Chapter 1 NCSA Layout Tutorial

Chapter Overview

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Chapter Overview

This chapter offers a tutorial that introduces and describes the basic steps involved in using NCSA Layout:

- installing and invoking the program
- loading images and palettes from files
- saving your work
- using online help
- exiting the program

The following tutorial assumes that you know how to position the pointer, click and drag using the mouse, select items from menus, and locate files using directory dialog boxes. If you are unfamiliar with the Macintosh user interface or need more detailed information regarding these procedures, please refer to your Macintosh user's guide.

The tutorial in this chapter is a basic introduction to NCSA Layout which covers the standard features of the program. However, one of the most important new features of NCSA Layout 1.2 is the Laybat tool, a UNIX

tool that permits animation of image sequences on the Cray or other UNIX machine. Chapter 2, “Laybat Tool” contains information on and a tutorial for this new feature as well as others.

Installing NCSA Layout

NCSA Layout does not require any unusual installation procedures. As you would for any new Macintosh software, create a new folder and copy the contents of the Layout disk to your hard disk. NCSA Layout may also be run from a floppy disk; however, image data may exceed the capacity of floppy disks.

NOTE: Because some NCSA software and documentation has been stuffed using the UnStuffIt (v. 1.5) program by Raymond Lau, you must unstuff them before use. This application is included on NCSA distribution disks. You should find the program self-explanatory.

Beginning a Layout Session

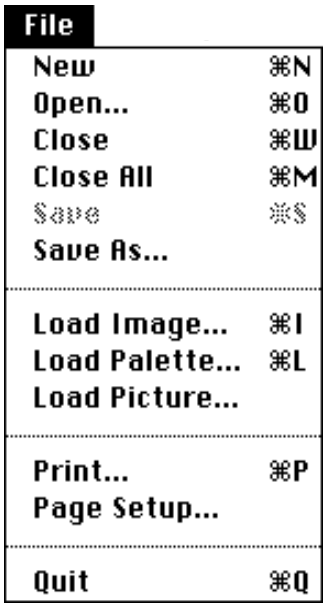
Figure 1.1 Layout Program Icon

Invoke NCSA Layout by double-clicking on the NCSA Layout application or icon. The Layout program icon is shown in Figure 1.1.

A startup dialog box appears to introduce NCSA Layout.

To view a display that has been created in NCSA Layout, select Open from the File menu (shown in Figure 1.2) or press -O. The startup dialog box disappears and a directory dialog box appears, displaying the contents of your disk. Select the sample display labeled *Shock Wave* and click Open, or simply double-click on the filename.

Figure 1.2 File Menu



A display window and the NCSA Layout menu bar appear on the screen. The sample layout contains a colored image annotated with text, grid lines, tick marks, a color bar, and a colored canvas. To return to the tutorial after viewing the sample display, click the close box in the upper-left corner of the display window, choose Close from the File menu, or press -W.

Opening a New File

To open a new Layout file in which to create and store your first display, select New from the File menu or press -N. A blank, untitled display window appears on the screen.

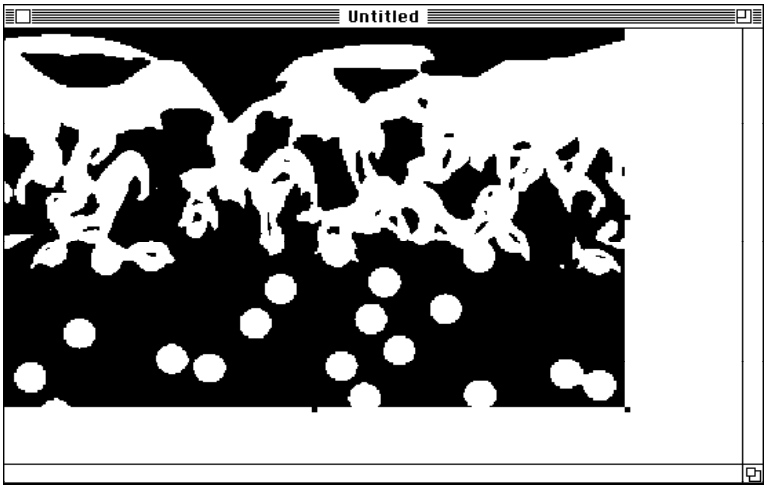
Loading an Image

To load an image that has been saved in either a raw raster or an HDF file into the Layout program, select Load Image from the File menu or press -I. A directory dialog box appears. For the purposes of this tutorial, several images have been saved in a folder labeled Images on the Layout disk.

To view the contents of the Images folder, select the folder and click Open or double-click on the folder. The directory shows the contents of the Images folder.

To display the scientific data *shockwave*, for example, select and open the file. The image appears in the upper-left corner of the NCSA Layout display window, as shown in Figure 1.3.

Figure 1.3 Layout Display Window



For more information regarding loading images, see “Loading Images” in Chapter 4.

Moving an Image

To move an image to another location:

1. Select the image by clicking the mouse button once within its borders.

2. Drag the image to the desired location on the canvas.

Figure 1.4 Hand Tool

For example, drag the image shockwave to the center of the display window. Note that when the pointer is positioned on the image and the mouse button is held down, the pointer changes from an arrow to a hand. The hand tool is shown in Figure 1.4. For more information regarding moving objects, see “Manipulating Objects” in Chapter 4.

Inserting Text

NCSA Layout allows you to annotate your displays with text.

To insert text in your display:

1. Outside the image: Double-click the mouse at any point on the surrounding *canvas* (the background of the display window).

   Directly on the image: Click once where you intend to insert text and either select New Text from the Text menu (shown in Figure 1.5) or press -T.

2. Insert text in the text box that appears, by typing on your keyboard.

Figure 1.5 Text Menu

To lengthen or shorten the text box, drag the shaded rectangle at its right edge to the right or left, respectively.

Note that double-clicking the image does not bring up a text box, but a dialog box. The purpose and functions of this dialog box are discussed in Chapter 4 in the section entitled “Annotating an Image.” To remove this dialog box, click Cancel.

For information on designating text as a counter, refer to Chapter 2 “Laybat Tool.”

Moving Text

To move the text that you have inserted to a different location on the canvas:

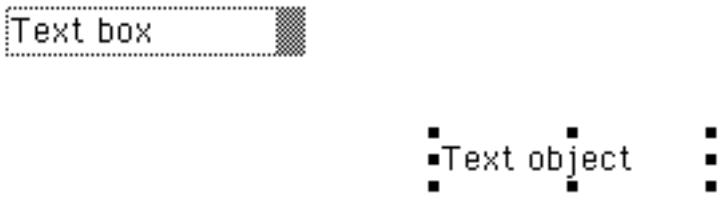
1. Click the mouse once while the pointer is located outside the text box, when the shaded border of the text box is still visible. This removes the text box, displaying only the text that you entered into it.

2. Position the pointer on the text and click the mouse once again. Solid squares border the text, indicating that the region that includes your text has been selected. The text insertion is now a *text object* which can be dragged to any location on the canvas. Figure 1.6 demonstrates the differences between a text box and a text object. If you hold the mouse button down while the pointer is positioned upon a text object, you will notice that the pointer changes from an arrow to a hand.

3. Drag the text object to any position on the canvas, even atop the image.

4. Deselect the text by clicking once outside of the selected region.

Figure 1.6 Text Displays



For instructions regarding making text transparent, see “Manipulating Objects,” in Chapter 4.

Loading a Palette

NCSA Layout lets you use palettes other than the program’s default palette for your display. Other palettes include user-defined palettes that have been created in applications such as NCSA PalEdit and saved in raw palette format or HDF files. Under the CanvasColor menu, NCSA Layout displays a color bar that indicates the range of the current palette.

To load a palette, select Load Palette from the File menu, or press -L. A directory dialog box appears, displaying the contents of your disk. For the purposes of this tutorial, several palettes have been saved in a folder labeled Palettes on the NCSA Layout disk.

To view the contents of the Palettes folder, select and open the file. The contents of the Palettes folder are displayed in the directory.

For example, to use the palette named evans.pal, select and open the file. The individual components of the image are mapped according to the new palette. To view the color bar for the new palette, click on the CanvasColor menu in the menu bar. Other ways to load a palette into NCSA Layout and other uses of the palette are described in Chapter 4, “Creating a Display.”

Saving Your Work

NCSA Layout allows you to save the contents of your display window or portions as raster files, raw palette files, PICT files, ASCII files, and HDF files. HDF Layout files area displays that can be opened from the desktop and then directly edited in the program.

To save the entire image or display as an HDF Layout:

1. Select the desired image by clicking within it.

2. Choose Save As... from the File menu. The Save As dialog box appears, shown in Figure 1.7.

2. Enter a name for the image, i.e. **`test`**.

3. Click the HDF radio button HDF Layout (Default).

4. Click Save to save the image.

See Chapter 3, “Formatting Your Data Files,” and “Saving Your Work” in Chapter 4 for more information on saving files.

Figure 1.7 Save Selection Dialog Box

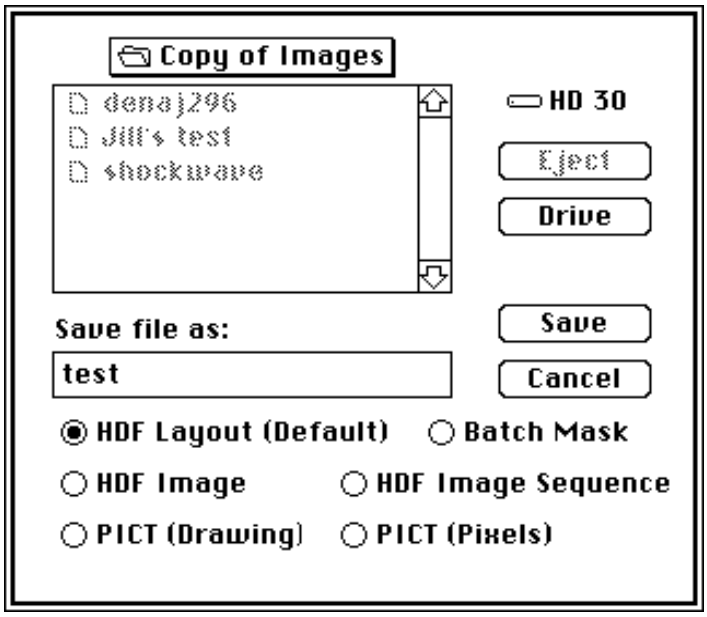


Figure 1.8 Icon for a Layout File

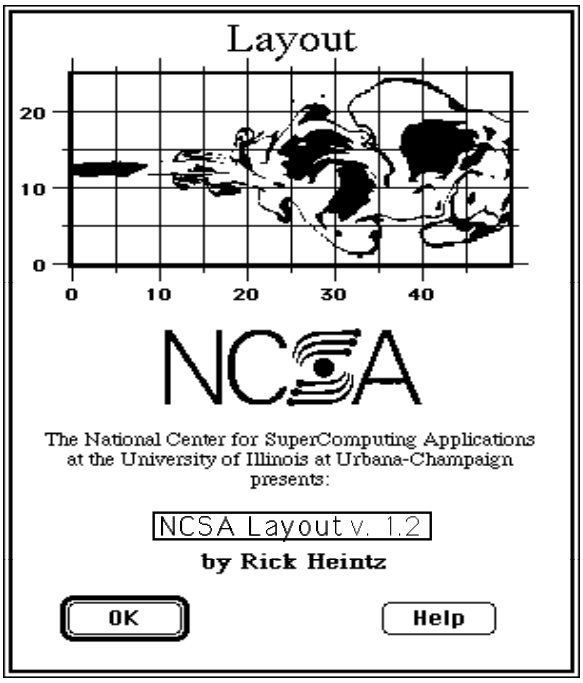
NOTE: Unlike images (images saved under HDF Image), Layout files—such as the Shock Wave sample layout provided on your program disk—may be opened from the Finder or from the NCSA Layout application. When viewed by icon, these files are represented with the icon shown in Figure 1.8. To select and open a Layout file, use the Open command from the File menu or double-click on the icon from the Finder.

In this version of NCSA Layout, you can open multiple Layout files at the same time.

Using Online Help

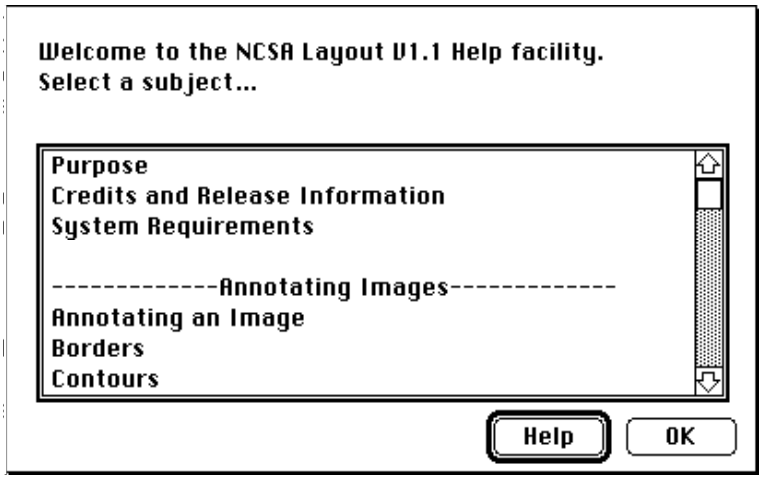
NCSA Layout provides online help that you may access at any time while using the application. To access online help, select Help from the Special menu or press -H. Or, choose About NCSA Layout from the Apple menu and click the Help button in the dialog box that appears, shown in Figure 1.9.

Figure 1.9 About Box



The Help menu appears, shown in Figure 1.10. To select a topic from this menu, click on the subject heading and click Help or press RETURN; or simply double-click on the heading. For example, double-click on the heading *Borders.*

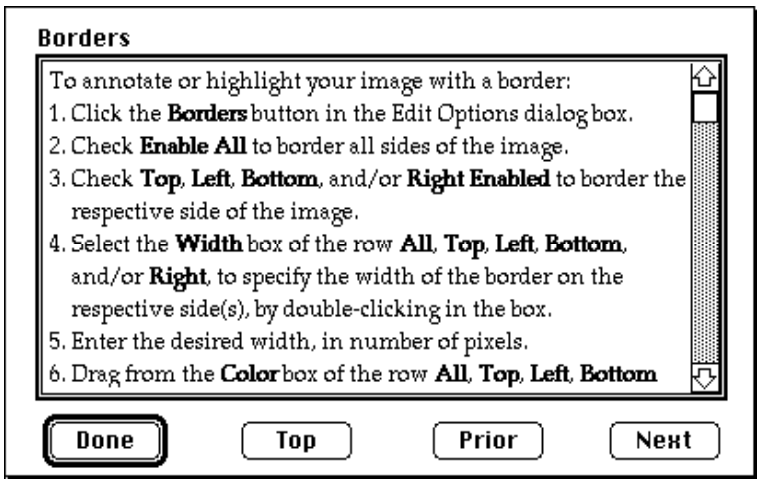
Figure 1.10 Help Menu



The corresponding help screen appears, shown in Figure 1.11. From the help screen, you may proceed to the next or preceding topic, or to the

top—the main menu. To exit Help and return to the main application, click Done.

Figure 1.11 Sample Help Screen



Exiting the Program

To exit NCSA Layout, choose Quit from the File menu, or press -Q. If you have made any changes to the display and have not already saved them, a dialog box appears asking whether you want to save the latest version before exiting the program. If you want to save your latest changes, click Yes or press RETURN.