

## #49 Menus and Buttons in 4th Dimension

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This note explains the Macintosh User Interface as it relates to 4th Dimension.

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The Macintosh uses a very sophisticated operating system. A major portion of this operating system is devoted to the user interface. This interface allows users to focus on their task instead of on operating the computer.

The user is in control of the computer, not the other way around. The computer responds to the users actions. Other computers lead the user through a set of operations that the user has little control over.

One of the features of the interface is consistency. Common operations are performed the same way in all applications. 4th Dimension handles many of the interface issues already, (ie, entering text, alert and request boxes), however, some must be completed by the developer.

This will be a series of technical notes describing user interface and how it relates to developing applications in 4th Dimension. For more information, refer to Chapter 2 of Inside Macintosh, Volume I.

### Menu Bars:

The menu bar is how the user selects the functions they want to perform. The Apple and Edit menus cannot be affected by a 4th Dimension developer.

Menu bars are usually divided into operations and object. The object is the menu title and the operations are the menu items. By combining the two together, a simple statement is made. Some examples are PRINT (the) FILE, SAVE (the)FILE.

An ellipsis (...) is placed after items that will bring up a dialog to aid the user, an example of this is Print... or Page Setup... .

Menu bars can contain command key equivalents. These are useful for "power users" and keyboard pros. Try to use the first letter of the command as the key equivalent if possible. Two character combinations are not possible. There are some standard key equivalents that Apple has reserved for specific functions. Do not to use these for other purposes.

Command	Function
Q	Quit
Z	Undo
X	Cut
C	Copy
V	Paste
?	Help
.	Cancel



Other functions have recommended key equivalents. If your program uses these operations, then try to use these key equivalents. They can, however, be used for other operations if desired.

Command	Function
N	New
O	Open
S	Save
P	Print
W	Close

Command characters should be in uppercase, for consistency.

Menu items should be disabled if they are unusable or do not apply in a particular situation. If all of the menu items are disabled, then the menu title should be disabled as well. In 4th Dimension, there are two ways to disable menu items. They can be disabled in the definition of the menu (ie in design environment, this is suitable if they are to be disabled on startup), or during the execution of the program. During execution, menus are disabled using the DISABLE ITEM command.

Menu items can be marked with special characters to show that they have been selected by the user. This is possible in 4th Dimension by using the CHECK ITEM command. The most commonly used character is the check mark (✓ ASCII 18). Checked items can be used to tell the user which selection is currently in effect (as in a font menu) or if several are in effect at once (as in a style menu). Note that in a Style menu, the Plain Text option cancels all the others. To clear a checked item, use a space or a null string in the CHECK ITEM command.

Menu items can also be toggled between two different menu texts. An example of this is Show Footer/Hide Footer in a word processing application. The menu reflects what will happen if the user selects the menu, and then changes the text to show the reverse. To do this in 4th Dimension, create two menu bars containing the alternating text and use MENU BAR to change menus. Use this only when the menu items have opposite functions.

Dotted lines are used to group related menu commands together, they are helpful in that they increase clarity. Remember to disable dotted lines.

Some common menu commands are always placed in the same position. Quit should always be at the bottom of the File menu and separated by a dotted line if other options are present. Print usually comes near the bottom of a File menu as well. Items in a menu should be in a time ordered sequence, ie operations that will happen before other operations should come before them in the menu. Open should come before Close, etc. Also, the most frequently accessed items should be closer to the top, and infrequent actions near the bottom.

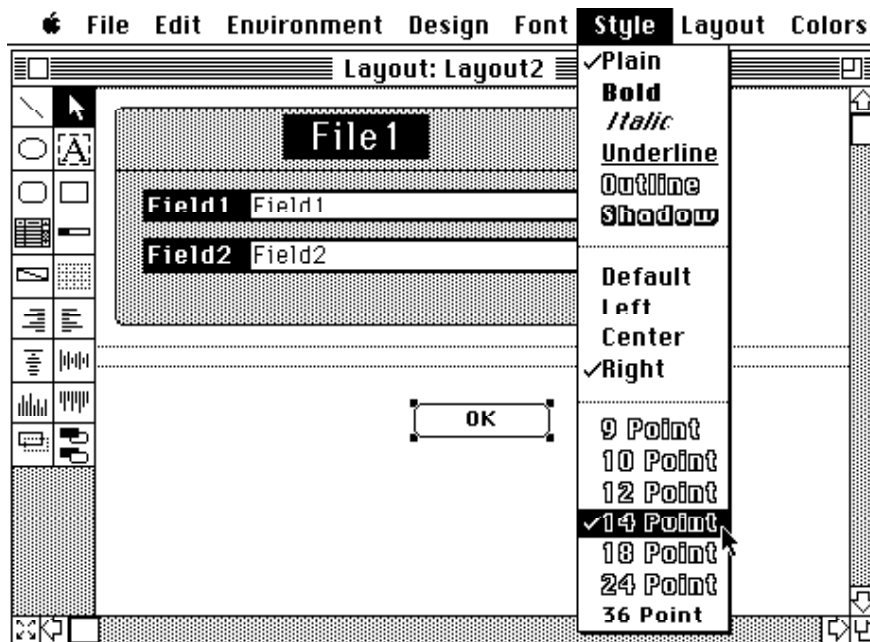
Icons are permitted in menu bars, but make sure they are recognizable, (ie don't make your printer icon look like a dog). Refer to 4th Dimension tech note 48 for information on how to include icons.

If a menu is longer than the screen, the operating system will automatically display a down arrow and scroll the screen when necessary. It is not recommended to make menus longer than the screen because they are inconvenient. Long menus are usually of the type that are user created, like font menus.

### **Buttons:**

Standard OK & Cancel buttons should be 14 point in size. To change a button to 14 point size, select the button and choose 14 point from the Style menu.



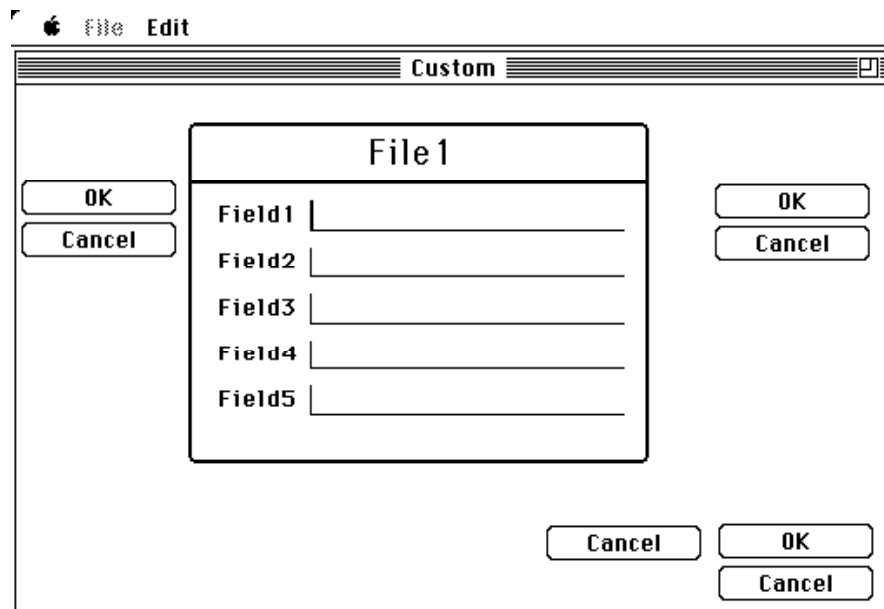


The relative position of the buttons is important. The OK button should be placed either above or to the right of the Cancel button. The buttons should be the same size. Buttons should be consistently placed and sized throughout the whole application (ie, OK and Cancel buttons should be the same size and in the same place on all layouts if possible).

Buttons, like menus, should be disabled if they cannot be used or are inappropriate. Buttons can be enabled and disabled using the DISABLE BUTTON/ENABLE BUTTON commands.

The placement of the buttons on the screen should be in one of three places, the bottom right corner of the screen, or one third of the way down from the top on either the left or the right side. If only a single button is to be used (ie Done), then it should be placed at the bottom right corner.

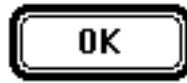




Standard Button Placements.



To make a button appear as a default button (ie, one with a dark line around it) use a 3 point line placed one pixel away from the button .



Buttons should always be aligned either horizontally or vertically so that they do not attract unnecessary attention, and should be in groups of the same sizes,widths, and height. Use Duplicate to create identically sized buttons.

**Conclusions:**

User Interface is an essential part of developing with 4th Dimension. It is the developers responsibility to ensure that his/her applications present a consistent interface. The interface must be consistent with itself, and with other applications.

