10. USER CARDS

Cards can be broadly divided into two categories. User cards are those cards for which you create the contents. System cards are cards where the contents are built by the system for you. This chapter discusses user cards.

This chapter explains how to use:

- Text cards
- FileBox cards
- Sketch cards
- Graph cards and the graph editor
- Bitmap editor

Text Cards

The Text card is based on TEdit, a versatile editor and text formatter. This entire guide was produced using TEdit. For a detailed discussion of how this editor works, see *A User's Guide to TEdit*. Text cards allow you to include sketches, graphs, and bitmaps. To learn how to manipulate sketches, see *A User's Guide to Sketch*. For graphs and bitmaps see the sections below on the Graph card and the bitmap editor.

Text-Card Menu

The text-card menu is the same as the TEdit menu with one additional option (Restart Editor) separated from the others by a dashed line (see Figure 10-1).

Figure 10-1. **Text-card** Menu

Use the **Restart Editor** command when the contents of the Text card are incorrectly displayed on the screen.

For all the other menu items, see *A User's Guide to TEdit*.

FileBox Cards

The FileBox card, like the Text card, is based on TEdit. For a detailed discussion of how this editor works, see *A User's Guide to TEdit*. Text-based cards allow you to include sketches, graphs, and bitmaps. To learn how to manipulate sketches, see *A User's Guide to Sketch*. For graphs and bit maps see the sections below on the Graph card and the bitmap editor.

A FileBox is a card that contains links to other cards including other FileBox cards. All cards, including FileBox cards, can be filed in one or more FileBoxes. Every card, including FileBox cards but excluding the top level Special FileBox Cards, is contained in at least one other FileBox. Whereas other cards may be linked together to form an arbitrary network, the set of FileBoxes forms a strict hierarchy This is to say that no child FileBox is allowed to have its parent FileBox as a child. In short, no circular linkages can exist.

FileBoxes hold all cards relating to a given topic. A FileBox typically contains both links to subFileBoxes, which contain any cards relevant to the subtopics of the main topic, and links to other card types, which contain information relevant to the main topic. For example, the screen image in Figure 10-2 shows a FileBox containing both FileBoxes (Sun and Planets) and other note cards (Overview), all dealing with the main topic of Solar System.

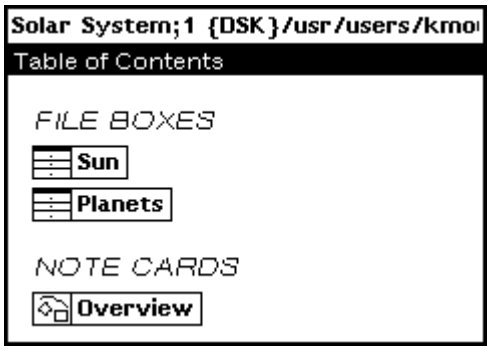

Figure 10-2. Solar System FileBox containing SubFileBoxes and Sketch Card

The FileBox structure provides a way of keeping track of sets of cards on a common topic. In contrast, the links between individual cards allow you to represent the interconnections between various ideas or pieces of information, independent of any categorization into topic areas.

The markers FILE BOXES and NOTE CARDS help differentiate the kinds of cards filed in the FileBox. In addition, since FileBoxes are text-based cards, anything you can do with a text card, you can also do with a FileBox. For example, you can insert your own labels or short lines of commentary to break up the links into subgroups.

Suggested FileBoxes and Note Cards

You may find it helpful to create the following types of general FileBoxes.

- Bibliography – a FileBox for the collection of sources used in the notefile.
- Index – a FileBox listing keywords from the notefile; it may be helpful when using Search cards.

- ReadMe – a note card in the top level FileBox giving global information about the notefile for first-time browsers.
- Active Cards – a FileBox kept at the top level of the FileBox hierarchy containing FileBoxes and note cards that represent work in progress and are thus frequently accessed. A Sketch card containing links to these FileBoxes and note cards is another method of organizing active cards, using spatial cues as a way of representing structure.

FileBox-Card Menu

This menu is the same as the Text-card menu. See the section immediately above on Text cards as well as *A User's Guide to TEdit*.

System Parameters Affecting FileBoxes

FileBoxes have two system parameters associated with them, **Markers In FileBoxes** and **Alphabetized FileBox Children**. For a complete discussion of these parameters see Chapter 13.

Sketch Cards

The Sketch card is based on Sketch, a sophisticated graphics package. For a detailed discussion of how Sketch works, see *A User's Guide to Sketch*. Sketch cards allow you to include graphs, and bitmaps. To learn how to manipulate graphs and bitmaps see the sections below on the Graph card and the bitmap editor.

Sketch-Card Menu

This menu (Figure 10-3) is the same as the Sketch editor menu. For a detailed discussion of this menu's functionality, see *A User's Guide to Sketch*.

Figure 10-3. **Sketch Card** Menu

System Parameters Affecting Sketch Cards

Sketch cards have one system parameter associated with them, **Attach Sketch Menu**. For a complete discussion of this parameter see Chapter 13.

Graph Cards

The Graph card allows you to construct a layout of user-defined words or phrases, called nodes, which may be connected together with lines to indicate some structure. Each node may be easily moved about the card without losing its connections.

Graph-Card Menu

The Graph card, like the Browser card, is based on the graph editor Grapher. To make the Graph-card menu and terminology more consistent with the Browser-card menu and terminology, the Graph card presents a slightly different menu to you than Grapher does. However, since the functionalities are virtually identical, both the Graph-card and Grapher menus are discussed in parallel below. The graph-card menu-option titles are left justified with corresponding Grapher menu-option titles in parentheses.

Display the **Graph-card** menu by pressing the right mouse button in the body of the card. Select the desired command before releasing the button.

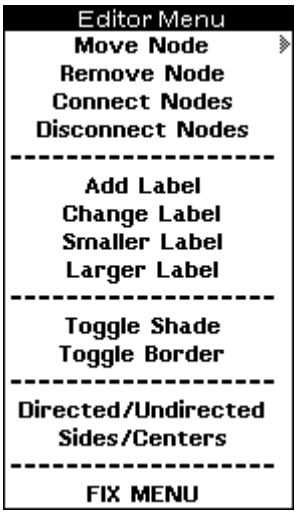

Figure 10-4. **Graph-card** Menu

Grapher Menu

You will probably encounter the Grapher menu only if you save your document cards to TEdit files and edit a graph-card graph from within the TEdit document. You can safely skip over this section and still understand the Graph card.

To edit a graph from a TEdit document, hold any mouse button down in the graph region. Then select the **Edit graph** option from the one-item menu (see Figure 10-5).

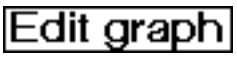

Figure 10-5. **Edit Graph** Menu

When you select this option, Grapher opens a window containing the graph. Hold the middle mouse button down in this window to make the menu shown in Figure 10-6 appear. Use the left mouse button to move nodes. When you are done editing the graph, select the **STOP** option.

While you are editing a graph, Grapher captures the type-in process and does not allow you to do anything other than mouse operations. To free the type-in process, select the **STOP** option.

There is no simple way to abort out of the Grapher editor and throw away all the changes you have made to the graph. For this reason, if you are going to edit the graph extensively, we recommend that you use shift-select to copy the original graph in place and call the Grapher editor on the copy. In a worst case scenario, try pressing the STOP key or typing CONTROL-E.

Figure 10-6. **Grapher** Menu

Prompts for information or confirmation are given in the card prompt window for Graph cards and appear in the system prompt window for Grapher. General information is printed to the system prompt window for both Graph cards and Grapher.

Graph-Card and Grapher Menu Options

The menu option at the left side of each paragraph below refers to the Graph-Card Menu. The option in parentheses refers to the Grapher Menu.

Move Node (Move Node)

Moves a node and connections to a new position. After selecting this option, point to the node you want to move, press and hold the left mouse button, move the node to its new position, and release the mouse button.

Move Node has three options on a submenu (see Figure 10-7). These same three options appear on the Grapher **Move Node** submenu.

Figure 10-7. **Move Node** Submenu

Move Single Node Functions exactly as **Move Node** does.

Move Node & SubTree Moves a selected node and all subnodes to which it is connected. This operation does not move any super nodes of the selected node. That is, nodes which are connected to the selected node as opposed to nodes to which the selected node is connected.

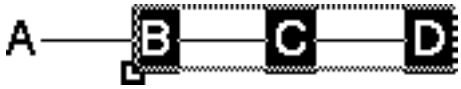

Figure 10-8. Node and Subtree Selected to be Moved

Figure 10-8 shows what happens when you select **Move Node & SubTree** and then hold the left mouse button down on node B. Nodes B, C, and D are selected to be moved, but not node A. Grapher keeps track of the nodes where each connection starts and ends, and in this case the connections run from A to B to C to D. So node A is not in the subtree of node B and hence is not moved. See the **Directed/Undirected** option below for more information.

Move Region Allows you to sketch out a region of the graph which you want to move. **Move Region** does not pay attention to the graph hierarchy, it only pays attention to the area you sweep out in the Graph card.

Remove Node (Delete Node)

Removes a node from the graph. Select the node to be deleted with the left mouse button. The card prompt window prompts you for confirmation.

Connect Nodes (Add Link)

Draws a connection between two nodes. Select the **from** node and then the **to** node with the left mouse button when prompted. If a second overlapping connection is made running in the opposite direction between the same two nodes, the lines representing the connections, between those two nodes, will not be visible You can make them visible by choosing the directed display option.

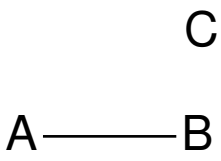

Figure 10-9. **Undirected** Option Graph (Connections from A to B to C and a third connection from C to B)

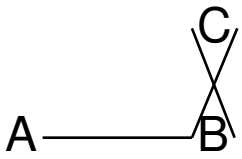

Figure 10-10. **Directed** Option Graph (connections from A to B to C and a third connection from C to B

Disconnect Nodes (Delete Link)

Removes a connection from between two nodes. Select the **from** node and then the **to** node with the left mouse button when prompted.

Add Label (Add Node)

Pops up a window prompting you to type in a label name followed by a carriage return. The label appears next to the cursor within the graph card. Position the new label by moving the cursor to where you want the label to appear. Plant the label by clicking any mouse button. Cancel this operation by typing a carriage return before typing any other characters to the prompt window.

Change Label (Change Label)

Allows you to change a label. **Change Label** first waits for you to select, with the left mouse button, the label you want to change. It then pops open a window prompting you to type in a new label name followed by a carriage return. The new label immediately replaces the old label, preserving font, position, and connections. You can cancel this operation by clicking outside a node, or by typing a carriage return before typing any other characters to the prompt window.

Smaller Label (label smaller)

Decreases the font size of the selected node. Repeat this command as many times as necessary to achieve the font size you want.

Larger Label (label larger)

Increases the font size of the selected node. Repeat this command as many times as necessary to achieve the font size you want.

Toggle Shade (<-> Shade)

Inverts the shade around the selected node. For example, a black label on a white background becomes a white label on a black rectangular background. Select the node to be inverted with the left mouse button. To change the shade back, re-apply this option.

Toggle Border (<.> Border)

Draws a rectangular border around the selected node. Select the node to have a border drawn around it with the left mouse button. To remove a border, re-apply this option.

Directed/Undirected (<.> Directed)

A graph is stored as a directed lattice. Connections always run from one node to some other node.

The **Directed** option makes the flow of the connections explicit in the presentation of the graph. When you select the **Directed** option, connections prefer to run from the left side of the parent node to the right side of the child node when you have **Sides** selected (see Figure 10-11). When you have the **Centers** option selected, connections prefer to run from the bottom center of the parent node to the top center of the child node (see Figure 10-12).

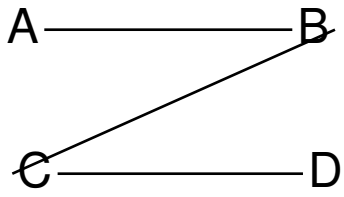

Figure 10-11. **Directed** Graph (shows flow of connections from A to B to C to D, with the **Sides** option selected)

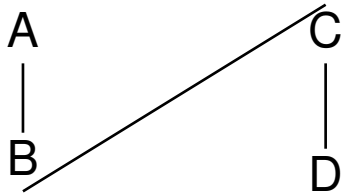

Figure 10-12. **Directed** Graph (shows flow of connections from A to B to C to D, with the **Centers** option selected)

The **Undirected** option draws the graph without regard to the flow of connections. The lines are drawn starting and ending on the sides of the nodes closest to each other (see Figures 10-13 and 10-14).

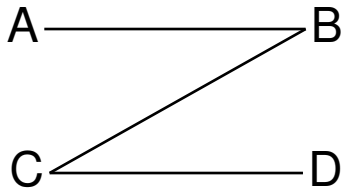

Figure 10-13. **Undirected** Version of Figure 10-11

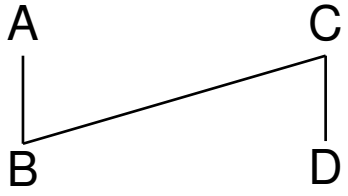

Figure 10-14. **Undirected** Version of Figure 10-12

Sides/Centers (<-> Sides)

The sides mode predisposes the graph editor to make the left and right sides of the nodes the connection points for lines, as shown in Figure 10-15.

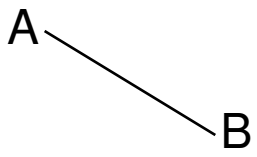

Figure 10-15. Graph Favoring Sides

The centers mode predisposes the graph editor to make the top and bottom centers of the nodes the connection points for lines, as shown in Figure 10-16.

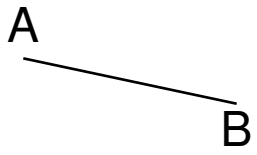

Figure 10-16. Graph Favoring Centers

FIX MENU

Attaches the graph-card menu to the right side of the Graph card.

(STOP)

Only appears on the Grapher menu, not on the Graph card menu. **STOP** exits the Grapher editor and saves all your changes.

Bitmap Editor

The bitmap editor allows you to manipulate bitmaps that have been inserted in Text or Sketch cards as well as TEdit and Sketch files. It is automatically invoked when the bitmap area is selected.

Inserting Bitmaps into Cards

The method for inserting bitmaps into text-based cards differs slightly from that for inserting them into sketch-based cards. Each procedure is discussed below.

Note: You cannot insert bitmaps into graph-based cards.

Text-Based Cards

Inserting a bitmap into a text-based card involves several steps.

1. Position the caret cursor where you want the bitmap to appear in the destination card, or TEdit window, by clicking at that position with the left mouse button.

2. Press the COPY key or either of the SHIFT keys, hold the right mouse button down somewhere in the background and select the **Snap** option from the single item menu which will appear (see Figure 10-17).

Figure 10-17. **Single-Item Snap** Menu

3. At this point the mouse cursor changes to look like this,  . This is the prompt asking you to sweep out an area of the screen to be made into a bitmap.
4. Press and hold the left mouse button while you sweep out a region of the screen.
5. When you release the left mouse button, the bitmap is transferred to the designated card or edit window.

If you need to adjust the area you are sweeping out, hold down both the right and left mouse buttons to bring up the forceps prompt,  . This prompt allows you to change corners so that you can adjust the size of the bitmap in all directions.

Sketch-Based Cards

The procedure for inserting bitmaps into sketch-based cards differs in only one respect from that for text-based cards. The sketch-based card must be the active card, which is to say you must click in it so that it has the type-in process to mark it as the destination for the bitmap. However, when you do this, you are not indicating the insertion point for the bitmap. In sketch-based cards, positioning the bitmap is done last. After you have swept out a region of the screen to include as a bitmap in the sketch, move the mouse cursor back into the Sketch card. When you enter the Sketch card, the snapped bitmap appears attached to your mouse cursor, and you can position it by clicking the left mouse button.

Bitmap Operations

Bring up the Operations on Bitmaps menu (shown in Figure 10-18) by moving the mouse cursor into a bitmap and holding down the left or middle mouse button.

Figure 10-18. **Operations on Bitmaps** Menu

Change Scale

Changes the scale or size of the bitmap. A scale of 2 doubles the size of the bitmap; a scale of .5 halves the size of the bitmap. To achieve the best results when shrinking or enlarging a bitmap, change the scale by evenly divisible amounts; for example, 4, 2, 1, .5, or .25.

Hand Edit

Invokes the bitmap editor on the bitmap. The bitmap editor is described in detail below.

Trim

Trims the white columns and rows from all four edges of the bitmap. This is a very useful operation to remove any extraneous white space from around the bitmap. Position the image that you are taking a snap of on a white background to take the greatest advantage of this option.

Reflect Left-to-right

Flips the bitmap about its vertical centerline.

Reflect Top-to-bottom

Flips the bitmap about its horizontal centerline.

Reflect Diagonally

Flips the bitmap about its X=Y diagonal. The resulting bitmap is reversed and lying on its right side. The same effect can be achieved by performing a **Reflect Left-to-Right** followed by a **Rotate Right**.

Rotate Left

Rotates the bitmap by 90 degrees in a counterclockwise direction.The resulting bitmap is lying on its left side.

Rotate Right

Rotates the bitmap by 90 degrees in a clockwise direction. The resulting bitmap is lying on its right side.

Expand on Right

Adds white space to the right of the bitmap. Specify the width of the white space in pixels using the number pad. Select **ok** when you are done.

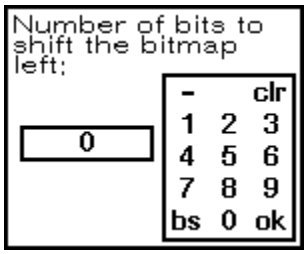

Figure 10-19. Number Pad

The number pad is used much like a simple calculator to enter numbers. The **ok** button returns the number to the system. **bs** deletes the last digit you entered. **clr** resets the input to 0. Abort the operation by setting the input value to 0 and selecting **ok**.

To enter a negative number, enter the digits and then select the minus sign. Entering a negative number removes the specified number of pixels from the right side of the bitmap.

Expand on Left

Adds white space to the left of the bitmap. Specify the width of the white space in pixels using the number pad. Then select **ok** . See the **Expand on Right** option for more detail.

Expand on Bottom

Adds white space to the bottom of the bitmap. Specify the width of the white space in pixels using the number pad. Then select **ok** . See the **Expand on Right** option for more detail.

Expand on Top

Adds white space to the top of the bitmap. Specify the width of the white space in pixels using the number pad. Then select **ok** . See the **Expand on Right** option for more detail.

Switch Black & White

Inverts all of the pixels in the bitmap; exchanges black for white and white for black.

Add Border

Adds a border to the bitmap. The system prompts for the width of the border using the number pad described above. It then prompts for the texture of the border with the texture bitmap editor.

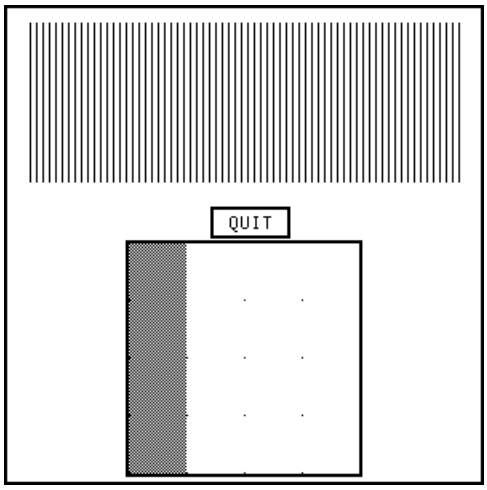

Figure 10-20 Texture Bitmap Editor

The area at the top of the window shows what the texture looks like in true screen scale and the bottom area contains a four-by-four edit array (see Figure 19-20). Click the left mouse button in the edit grid to turn a pixel on; click the middle button to turn a pixel off. Select the **Quit** option when the texture looks the way you want it to. The texture then appears as the border around the bitmap.

To abort this operation, select **clr** followed by **ok** on the number pad.

There is no simple way to abort this operation once you have brought up the texture bitmap editor. However, you can turn all the pixels off (set them to white space) and select **Quit**. Then select **Trim** from the **Operations on Bitmaps** menu to return the bitmap to its previous condition.

Bitmap Editor

The editing window has three active areas: a grid edit area in the lower part of the window, a display area in the upper left part, and a gray bar in the upper right (see Figure 10-21).

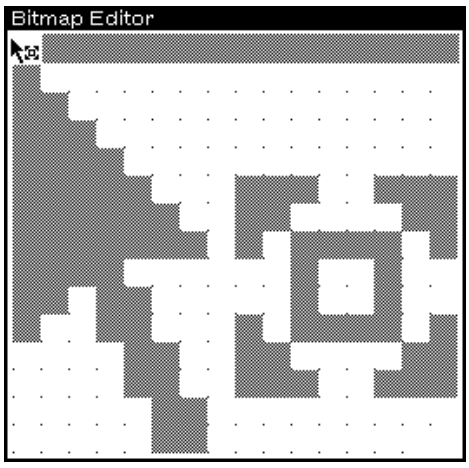

Figure 10-21. Bitmap Editor Window

In the edit area, the left button adds points and the middle button erases points. The display area shows the actual size and form of the bitmap. The gray bar provides access to the Bitmap Editor menu.

The right mouse button brings up the normal window menu in all areas of the window.

If the bitmap is too large to fit in the edit area, change the portion which can be edited by scrolling up and down in the left margin, and left and right in the bottom margin. Press the middle mouse button while in the display area to bring up a menu that allows you to make a global placement of the portion of the bitmap which can be edited. To see more of the bitmap you are editing, reshape the window to make it larger, or use the **GridSize** command, described below, to reduce the bit size in the edit area.

Whenever you press the left or middle mouse button down with the cursor inside the display area or the gray bar, the section of the bitmap that is currently in the edit area is shown in reverse video. Press the left button while in the gray bar to put the lower left 16 x 16-bit section of the bitmap into the mouse cursor for as long as the left button is held down.

Press the middle button while in the grey bar or in the title bar to bring up the **Bitmap Editor** menu (see Figure 10-22).

Figure 10-22. **Bitmap Editor** Menu

Hold the middle button down over a command to display an explanatory message in the system prompt window.

Paint

Puts the current bitmap into a window and calls the paint command on the bitmap. Use the left mouse button for drawing and the right for erasing. The paint command implements drawing with various brush sizes and shapes but only on an actual sized bitmap. To set brush characteristics and exit paint, press the right mouse button and select the appropriate command from the paint command menu. When you exit, you will be asked whether or not the changes you made while in Paint mode should be placed in the current bitmap. **Paint** is particularly useful for erasing or filling in large regions in bitmaps. See the Window Menu section in Chapter 7 for a detailed discussion of all the paint menu options.

Figure 10-23. **Paint Command** Menu

ShowAsTile

Tesselates the current bitmap in the gray bar. This is useful for determining how a bitmap will look if it were made the display background. The tiled display does not automatically change as the bitmap changes. To update it, use the ShowAsTile command again.

Grid On/Off

Turns the editing grid display on or off.

GridSize

Allows you to specify the size of the editing grid. When you select this option, a number menu appears, giving you a choice of several point sizes for the grid (see Figure 10-24).

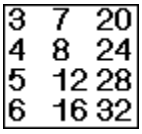

Figure 10-24. **Number** Menu

When you select a size, the editing portion of the bitmap editor is redrawn. A smaller size allows you to edit more of the bitmap without scrolling; a larger size makes it easier to turn individual bits on and off. The original size is chosen heuristically. It is typically about 8. Click outside the number menu to abort this operation.

Reset

Sets all or part of the bitmap to the contents it had when you originally called the bitmap editor. When you select this option, a second menu provides a choice between resetting the entire bitmap or just the portion that is in the edit area (see Figure 10-25).

Figure 10-25. **RESET how much?** Menu

This second menu also acts as a confirmation, since clicking outside of this menu results in no action being taken. Note that if the entire bitmap appears in the edit area, the menu only has the **WholeBitmap** option.

Clear

Sets all or part of the bitmap to white space. As with the Reset command, a second menu provides a choice between clearing the entire bitmap or just the portion that is in the edit area (see Figure 10-26).

Figure 10-26. **CLEAR how much?** Menu

Cursor

Sets the cursor to the contents of the lower left part of the bitmap. This operation next prompts you to specify the new cursor's active pixel. You do this by clicking somewhere in the lower left 16 x 16 portion of the grid. Cursors created this way are typically very short lived.

Note: This option is intended for people extending the NoteCards environment. We recommend that non-programmers do not use this option.

OK

Copies the edited bitmap image into the original bitmap, exits the bitmap editor, and closes its edit window. The image you modify using the editor is a copy of the original bitmap. Unless you exit the bitmap editor via **OK**, no changes are made to the original bitmap.

Abort

Exits the bitmap editor without making any changes to the original bitmap. Contrast with **OK**.

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