

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.

How to use FileBox cards.

How to use Sketch cards.

How to use Graph cards and the graph editor.

How to use the bit map editor.

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## Text Cards

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The Text card is based on TEdit, a versatile editor and text formatter. This entire document 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 bit maps. 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 bit map editor.

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## The Text-Card Menu

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The text-card menu is the same as the TEdit menu with one additional option separated from the others by a dashed line.

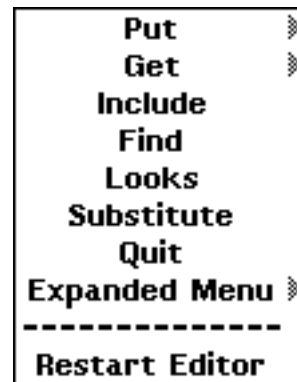


Figure 10-1. The text-card menu.

You 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

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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 bit maps. 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 bit map 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, except 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.

FileBoxes are meant to hold all cards relating to some 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 below shows a FileBox containing both FileBoxes and other note cards.

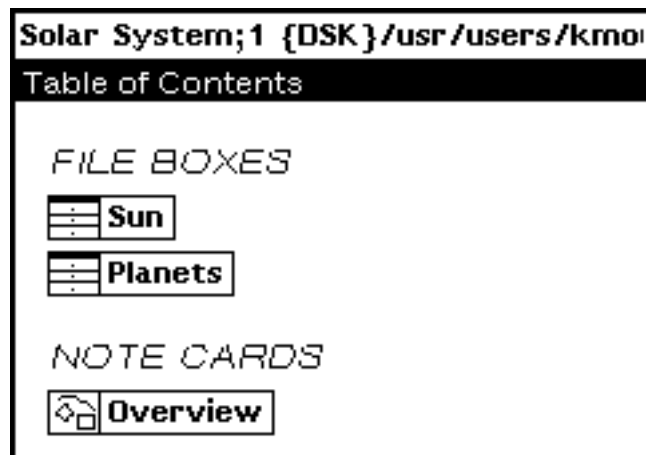


Figure 10-2. The Solar System FileBox containing subFileBoxes for its subtopics and a Sketch card dealing with the main topic, the Solar System.

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 what kinds of cards are 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. This means that you can, for example, insert your own labels or short lines of commentary to break up the links into subgroups.

## Suggested FileBoxes and Note Cards

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

### Bibliography

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A FileBox for the collection of sources used in the notefile.

### Index

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A FileBox listing keywords from the notefile, may be helpful when using Search cards.

### Read Me

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A note card in the top level FileBox giving global information about the notefile for first time browsers.

### Active Cards

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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.

## The FileBox-Card Menu

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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

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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, System Parameters.

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## Sketch Cards

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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 bit maps. To learn how to manipulate graphs and bit maps see the sections below on the Graph card and the bit map editor.

## The Sketch-Card Menu

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This menu 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. The Sketch card menu.

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### 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, System Parameters.

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## Graph Cards

The Graph card is designed to allow 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.

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### The 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 while the Grapher menu-option titles are right justified.

You display the graph-card menu by depressing the right mouse button in the body of the card. Select the desired command before releasing the button.

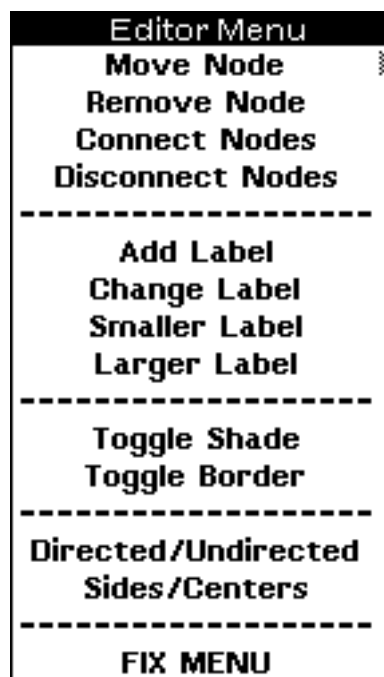


Figure 10-4. The graph-card menu.

## The 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 you must first select the **Edit graph** option from the one-item menu which appears when you hold any mouse button down in the graph region.

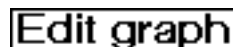


Figure 10-5. The "Edit graph" menu.

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, you can try hitting the STOP key or typing CONTROL-E.

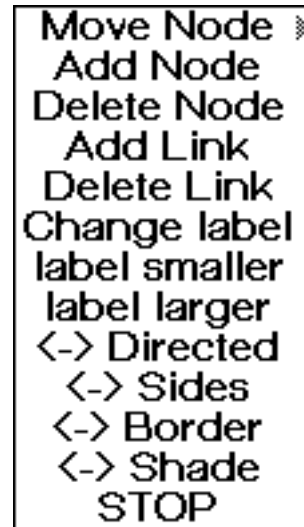


Figure 10-6. The Grapher menu.

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.

## The Graph-Card and Grapher Menu Options

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### 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. These same three options appear on the Grapher **Move Node** submenu.



Figure 10-7. The **Move Node** submenu.

### Move Single Node

Functions exactly as **Move Node** does.

### Move Node & SubTree

Moves a selected node and all subnodes which it is connected to. 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 which the selected node is connected to.

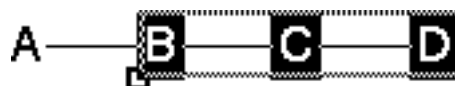


Figure 10-8. A node and subtree selected to be moved.

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 will prompt 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. A graph, with connections from A to B to C and a third connection from C to B, displayed using the **Undirected** option.



Figure 10-10. A graph, with connections from A to B to C and a third connection from C to B, displayed using the **Directed** option.

### 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 will appear 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. This operation can be cancelled 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. 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.



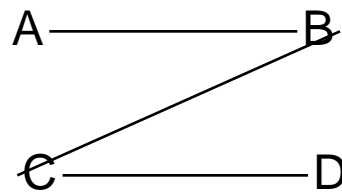


Figure 10-11. A **Directed** graph which explicitly shows the flow of connections from A to B to C to D, with the **Sides** option selected.

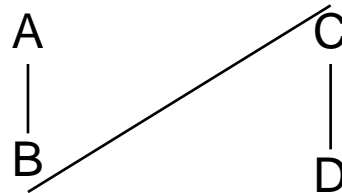


Figure 10-12. A **Directed** graph which explicitly shows the flow of connections from A to B to C to D, with the **Centers** option selected.

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.

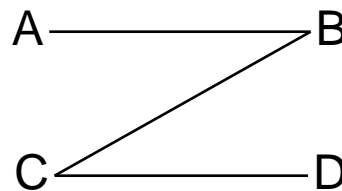


Figure 10-13. An **Undirected** version of Figure 10-11.

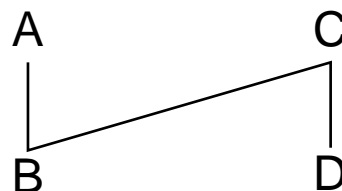


Figure 10-14. An **Undirected** version of Figure 10-12.

#### 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.

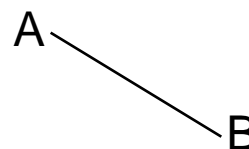


Figure 10-15. A graph drawn favoring sides.

The centers mode predisposes the graph editor to make the top and bottom centers of the nodes the connection points for lines.

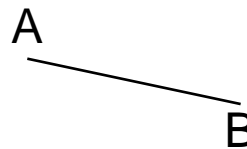


Figure 10-16. A graph drawn favoring centers.

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## FIX MENU

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

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## STOP

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

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## The Bit Map Editor

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

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## Inserting Bit Maps into Cards

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

You cannot insert bit maps into graph-based cards.


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## Text-based Cards

Inserting a bit map into a text-based card involves several steps. First, position the caret cursor where you want the bit map to appear in the destination card, or TEdit window, by clicking at that position with the left mouse button. Second, depressing 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.



Figure 10-17. The single-item "Snap" menu.

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 bit map. Third, press and hold the left mouse button while you sweep out a region of the screen. When you release the left mouse button, the bit map will be transferred to the designated card or edit window.

If you need to adjust the area you are sweeping out, do the following. Hold down the right mouse button, in addition to the left mouse button, to bring up the forceps prompt,  This prompt

allows you to change corners so that you can adjust the size of your bit map in all directions.

### Sketch-based Cards

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The procedure for inserting bit maps 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 bit map. However, when you do this, you are not indicating the insertion point for the bit map. In sketch-based cards, positioning the bit map is done last. After you have swept out a region of the screen to include as a bit map in the sketch, move the mouse cursor back into the Sketch card. When you enter the Sketch card, the snapped bit map will appear attached to your mouse cursor, and you can position it by clicking the left mouse button.

### Bit Map Operations

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Moving the mouse cursor into a bit map and holding down the left or middle mouse button brings up the "Operations on bitmaps" menu.



Figure 10-18. The "Operations on bitmaps" menu.

### Change Scale

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Changes the scale or size of the bit map. Giving a scale of 2 doubles the size of the bit map; a scale of .5 halves the size of the bit map. You achieve the best results shrinking or enlarging a bit map when you change the scale by evenly divisible amounts. For example, 4, 2, 1, .5, or .25.

### Hand Edit

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Invokes the bit map editor on the bit map. The bit map editor is described in detail below.

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### Trim

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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 bit map. 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

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Flips the bitmap about its vertical centerline.

### Reflect Top-to-bottom

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Flips the bitmap about its horizontal centerline.

### Reflect Diagonally

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Flips the bitmap about its X=Y diagonal so that the resulting bit map 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

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Rotates the bit map by 90 degrees in a counterclockwise direction so that the resulting bit map is lying on its left side.

### Rotate Right

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Rotates the bit map by 90 degrees in a clockwise direction so that the resulting bit map is lying on its right side.

### Expand on Right

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Adds white space to the right of the bit map. You specify the width of the white space in pixels using the number pad. Select **ok** when you are done.

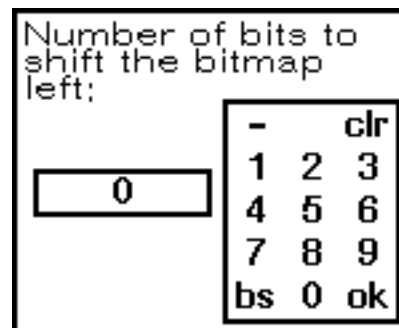


Figure 10-19. The number pad.

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." You abort the operation by setting the input value to "0" and selecting **ok**.

You enter a negative number by first entering the digits and then selecting the minus sign. Entering a negative number removes that many pixels from the right side of the bit map.

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**Expand on Left**

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Adds white space to the left of the bit map. You specify the width of the white space in pixels using the number pad. Select **ok** when you are done. See the **Expand on Right** option for more detail.

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**Expand on Bottom**

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Adds white space to the bottom of the bit map. You specify the width of the white space in pixels using the number pad. Select **ok** when you are done. See the **Expand on Right** option for more detail.

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**Expand on Top**

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Adds white space to the top of the bit map. You specify the width of the white space in pixels using the number pad. Select **ok** when you are done. See the **Expand on Right** option for more detail.

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**Switch Black & White**

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

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**Add Border**

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

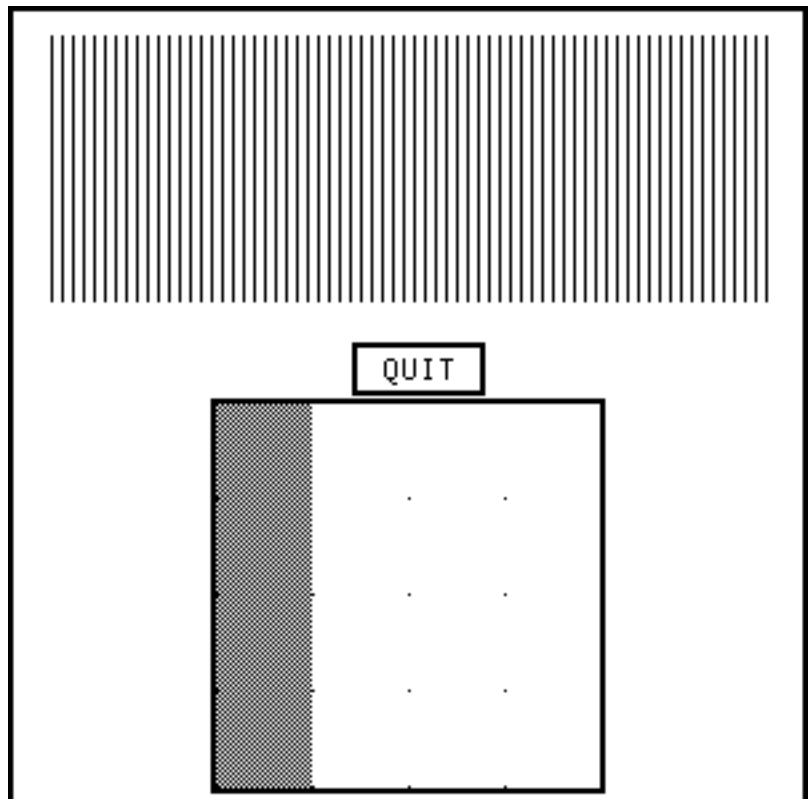


Figure 10-20 The texture bit map editor.

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. Clicking the left mouse button in the edit grid turns a pixel on; clicking the middle button turns a pixel off. Select the **Quit** option when the texture looks the way you want it to. The texture will then appear as the border around the bit map.

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 bit map editor. However, you can turn all the pixels off (set them to white space) and select **Quit**. Then selecting **Trim** from the "Operations on bitmaps" menu should return the bit map to its previous condition.

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## The 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.

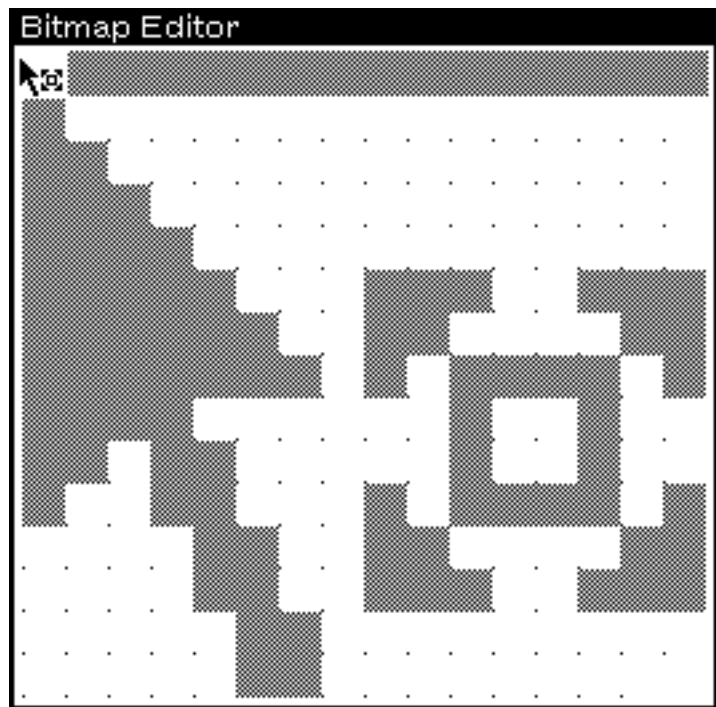


Figure 10-21. The "Bitmap Editor" display.

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 bit map. 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 bit map is too large to fit in the edit area, you can change the portion which can be edited by scrolling up and down in the left margin, and left and right in the bottom margin. Pressing the middle mouse button while in the display area brings up a menu that allows you to make a global placement of the portion of the bit map which can be edited. If you want to see more of the bit map

you are editing, you can reshape the window to make it larger, or you can 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 bit map that is currently in the edit area is shown in reverse video. Pressing the left button while in the gray bar puts the lower left 16 x 16 bit section of the bit map into the mouse cursor for as long as the left button is held down.

Pressing the middle button while in the grey bar or in the title bar brings up the "Bitmap Editor" menu.

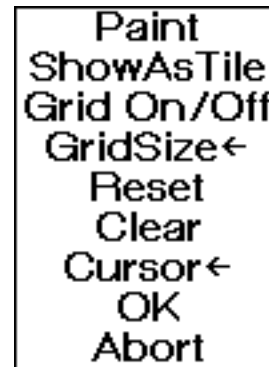


Figure 10-22. The "Bitmap Editor" menu.

Holding the middle button down over a command results in an explanatory message being printed in the system prompt window.

## Paint

Puts the current bit map into a window and calls the paint command on the bit map. You 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 bit map. You set brush characteristics and exit paint by pressing the right mouse button and selecting 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 bit map. **Paint** is particularly useful for erasing or filling in large regions in bit maps. See the section "The Window Menu" in Chapter 7, The User Interface for a detailed discussion of all the paint menu options.



Figure 10-23. Paint command menu.

## ShowAsTile

Tesselates the current bit map in the gray bar. This is useful for determining how a bit map will look if it were made the display background. The tiled display does not automatically change as

the bit map changes. To update it, use the ShowAsTile command again.

### Grid On/Off

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Turns the editing grid display on or off.

### GridSize

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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.

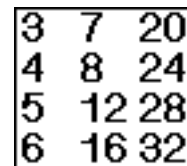


Figure 10-24. The number menu.

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

### Reset

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Sets all or part of the bit map to the contents it had when you originally called the bit map editor. When you select this option, a second menu appears giving you a choice between resetting the entire bit map or just the portion that is in the edit area.



Figure 10-25. The "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 bit map appears in the edit area the menu only has the **WholeBitmap** option.

### Clear

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Sets all or part of the bit map to white space. As with the Reset command, a second menu gives you a choice between clearing the entire bit map or just the portion that is in the edit area.



Figure 10-26. The "CLEAR how much?" menu.



**Cursor**

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Sets the cursor to the contents of the lower left part of the bit map. 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. This option is intended for people extending the NoteCards environment. We recommend that non-programmers do not use this option.

**OK**

---

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

**Abort**

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

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