions to collect all possibly relevant messages, and then to find and eliminate most irrelevant ones. Once you have a reasonable number of messages, you can include and exclude messages individually, or move messages around in the list.

When using these functions, it is helpful to think of the browse list as divided into two parts. The messages above the current message should be thought of as the messages you have decided are worth looking at further. The current message and those below it should be thought of as the messages that still need to be sorted out. When searching, you add batches of raw messages to the list, weed out irrelevant ones, and move the current message down to include the filtered messages in the top part of the list.

3.5.1 EXPANDing the Browse List The Basic Functions section of this manual describes how to use the FORUM button to select a forum and search within it by index word. If you want to search using another index word in the same forum, you can do this by selecting the SEARCH button in the dialog box displayed by the MENU key.

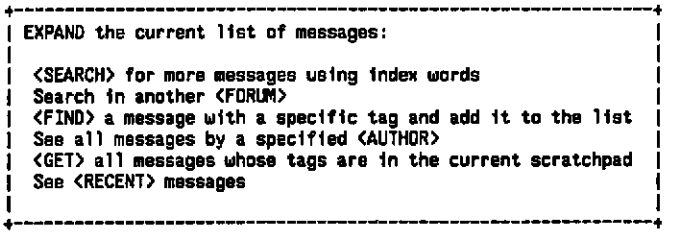
The SEARCH button displays the dialog box containing the important index words for the forum. Selecting an index word includes matching messages in your browse list after the current message. The bottom line of this dialog box contains additional special buttons. RECENT and AUTHOR are explained below. ADD was explained in the Basic Functions section.

The INDEX button displays a list of all the index words used in the forum in alphabetical order. Selecting an index word from this list has the same effect as selecting one from the SEARCH dialog box.



The INDEX HELP button returns you to the original SEARCH dialog box containing the suggested index words for the forum.

Further options for getting more messages into your browse list are available by selecting the EXPAND button in the dialog box displayed by the MENU key. This button displays a menu of all the different ways to add more messages to the browse list.



The SEARCH and FORUM buttons have already been described; they appear again on this menu for convenience. FIND displays a dialog box which prompts you for a tag, and then includes the message with this tag in your browse list after the current message. AUTHOR displays a dialog box which prompts you for a pen name, and then includes all messages by this author in your browse list after the current message. GET scans the current scratchpad for buttons containing tags and includes messages with these tags in your browse list after the current message.

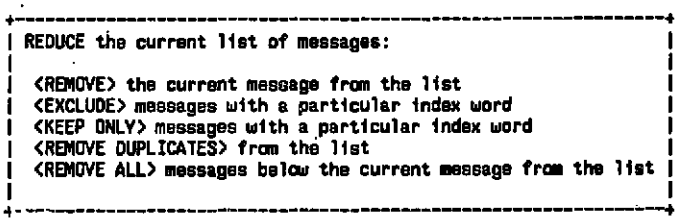
RECENT places all the messages in the current forum (or all the messages in the node, if no forum is currently selected) at the end of your browse list. Each time you select RECENT, it replaces messages from the last time you selected RECENT, but messages will only be replaced if they are after the current message and after the positionally last change that you made to your browse list. For example, if you selected RECENT, scanned through the first ten messages displayed, and then used FIND to insert a message in the eleventh position, another RECENT would replace the messages starting with twelve.

3.5.2 Multi-forum and Non-forum Searches If you want to search several forums simultaneously, or the entire database, you can do so by using buttons on the ADVANCED menu.

The NON-FORUM button de-selects your current forum, so that you are in the same state as when you started your session (i.e. without a current forum). Now any searches done before selecting another forum will search the entire database. This button then displays a list of all the index words as if you had selected the SEARCH button.

The MULTI-FORUM button displays a dialog box for selecting several forums. This dialog box looks like the one for choosing forums while adding a message. The forums already selected are displayed in the top portion of the box. After you have selected as many forums as you like, select the FINISHED button. CM then displays a list of all the index words as if you had selected the SEARCH button. Searches will find messages in any of the selected forums. Multi-forum searches with a lot of forums may be somewhat slower than other searches.

3.5.3 REDUCEing the Browse List Selecting the REDUCE button from the dialog box displayed by the MENU key gives you a list of options for removing unwanted messages from your browse list.



Selecting the REMOVE button removes the current message from the list. This is useful for individually eliminating messages you don't want to see again after you have narrowed down the browse list with other buttons. If the current message has comments, CM asks you if you want to remove all the comments as well. If you opt to keep the comments, they will be moved to the left margin and treated as independent messages. The "In response to" lines will re-appear in each of the comments.

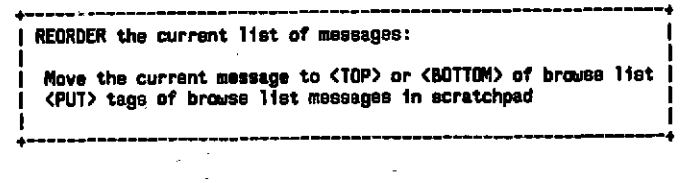
Selecting the EXCLUDE button presents an index word list like the one presented by SEARCH (except that the first line says "EXCLUDE messages containing the index word:"). Selecting an index word from this list removes all messages in the current forum containing that index word. Only messages at or below the current message are removed.

Selecting the KEEP ONLY button presents an index word list like the one presented by SEARCH (except that the first line says "KEEP ONLY messages containing the index word:"). Selecting an index word from this list removes all messages in the current forum but NOT containing that index word. Only messages at or below the current message are removed.

Selecting the REMOVE DUPLICATES button removes all messages below the current message which appear in the browse list in some earlier position as well.

Selecting the REMOVE ALL button removes all messages below the current message. CM will ask for confirmation before removing them.

3.5.4 REORDERing the Browse List Selecting the REORDER button from the dialog box displayed by the MENU key gives you a list of options for reordering the messages on your browse list.



The TOP and BOTTOM buttons move the current message to the top or bottom of the list. Usually, you would use TOP to save a message for later, and BOTTOM to put off deciding whether a message is relevant or not. (If you decide that a message is irrelevant, you would use REMOVE.) You cannot move a message to the bottom of the list if the bottom of the list is displaying RECENT messages.

The PUT button writes the tags of all messages in the browse list (except RECENT messages) into the current scratchpad in the form of buttons. By editing the scratchpad, you can change this list, and then read it back into the browse list with the GET button (see EXPANDing the Browse List). You may want to use the REMOVE ALL button before the GET button to avoid duplicating messages.

3.6 Special Forums

Messages and forums vary from one CM node to another, depending on the information needs of the users. However, some forums, messages, and pen names exist in every node.

The "Authors" forum contains a message for each pen name being used in the node. These messages are called *author descriptions*. One author description that will exist on every node is for the pen name *SYSOP*, which is reserved for the operators of the node.

The "Forums" forum contains a message for each forum in the node. These messages are called *forum descriptions*. Every node will contain forum descriptions for the forums "Forums", "Authors", and "Help". Additional forum descriptions are added when new forums are created (see below).

The "Help" forum contains messages explaining various procedures and conventions used in the node. "Help" will contain messages defining the special index word menus for each forum, the opening message displayed at the beginning of a session, and other help messages displayed by tags in the opening message. The opening message will always have the tag #aaaaa and will be authored by SYSOP.

3.6.1 Author Descriptions Author descriptions are added automatically to the Authors forum when a user first uses a pen name. Users may edit their author descriptions to change their passwords or to provide descriptive information about themselves. Author descriptions are easy to find, since they are always the oldest (last) message displayed by an AUTHOR search. An author description being edited appears as follows:

```
:=============================================(FINISHED)=(ERASE)==:
| #jguhe   added by King Arthur on 11/1/86                       |
|   I could describe myself here if I wanted to.                 |
:=============================================(PASSWORD)=(INDEX)==:
```

Note that there are no AUTHOR or EXPIRES buttons. This is because the AUTHOR cannot be changed and the message has no expiration date. The PASSWORD button allows you to change your password. The INDEX button allows you to assign index words to your author description (classifying yourself so that others can find you).

The text of the message is available for you to describe yourself and your interests, and possibly to leave contact information.

The ERASE button will only allow you to erase your author description if there are no other messages by you left in the node.

3.7 User-created Forums

You can create and manage your own forums to hold information on a topic of importance to you. The person creating a forum is called its *host*. A forum is operated as a public service to all CM users. A forum is a tool for helping the user community to organize its information.

3.7.1 Creating a Forum You create a forum by selecting the CREATE button from the ADVANCED function menu. CM presents a dialog box asking for the new forum name. If you respond with a valid (not previously used) name, CM creates a forum description message for you to edit. The forum description originally appears as follows:

```
:=============================================<FINISHED>=<ERASE>==:
| <AUTHOR>: mary                                                  |
| Forum Name: HOUSING                                             |
| <DESCRIPTION>:                                                  |
|                                                                 |
| <DEFAULT EXPIRATION>: 30 days                                   |
| <CHANGES TO>:                                                   |
| <CHANGES FROM>:                                                 |
:=================================================================:
```

If you select the ERASE button, CM returns to browsing without creating the forum.

The DESCRIPTION line is used to describe the forum in various lists. Selecting this button allows you to enter a description. The DEFAULT EXPIRATION line is used to calculate a default expiration date for messages added to this forum. Selecting this button allows you to change the value.

The CHANGES TO and CHANGES FROM lists specify forums on other nodes to exchange messages with. Selecting these buttons allows you to enter information into these lists. These lists are described further in the Networking section.

The body of the message is available for more detailed comments and notes about the forum.

The INDEX button allows you to assign index words to the forum description message. These index words can be used to find the message by searching in the "Forums" forum. They also serve as trigger words for the forum. You should use any words that might be used on messages that you want in your forum.

When you have finished editing the forum description, select FINISHED. CM will present you with a blank index word help message to edit. The index word help message is an empty message into which you type what you want to appear in the dialog box when users of this forum need to pick index words. For example, the index word help message to generate the dialog boxes used in the examples earlier in this document would appear as follows:

```
:=============================================<FINISHED>=<ERASE>==:
| #chuje   added by mary on 1/15/86                                |
|   Describe location:                                             |
|    <BERKELEY> <ALBANY> <OAKLAND> <NORTH> <SOUTH> <EAST>          |
|   Describe price:                                                |
|    <under $300/rm> <$300-400/rm> <$400-500/rm> <over $500/rm>    |
|   Describe situation:                                            |
|    <APARTMENT> <FLAT> <HOUSE> <ROOMMATE>    <WANTED> <AVAILABLE>|
|   Other criteria:                                                |
|    <MALE> <FEMALE> <SMOKING> <NO SMOKING> <PETS> <NO PETS>       |
|    <GARAGE> <NEAR TRANSIT> <NEAR CAMPUS> <SHARED FOOD>           |
:==================================================================:
```

When you select the FINISHED button, the creation of the forum is complete. The host of a forum can edit a forum description or index menu, in the same way as editing any other message. When being edited, a forum description appears as follows:

```
:=============================================<FINISHED>=<ERASE>==:
| #chujd   added by mary on 1/15/86                                |
| <AUTHOR>: mary                                                   |
| Forum Name: HOUSING                                              |
| <DESCRIPTION>: people seeking or offering living situations      |
| Index Word Help: <#chuje>       Purged Messages: <#chujf>        |
|   This forum is oriented toward making connections between       |
|   people looking for housing and those looking for roommates     |
|   or tenants.  Users of the forum are encouraged to exchange     |
|   information and opinions as responses, but messages using the  |
|   index words on the help message should essentially be housing  |
|   ads.  I'll try to keep old listings and nonsense out of the    |
|   forum.                                                         |
| <DEFAULT EXPIRATION>: 30 days                                    |
| <CHANGES TO>:                                                    |
| <CHANGES FROM>:                                                  |
| Work Areas: <#chujg>                                             |
:=================================================================<INDEX>==:
```

The forum name and the message tags cannot be changed. The "Index Word Help" tag refers to the message defining the index word help dialog box.

The "Purged Messages" and "Work Areas" tags refer to messages that are maintained by CM itself. These messages cannot be edited by any user. "Purged Messages" contains tags of messages explicitly removed from the forum by the host. "Work Areas" contain information used by CM to locate messages in forums more rapidly.

3.7.2 Managing a Forum Management of a forum consists of maintaining the list of trigger words and the forum description, and purging and including messages in the forum.

The trigger words and the forum description are what attract other users to your forum. By making them as complete and descriptive as possible, you will reach the largest possible audience while not interfering with those who aren't interested in the subject of the forum.

You can include any message you want into your forum by making that message the current message and selecting INCLUDE on the ADVANCED options menu. This is normally how you would pre-load a forum with information when you first create it.

On an ongoing basis, it is better to have users submit their messages to forums themselves, so that you don't have to hunt up all the relevant information. Your forum name will be presented to users who put any of your trigger words among their message's index words. They may then submit their message to your forum.

You may disagree with a user's choice of your forum. If you feel their message is sufficiently out of place, you may purge it from your forum. You do this by making that message the current message and selecting PURGE on the ADVANCED options menu. Purging a message removes it from your forum but does not erase it from the node. It will remain in any other forums, and can also be found via its tag or a non-forum search.

Messages purged by you will be recorded in the "Purged Messages" message associated with your forum. This prevents the author of the message from re-submitting it to your forum, and also allows other users to see what you have purged. This gives other users a practical record of your editorial decisions.

3.7.3 Networking If you own forums on two or more CM nodes, or want to cooperate with forum hosts on other nodes, you can connect forums together. Each forum to be connected must list the other forum names and node names in the CHANGES FROM and CHANGES TO lines of the forum descriptions. The CHANGES TO line lists those forums that are notified when messages are added, edited, or erased in the local forum. The CHANGES FROM line lists those forums from which such changes are copied into the local forum.

4. Appendices

4.1 Keyboard Details

This section explains the function of the keyboard in detail.

4.1.1 Arrow Keys What happens when you press an arrow key depends on whether you are editing text or not. When you are not editing text, the arrows move a highlight around between buttons. When you are editing text, they move a cursor through the text you are editing. A further distinction depends on whether you are editing a single line (as when you are typing an author name), or you are editing a message or scratchpad text, which can be several lines long.

4.1.1.1 Moving the Highlight When moving a highlight, the left and right arrows move the highlight left and right between buttons on the same line. Up and down arrows move to the next line above or below that contains buttons, and to the closest button on that line.

If the highlight is in a dialog box, arrow keys will not cause the highlight to cross the borders of the box. Instead, the highlight will wrap to the opposite side of the box.

If the highlight is on the browse list and on the first button on the line, the left arrow moves you to the response number (or does nothing if the current message has no response number). If you are on the last button on the line, the right

arrow moves you to the scroll bar. When the highlight is on the response numbers or scroll bar, the arrow keys can be used to move quickly through the browse list as described in the section on searching for messages.

If the highlight is on the browse list and up or down arrows cause the highlight to move to another message, the message moved to becomes the current message. If this message is not completely on the screen, the screen is scrolled (both vertically and horizontally) to display the entire message, up to the maximum allowable size for a message display.

4.1.1.2 Arrow Keys During Editing When editing, the arrows move the cursor up, down, left, and right within the editing area. The cursor can be moved all the way to the right margin of the editing area, even if no characters have been typed there.

Typing a left arrow at the left margin moves the cursor to the last typed character of the previous line. On the first line of the editing area, typing a left arrow at the left margin has no effect.

At the right margin, the right arrow moves to the first column of the next line. On the last line of the editing area, typing a right arrow at the right margin has no effect.

When editing a multi-line text (a message or scratchpad) any arrow key which causes the cursor to change lines also *reformats* (see below) adjacent lines.

Attempting to move the cursor out of the editing area with up or down arrows will have no effect, unless the message being edited contains buttons above or below the editing area. In that case, the cursor changes to a highlight and moves to the appropriate button.

4.1.2 Editing Keys The meanings of the editing keys also change between single-line and multi-line texts. In multi-line texts, CM attempts to fill paragraphs to keep words on as few lines as possible. Thus, changes to the edit line may affect neighboring lines.

The general rule for filling paragraphs is that if a line begins with a non-blank, and the first word on the line would fit on the end of the previous line, it is moved there. This implies that the first line of each paragraph begins with a blank (i.e. paragraphs are indented). A word is presumed to fit on a line only if there is enough room for both the word itself and a trailing blank.

During some editing operations, the filling rule may be temporarily violated, but only in the paragraph containing the cursor. Furthermore, paragraphs are always eventually brought back in conformity with this rule. The process of bringing a paragraph back into conformity with the filling rule is called reformatting the paragraph. If the character under the cursor moves during reformating, the cursor moves with it.

When editing any kind of text, the typewriter keys replace the character under the cursor with the character pressed, and move the cursor one character to the

right if it is not already in the rightmost column of the field. If the cursor is in the rightmost column and you are editing a single line, the last character is replaced and the cursor doesn't move.

Typing a character in the rightmost column of a multi-line text opens a blank line below the current line and moves the cursor on to it. In addition, if the old line contains a blank and the character typed was not a blank, the last word of the old line is wrapped down to the new line.

The INSERT key moves all characters under and right of the cursor one character to the right and inserts a blank under the cursor. The character in the rightmost column of the field is lost in single line editing. In multi-line editing, words at the right margin are wrapped down to the next line as necessary. If the next line is full, a new blank line is inserted below the current line and the word at the right margin is wrapped down to it.

The DELETE key deletes the character under the cursor and moves all characters to the right of the cursor one character to the left. The rightmost column becomes a blank.

The BACKSPACE key acts like the delete key, except it deletes the character to the left of the cursor. In the leftmost column of a multi-line edit, BACKSPACE behaves like left arrow.

The CLEAR key replaces all characters to the right of the cursor with blanks.

RETURN signals the completion of editing for single-line edits. For multi-line edits, RETURN creates a blank line after the current line, wraps all words to the right of the cursor (if any) to the new line, inserts a blank at the beginning of the new line, and puts the cursor to the right of the blank. This, in effect, inserts a paragraph boundary.

All above keys except RETURN auto repeat while being held down.

4.1.3 Other special keys The effects of the other special keys are:

HELP - Display a help dialog box. The contents of this box are derived from a message in the HELP forum. The message used depends on the context in which the HELP key is pressed (eg. pressing HELP while in a dialog box will display a help message explaining the purpose of the dialog box and what is required of the user). The message displayed may contain buttons that you can select to see additional help messages in the dialog box. The UNDO key or a FINISHED button in the border removes the dialog box from the screen.

MENU - Display a dialog box containing a menu of the main CM operations, from which you can select a button.

SELECT - Perform the operation that corresponds to the currently highlighted button.

UNDO - Undo the effects of the last change to the browse list. Multiple UNDOs will continue back in history. UNDO affects only which messages are in the browse list and which message is current. Scratchpad and message contents are unaffected. Pressing UNDO while in a dialog box will return to the previous dialog box, if any, or remove the dialog box from the screen and cancel the operation in progress.

4.2 Glossary

The following terms have special meanings in the context of Community Memory.

adding Creating a new message and storing it in CM.

arrow keys
4 keys on the public terminal keyboard labeled with arrows (up, down, left, right). Used for moving the cursor or highlight around on the screen.

author The user who adds a message to CM.

author descriptions
A message in the "Authors" forum. There is one author description for each author on CM.

BACKSPACE
One of the keys on the public terminal keyboard. Used for backing up the cursor while erasing mistakes.

browse list The list of messages currently being displayed for a user.

buttons
Areas of the public terminal screen between "<" and ">" characters. One of these buttons is always highlighted. Pressing the SELECT key while a button is highlighted causes CM to perform some action corresponding to that button.

CLEAR
One of the keys on the public terminal keyboard. Used to erase everything between the cursor and the end of a line or field while editing.

coinbox
A device attached to the public terminal that allows it to accept and return quarters under program control.

Community Memory (CM)
The system for public information exchange described in this document.

copies
Messages which duplicate messages originally entered on other nodes. CM makes copies so that people on one node can see what people on another node have to say.

current scratchpad
One of the 9 scratchpads that is selected for use in scratchpad operations.

cursor
A lighted box that covers a single character. Indicates the current position in a text when editing.

DELETE
One of the keys on the public terminal keyboard. Used to delete the character under the cursor while editing.

dialog box
A rectangular area on the screen that overlays the list of messages being displayed and in which some specific interaction between the user and CM takes place.

forum descriptions
Messages in the "Forums" forum. Each such message describes one of the forums on a CM node.

forums A collection of messages on a particular node.

HELP
One of the keys on the public terminal keyboard. Used to request more information about what to do in the current situation.

highlight
A lighted box covering more than one character. Indicates the button to be executed if the SELECT key is pressed.

host The user who created a forum and is responsible for managing it.

index words
Words assigned to a message to classify what it is about.

INSERT
One of the keys on the public terminal keyboard. Used when editing to insert space into a piece of text.

keyboard
Part of the public terminal which contains keys that the user can press.

keys Switches which make up the keyboard.

MENU
One of the keys on the public terminal keyboard. Used to display a dialog box containing commonly-used buttons.

messages
A piece of text entered by a user to express a thought, idea, reaction, or item of information. CM is a system for the storage, organization, and retrieval of such messages.

node
The computer which holds messages for a set of directly-connected public terminals. Nodes can be connected together to exchange data. This term is also sometimes used to mean the node computer and its public terminals together.

opening message
The initial help message displayed when a CM session starts. The tag of the opening message is #aaaaa.

originals
Messages entered through this node's public terminals. These are distinguished from copies, which are messages obtained from other nodes.

pen names
Names which users make up to identify themselves as authors of messages.

printer
An optional device in the public terminal which can make a paper copy of a message.

programmable function keys
Keys on the public terminal whose function can be changed by the user.

public terminals
The devices which allow users to enter and examine messages on CM.

reformat
Rearrange typed lines into paragraphs which occupy as few lines as possible.

response
A message entered to express a reaction to another message.

response numbers
Numbers displayed to the left of responses to show their interrelationship.

RETURN
One of the keys on the public terminal keyboard. Used to indicate that you are finished editing a single-line text, or to insert a paragraph divider into a multi-line text.

scratchpads
9 numbered ares for holding text during a session.

screen Part of the public terminal on which messages are displayed.

SELECT
One of the keys on the public terminal keyboard. Used to initiate the activity associated with the highlighted button.

selecting a button
Pressing the SELECT key while a button is highlighted.

session
A single interval of interaction between a user and a public terminal.

SYSOP A pen name reserved for use by the operators of a node.

tag
A five-letter code assigned to a message that is used to identify that message within the node.

teaser
An activity performed by a public terminal between sessions to attract the attention of potential users.

trigger words
The index words on a forum description message. These words are used to find the forums that a message might belong in.

typewriter keys
The keys on the public terminal keyboard that produce typewritten text when pressed.

UNDO
One of the keys on the public terminal keyboard. It is used to undo erroneous changes to the browse list and to back out of dialog boxes.

user A person who uses CM.

version 4
The version of CM designed to run on intelligent terminals. Version 1 is the original 1972 version. Version 2 is the version demonstrated at the 1983 Computer Faire. Version 3 is the version installed in Berkeley in 1984 using Soroc terminals and running under UNIX.

4.3 Button Definition Language

(to be provided)