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INTRODUCTION

Purpose Of This Manual

The purpose of this manual is to give detailed information on the layout, construction, configuration, and maintenance of the Oregon State University Computer Science Lab Logger version 1.0.2. Some of the information will be specific to the implementation in use at OSU. Most of the information is general to all implementations, with the OSU implementation providing examples of possible ways to configure the package.

With the information in this manual, an experienced HyperCard™ user should be able to configure a basic system for a specific lab utilization, do the weekly and quarterly maintenance tasks, and to modify and expand the basic implementation to better fit their own needs.

System Specifications

A minimum system should consist of a 1 meg. Macintosh with a hard drive. It is strongly suggested that a more powerful (faster) system be used. At OSU, we use a 4 meg. SE/30 running MultiFinder™.

What You Should Already Know

The CS Lab Logger is a system composed of several HyperCard™ stacks. Maintenance personnel should already be familiar with HyperCard™'s use of: Stacks, Backgrounds, Cards, Fields, and Buttons.

> **WARNING** - The CS Logger makes use of a modified Home Stack. HyperCard™ expects only one Home Stack, therefore the CS Logger will conflict with the use of regular HyperCard™ stacks. Going to "Home" from one of the basic HyperCard™ stacks (say Art Ideas) will open the CS Logger's Home stack, which starts up the Logger application.

Extensive use is made of the HyperTalk™ scripting language. Maintenance personnel need to know how to access and modify scripts and understand the hierarchical command structure of HyperTalk™.

If enhancements to the basic system are to be made, knowledge of how to edit Macintosh Resource files may be necessary. Mainly this will be necessary only for modifying button icons (see **Machine Icons** under **Configure the Logger**).
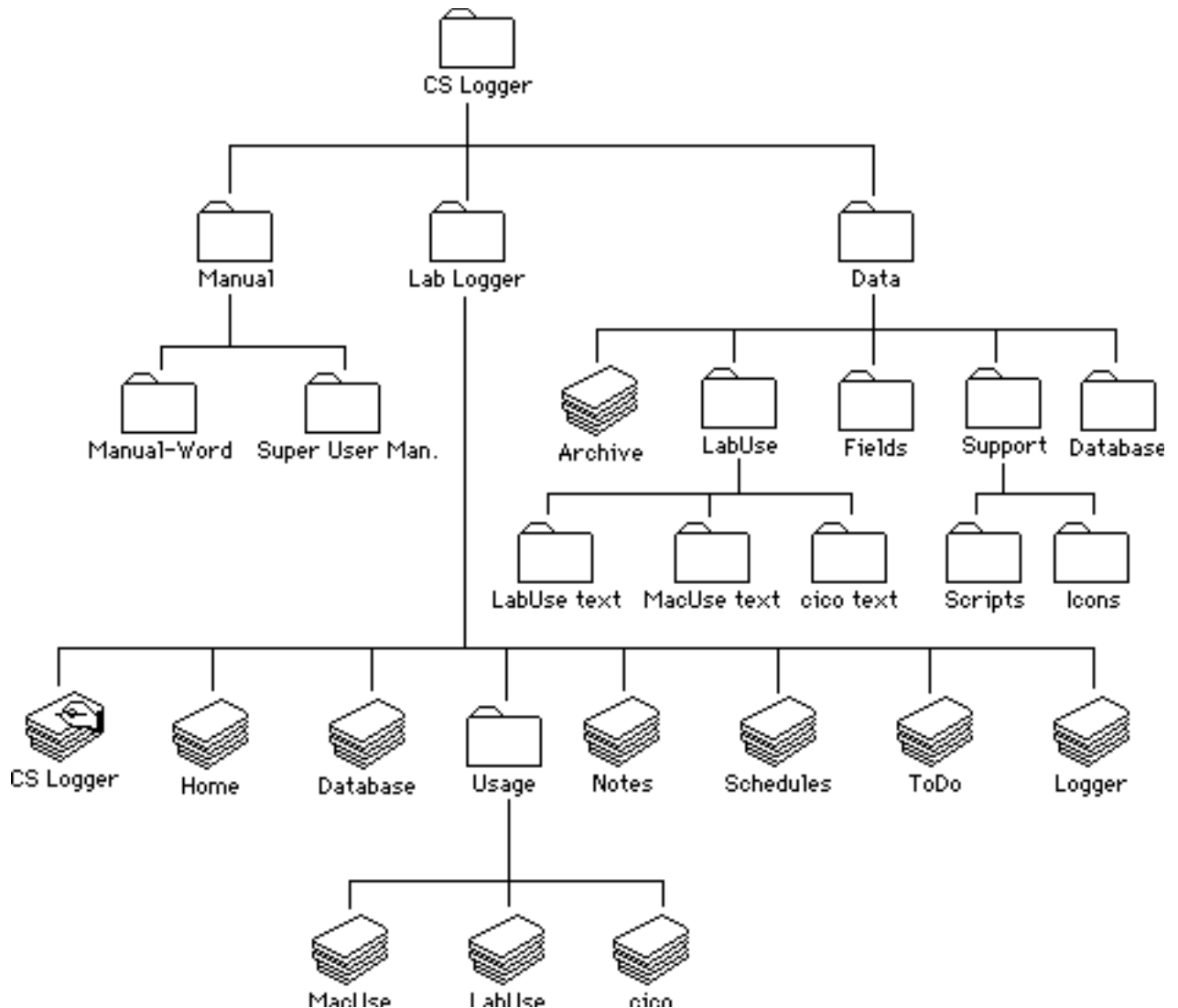
All Maintenance personnel should already be familiar with the basic operation of the Logger as outlined in the "**Lab Loggers General User's Manual**".

Folders And Stacks

Components of the CS Logger can be found in 3 folders:

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Lab Logger
Data
Manual.

The **Lab Logger** folder contains the **CS Logger** application (HyperCard™) and most of the stacks. This is the critical information that should be backed up weekly (see **Weekly Tasks**). In addition to the application, this folder contains :

Home   Stack containing the look up paths, access to utilities, and global scripts and resources.

Database   A database of lab user information.

Logger   Stack containing the Lab card, the individual machine cards, and the Configure card.

ToDo   A calender of upcoming events.

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Logging In As Super User

HyperCard™ lets the user select between five different levels of permission.

1. **Browsing**   Clicking on buttons and limited menu items.
2. **Typing**   Browsing, plus entering text in fields.
3. **Painting**   Typing, plus drawing on cards and backgrounds. Expanded menu items,
4. **Authoring**   Painting, plus the ability to create buttons, fields, cards, and stacks. Expanded menu items.
5. **Scripting**   Authoring, plus the ability to make and edit HyperTalk™ scripts.

Normally, the Logger operates at the **Typing** level. This is sufficient for the daily operation of tasks. There are numerous tasks and operations that only need to be performed for system maintenance. These operations are disabled and hidden during normal operation.

The standard HyperCard™ data protection scheme involves password protecting each stack to restrict access. As the Logger contains multiple stacks, the normal protection scheme would entail multiple password entry while a maintenance

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person flipped between stacks. It also makes the security wise practice of the periodic changing of passwords difficult, therefore it is less likely to be performed.

The standard HyperCard™ password protection scheme is not used in the Logger. Instead, supplying one password allows access to all levels of all stacks. Each maintainer is given their own password, and a log is automatically generated of *who* logged in *when*. The stock password for distribution is "secret". It is suggested that this is changed immediately (see below).
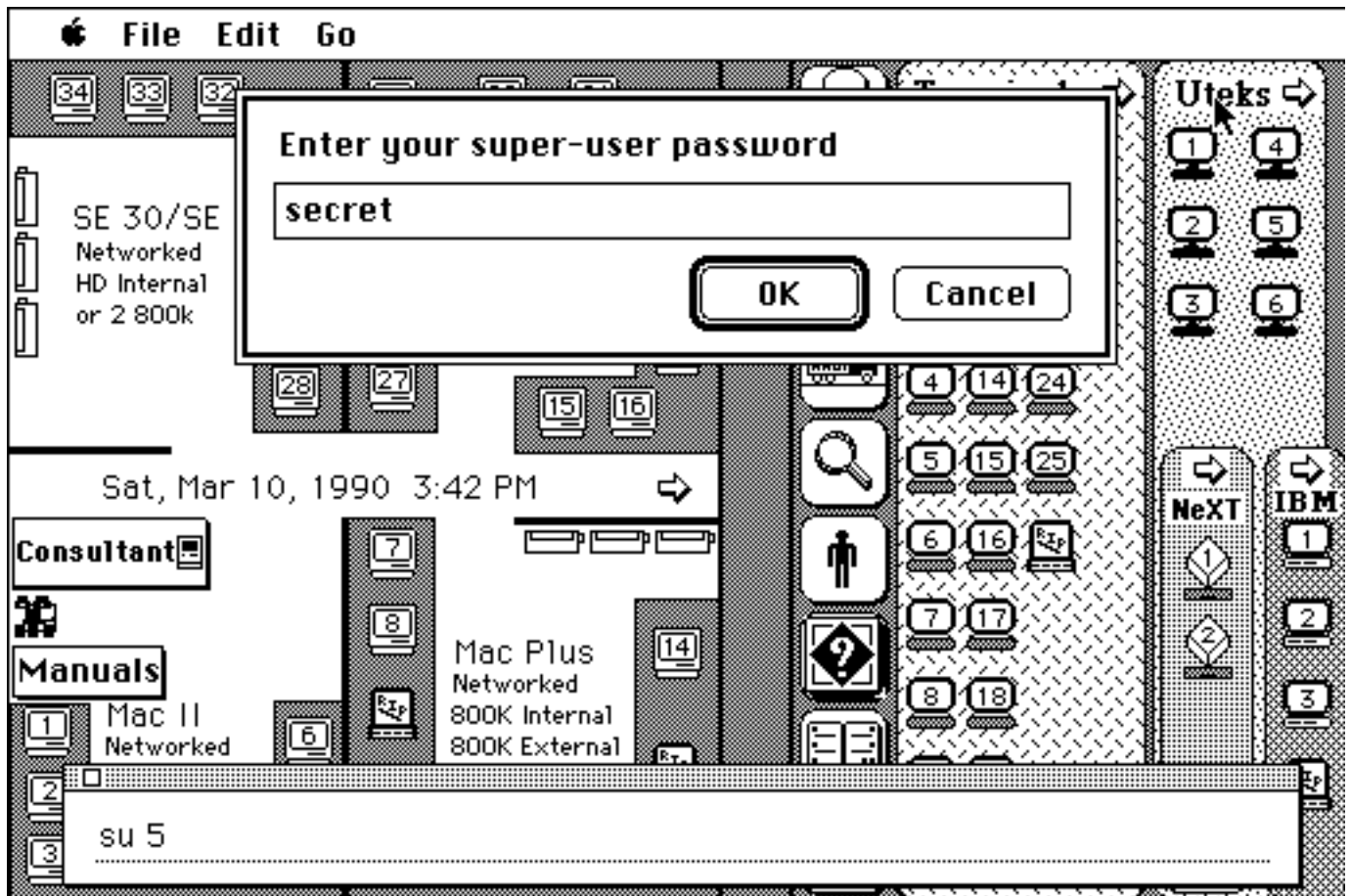
To get to the **Scripting** level, first you need to get to the password prompt. To do this, pull up the message window by typing a "⌘m". Entering "su 5" and hitting return will produce the password prompt window. Entering the password and hitting return should elevate the Logger to scripting level. The user can move to any level by giving the appropriate level as a parameter to "su" (i.e. "su 2" for typing, "su 4" for authoring), but levels 2 and 5 are the most useful.

An alternate method for reaching the scripting level is to hold down the command key (⌘) and selecting "Protect Stack…" under the File menu. This will take you to the "User Preferences" card of the Home stack. Select the desired level by clicking on the appropriate radio button. This will produce the password prompt window as before. Enter the password and away you go.

Each time a super user enters his or her password, the date, time and users name is recorded in the Super User Log. This is a scrolling field on the

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"User Preferences" card of the Home stack. This field is only visible when above the **Typing** level.

Changing Passwords

To add or delete passwords in the Lab Logger, it is necessary to modify the script of the Home stack. The encrypted password is stored as an integer in the "Check password" function of the Home stack script.

The first step in adding or modifying a password is to transform the proposed password into the encrypted integer. To do this, open the message window (⌘m) and type the command "getPassword". This opens a window prompting for the password. Enter the proposed password and hit return. The message window will now contain the integer which is the encrypted transformation of the password (see figure). This integer needs to be copied down. The Note Pad desk accessory is handy for this.

```
The encrypted integer for that password is 3932165314
```

To add the integer, you need to be at the **Scripting** (su 5) level and in the Home stack (⌘h). There are two ways to get to the Home stack script. One is by holding down the command and option keys while hitting the "s" key. the other is by choosing "Stack Info…" under the Objects menu, and clicking on the "Script…" button. Once in the script, you need to find the "Check password" function. This can be done by using the Find button of the script editor. Alterantly, as the function is at the end of the script, you can just scroll to the bottom of the script.

To add a new password, you have to add a line of the form:

"else if password is <integer> then put "<name>" into name"

where <integer> is the integer returned by the "getPassword" function and <name> is the individuals name. The easiest method is to copy one of the existing lines and substitute the new integer and name for the old ones. Changing an existing persons password means changing just the integer.

To disable an old password, just delete the line. It is a good idea to test the new password before deleting the old password. If you might want to re-enable a password at some later date, you can comment out the line by inserting two dashes in front of it (i.e. -- else if password …).

WEEKLY TASKS

There are three maintenance tasks that should be preformed at least once a week. These tasks are:

Printing the weekly machine usage graphs

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Printing Usage Graphs

It is necessary to be at the "su 3" level or higher in order to access and print the usage graphs. At this level, two extra buttons appear in the LabUse stack. These are:
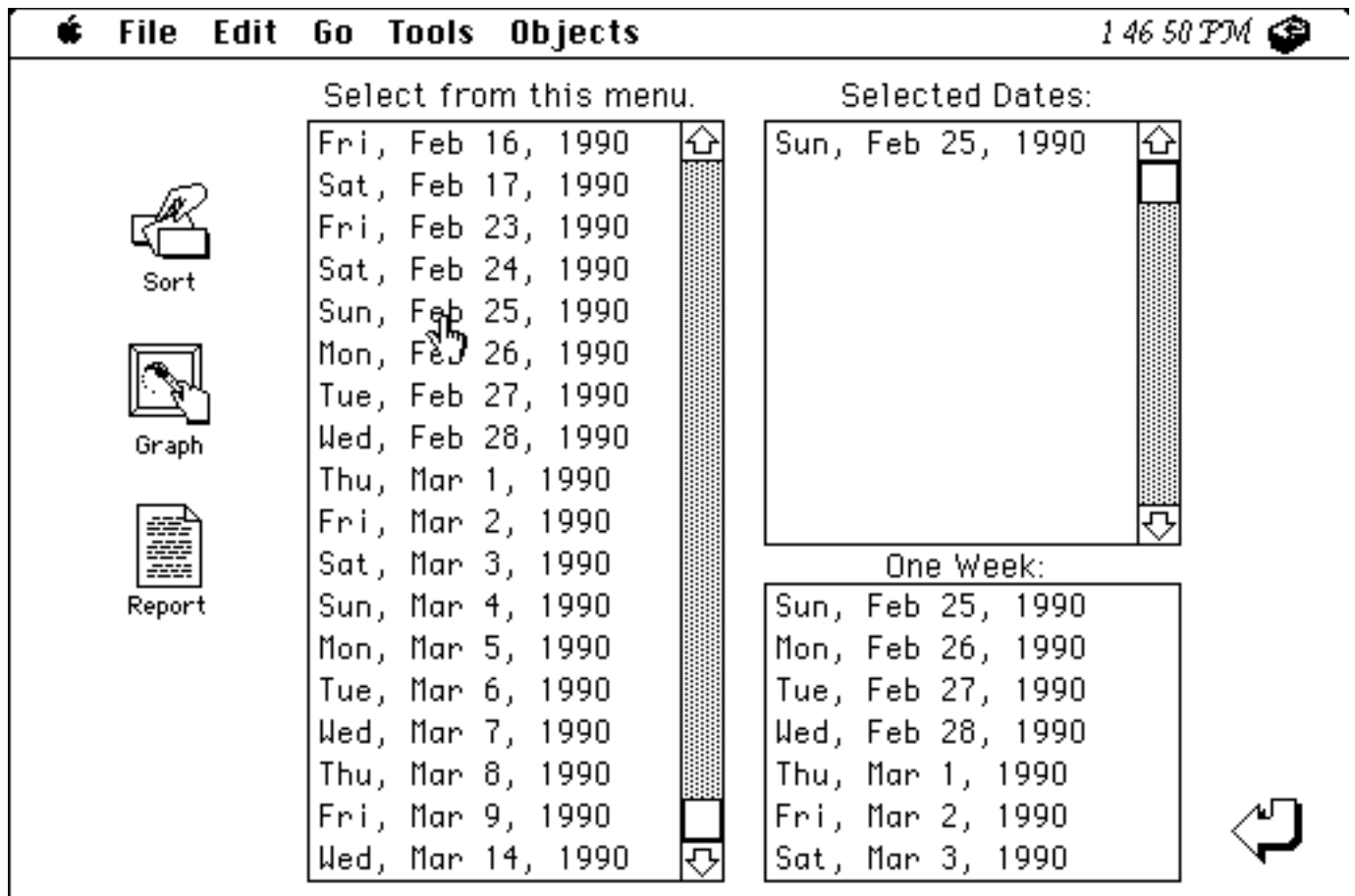
Report All   Generate a text report of times, machines, and percents

Select   Select the days to graph or report on.

The first step in printing the graphs is sorting the stack. Click the sort button.

The next step is to select the days to graph. Click on the select button. This takes you to a card with a list of the days to select from.

```
  File   Edit   Go   Tools   Objects                    1 46 50 PM

        Select from this menu.              Selected Dates:
        Fri, Feb 16, 1990                   Sun, Feb 25, 1990
        Sat, Feb 17, 1990
        Fri, Feb 23, 1990
  Sort  Sat, Feb 24, 1990
        Sun, Feb 25, 1990
        Mon, Feb 26, 1990
        Tue, Feb 27, 1990
        Wed, Feb 28, 1990
  Graph Thu, Mar 1, 1990
        Fri, Mar 2, 1990
        Sat, Mar 3, 1990                         One Week:
        Sun, Mar 4, 1990          Sun, Feb 25, 1990
  Report Mon, Mar 5, 1990         Mon, Feb 26, 1990
        Tue, Mar 6, 1990          Tue, Feb 27, 1990
        Wed, Mar 7, 1990          Wed, Feb 28, 1990
        Thu, Mar 8, 1990          Thu, Mar 1, 1990
        Fri, Mar 9, 1990          Fri, Mar 2, 1990
        Wed, Mar 14, 1990         Sat, Mar 3, 1990
```

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The "Select from this menu" field contains a list of all the dates from which to choose. To select seven days worth of dates, click on the first date in the range (for instance: Sun, Feb 25, 1990). This will fill the "One Week:" field with a weeks worth of days (see above). If a different range of dates is required, click on the first day of the range and drag down to the last day. This will fill the "Selected Dates:" field with the dates requested. At this point, it is possible to either graph or generate a text report of the selected dates.

To generate a report, click on the "Report" button. A window will ask if you want the dates in the selected dates field or the one week field. It will then generate a file in the "LabUse text" folder. The name of the file will include the first and last days of the range.

To graph the percent of machines in use for the selected days, click and hold on the "Graph" button. A pop-up menu will appear with all the choices available.

Dates　　　　　Allows the choice between the Selected Dates field and the One Week field

Options　　　　Allows the choice of printing the graphs one day per page or a condensed graph of an entire week on one page.

Machines　　　Selects the machines to generate graphs for. "All" will graph all of the machines.
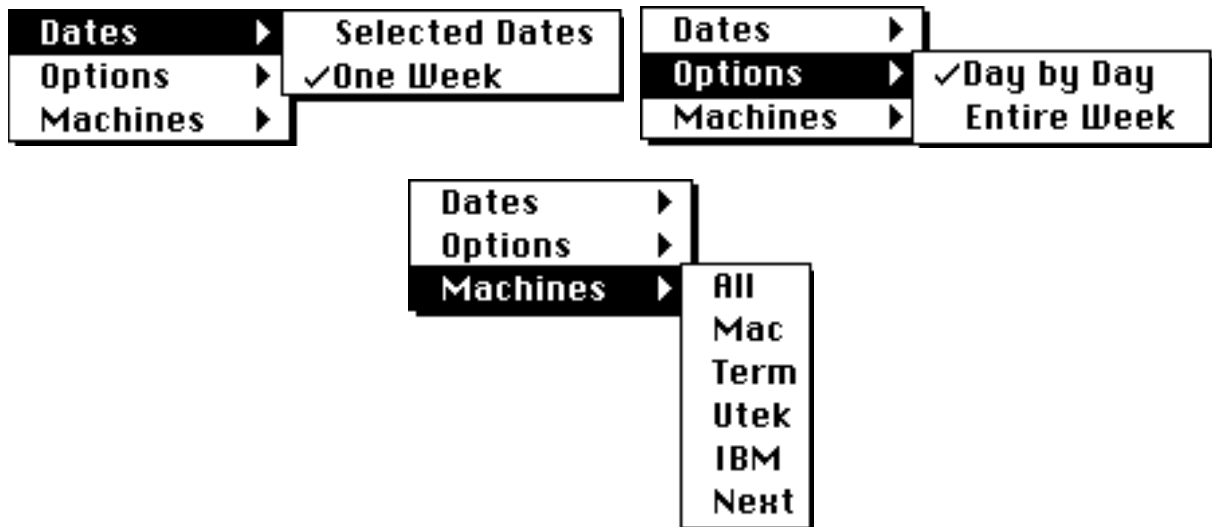
Making a "Machines" selection starts the graphing process. Once the graphs are generated, a window asks if you are ready to print the graphs. Clicking on "OK" will bring up the "Page Setup..." and "Print Stack..." windows. It is suggested that the "Graphics Smoothing?" option is used if printing on a LaserWriter. Clicking on "OK" will send the graphs to the printer. After printing, a window will appear asking if you want to delete the graphs. If you wish to generate both day by day graphs and weekly graphs:

1　　　　　　　Generate one set of graphs

2　　　　　　　Click on "Cancel" when asked to print

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If you wish to print some already existing graphs, the print and delete prompts can be called up by entering "Printall" in the message window. This can be handy if you forgot to select the appropriate printer before starting the graph generation process.

The Database

There are two major tasks that should be preformed weekly. These are entering new user data, and sorting the stack. There is also one minor task that can be preformed on an irregular basis. This is checking the Database for duplicate entries.

New user data is entered by clicking on the "Add Card" button, then typing in the data. More detailed information can be found in the **General Users Manual** or in the Stack Management section under Database.

Sorting the Database can be done by clicking on the sort button and answering if you want it sorted by the users name or user ID. Standard practice is to sort the Database by name.

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Clicking on the "Check" button will check for duplicate entries in the Database. A report of duplicates will be placed in a file called "duplicates" in the "Database" folder inside the "Data" folder. A listing of duplicates is also placed in the "Comments:" field of the "Temporary User Card". As this is a moderately lengthy process and non critical, it is sufficient to do this on an irregular basis.

Making Backups

It is wise to backup the Logger *at least* once a week. At the beginning of the term, when a lot of new user data is being entered, backing up more often could save a lot of retyping if something unpleasant happened.

The first step is to compact all the stacks. Clicking on the button in the top right hand corner of the "Home Card" will reduce the size of the stacks to a minimum.

At OSU, we use the shareware archiver "StuffIt" to make a backup copy that fits on two 800K floppy disks. To get to StuffIt, click on the button on the Home Card that is visible when above user level 2.

Once StuffIt has been launched, open a new archive by choosing the "New Archive…" item under the File menu. It is good practice to label the archive with the date (i.e. Logger 3/14/90.sit).
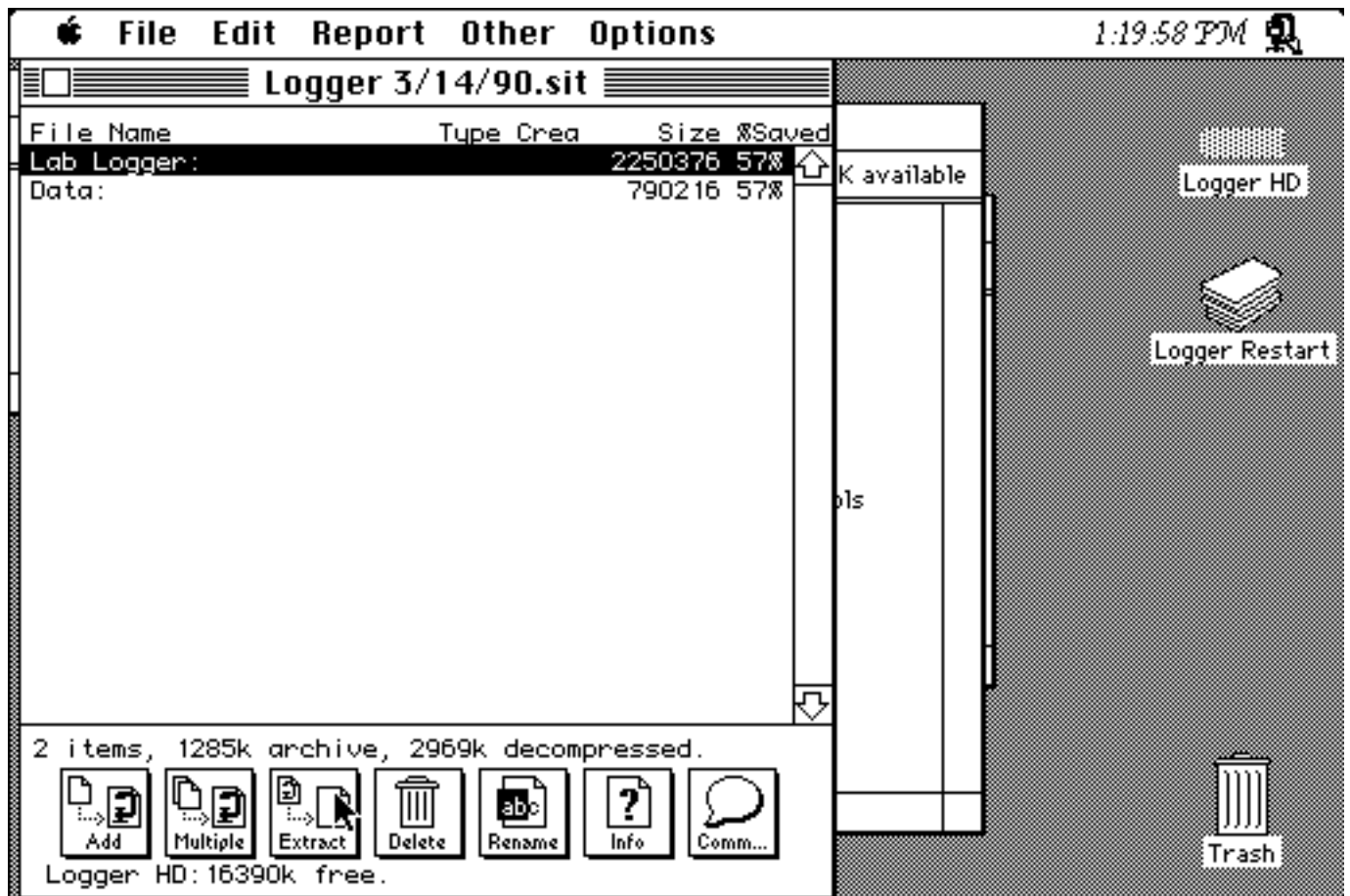
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The best compression ratios are obtained using the Lempel-Ziv (LZW) method. This is selectable under the Options menu.

To add the Logger folders to the archive, click on the "Multiple" button. Select the Logger folders one at a time, and Add them to the archive list. Once all the folders have been added, click on Done. Clicking on Archive will build an archive from the list of selected files.

Even compressed, the archives tend to be larger than 800K. In order to fit the archive on 800K disks, use the Segment... operation under the Other menu. This will split the archive up into segments small enough that they can be copied on to floppy disks.

Restoring from archives means reversing the process. Start with Join... under the Other menu to join the segments of the archive together. Open the archive, then highlight the folders to be restored by clicking and dragging over them. Clicking on the "Extract" button and on the Save button in the resulting dialog will finish the process.

The most critical data is in the **Lab Logger** folder. The information in the **Data** folder is less critical and less subject to change. If disk space is an issue, and a complete backup exists from the beginning of the term, then it is safe to backup only the contents of the **Lab Logger** folder on a weekly basis.

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<u>REFERENCES</u>

Where To Look For More Information

CS Logger User's Manual

HyperCard References

Resource File Reference

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CS LAB LOGGER SUPER USERS MANUAL

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