

# Practical HI Examples

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This is a Human Interface design handout I just pulled together for CS108. I think this material's a lot of fun.

## A Control's Appearance Should Communicate How It Works



The handle says "pull" more effectively than the letters say "push". Who hasn't tugged on one of these for a while before realizing that the door only opens out. The door should have a flat, visually obvious plate for pushing at hand level. Then, no "push" sign would be necessary at all. People would just unconsciously see the visual cue and do the right thing.

(Photo by Nick Parlante from the Menlo Park Blockbuster Video store.)

### **A Control's Appearance Should Communicate How It Works**

The arrangement of the levers on this faucet makes it clear which way they turn to operate. The appearance is so clear, it never occurs to you to try to turn the lever the wrong way. It may have been an accident of the installation, but at least for the right handle, it works great. The left handle is a little awkward to get to.



Front view



Side view

(Photos by Nick Parlante from the bathroom of Ginger Club in the Stanford mall. Brian Skinner pointed the faucet out.)

## Controls Should Be Visually Logical

An Aiwa CSD EX-111 combination CD player, radio, tape player.



Front view



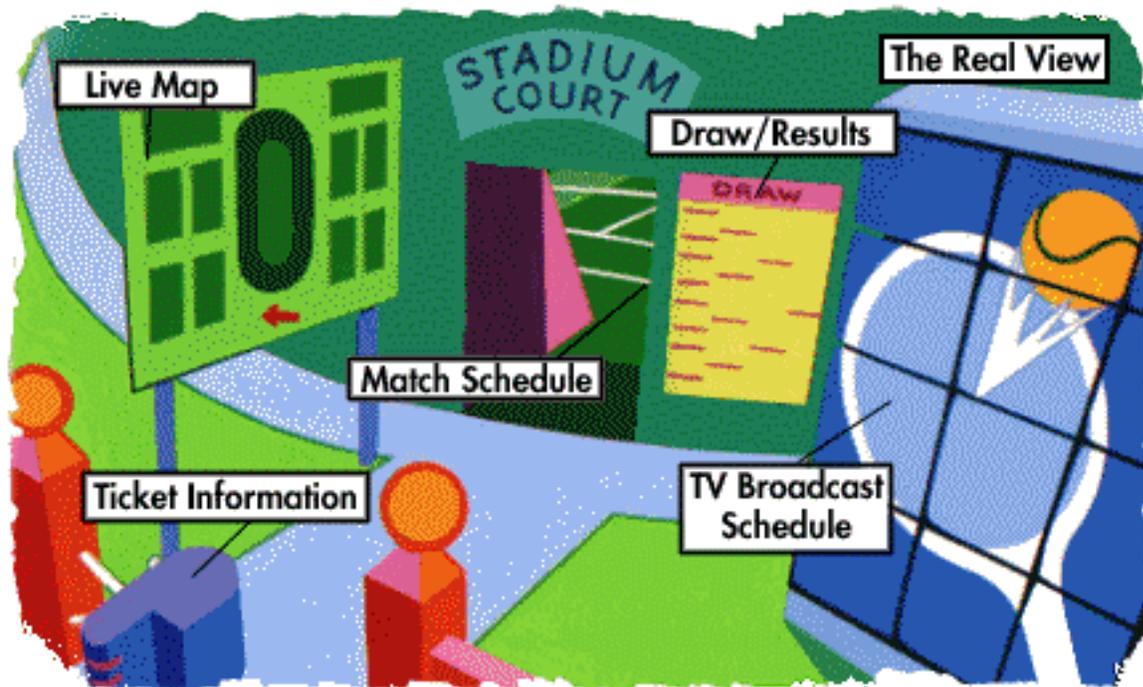
Angled view, with tape and CD compartments open (Photos by Nick Parlante in the Cambridge Soundworks on University Ave. in Palo Alto)

The tape unit is in the front while the CD player is in the top. The problem comes from the arrangement of the controls. The controls for the CD player are on the front of the unit next to where the tape goes. Conversely, the controls for the tape player are on the very top of the machine next to where the CD goes. It's intuitive to think that controls operate on the thing they are adjacent to. This unit should have followed that convention, or at the least had some visual cues to indicate which controls go with which thing.

Artistic instincts which lead to poor HI:

- The appeal of symmetry and uniformity. Things with different functions should look different.
- The appeal of being artsy, different, and entertaining at the expense of being informative.

## Clickable Controls Should Look Clickable

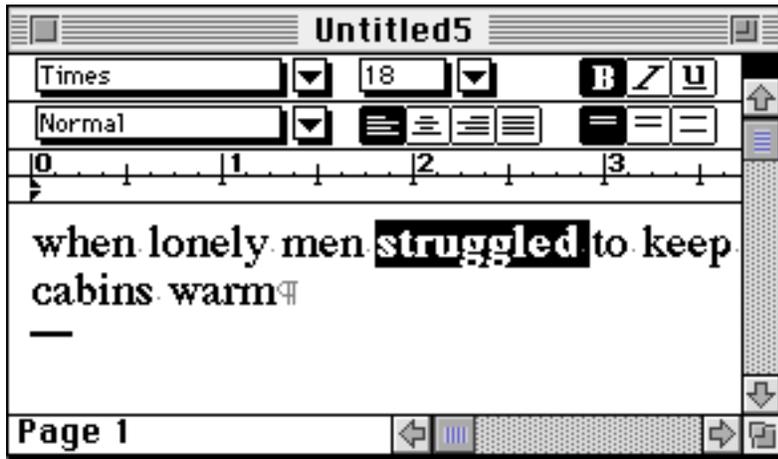


Where exactly can you click? When I first saw this, I felt a little overwhelmed. Partly the graphic style with so many random angles and colors is a bit confusing, and partly it's just not clear which parts of the picture elements are clickable. The little lines are attempt to distinguish what's clickable, but if the clickable elements themselves were visually well distinguished, the lines wouldn't be necessary. From the [www.usopen.org](http://www.usopen.org) home page, which is otherwise of very high quality.

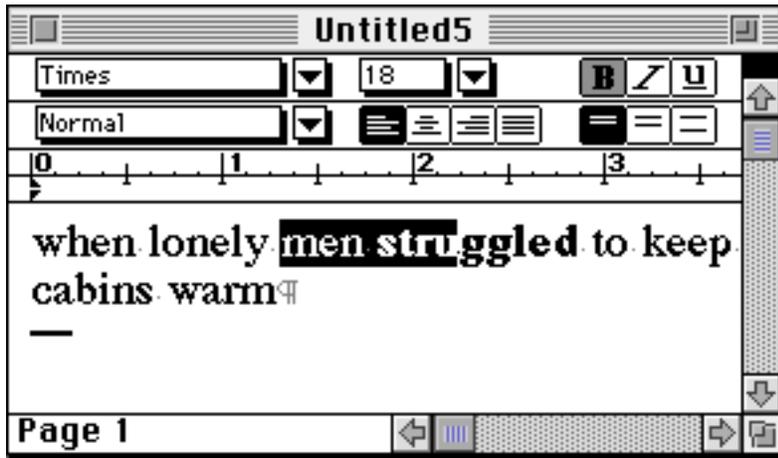


Having visually distinguished controls doesn't mean it needs to look boring. "The Spot", in content and appearance, is as frivolous and creative a site as you might want. But even on this page it's pretty clear that the button icons at the top and the stars in the picture are clickable, but the rest of the elements probably are not. (www.thespot.com)

## New Appearances for New Behaviors



A “push in” button for boldness in Word 5.1.



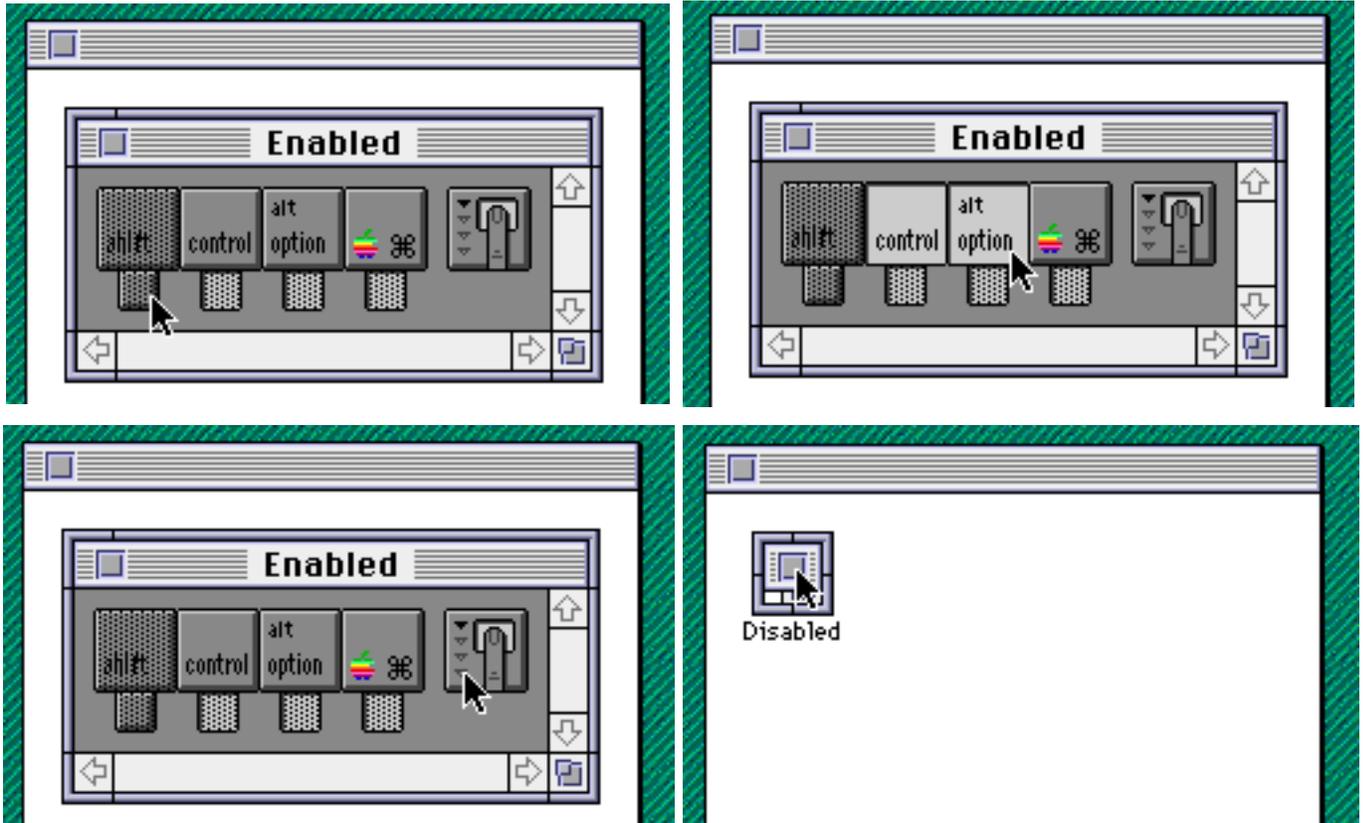
Tricky “mixed” case where the selection is partly bold and partly not. The button has a distinct gray appearance for the mixed case.

The image shows a 'Character' dialog box with the following controls:

- Font:** A dropdown menu.
- Size:** A dropdown menu.
- Underline:** A dropdown menu.
- Color:** A dropdown menu.
- Buttons:** OK, Cancel, and Apply.
- Style:** A list of checkboxes: Bold, Italic, Outline, Shadow, Strikethru, Small Caps, All Caps, and Hidden. All checkboxes are currently checked.
- Position:** Radio buttons for Normal, Superscript, and Subscript. A 'By:' label is next to the radio buttons, with an empty input field.
- Spacing:** Radio buttons for Normal, Condensed, and Expanded. A 'By:' label is next to the radio buttons, with an empty input field.

New appearance of check boxes for the “mixed” case. Arguably a reasonable extension since the clear “on” and “off” cases keep their own appearance, and there is a new, clearly different appearance for the new case. Some argue that a brand new control is called for instead of something which partly works and looks like check box, and partly does not. It’s lame that the italic and other boxes have fallen back to the mixed appearance— only bold should be mixed, all the others should be off. It was no doubt more convenient to program to have them all go mixed when the selection was complex.

## Non-Standard Behavior with Standard Appearance

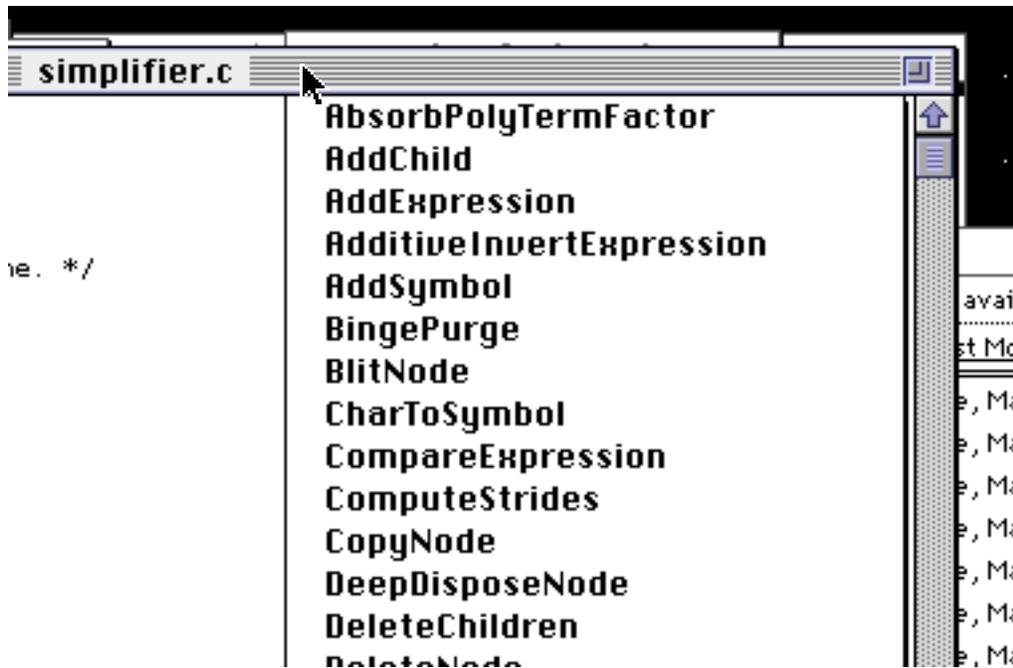


The “Stretch” shareware control panel lets you control what user actions miniaturize the window. This program has the worst interface of any that currently come to mind. It’s cute, but basically unusable. The buttons do not behave in a predictable way, especially not the rightmost one, where single, double, etc. clicks mean different things. Also clicking the right button causes all the other buttons to pop out for some reason.

## Explicit Things To Click On



Metrowerks provides a small button to click on to bring up the list of methods. The button also has the correct hilite/click-loop behavior so you can click-move-off to see what it does without messing anything up.



Symantec provides a similar feature, but with no explicit control. You command-click in the window title area.

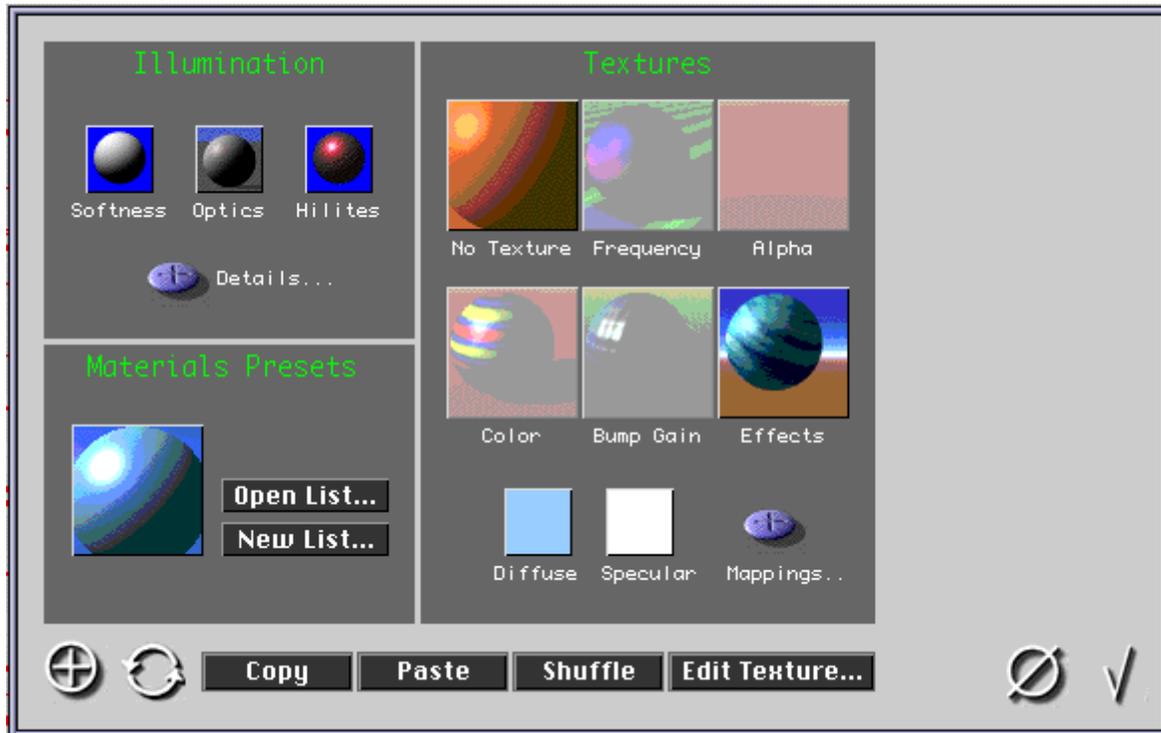
Many web pages have the problem that it is not entirely clear what to click on, and they lack the click-move-off tracking so testing the waters is harder. Knowing what actions are available is useful to users. Programmers and web page authors never notice this since they always know what actions are available.

## Direct Manipulation

MineSweeper 2.0									
●	Time: 00:52				Done		1		
1	1	1						1	1
1	●	1	1	1	1		1	2	■
2	2	2	2	●	2		1	■	■
2	●	2	2	●	2		1	1	1
■	■	3	1	2	2	1			
■	■	2		1	■	1			
■	■	2		1	1	1			
■	■	1						1	1
■	■	1						1	■

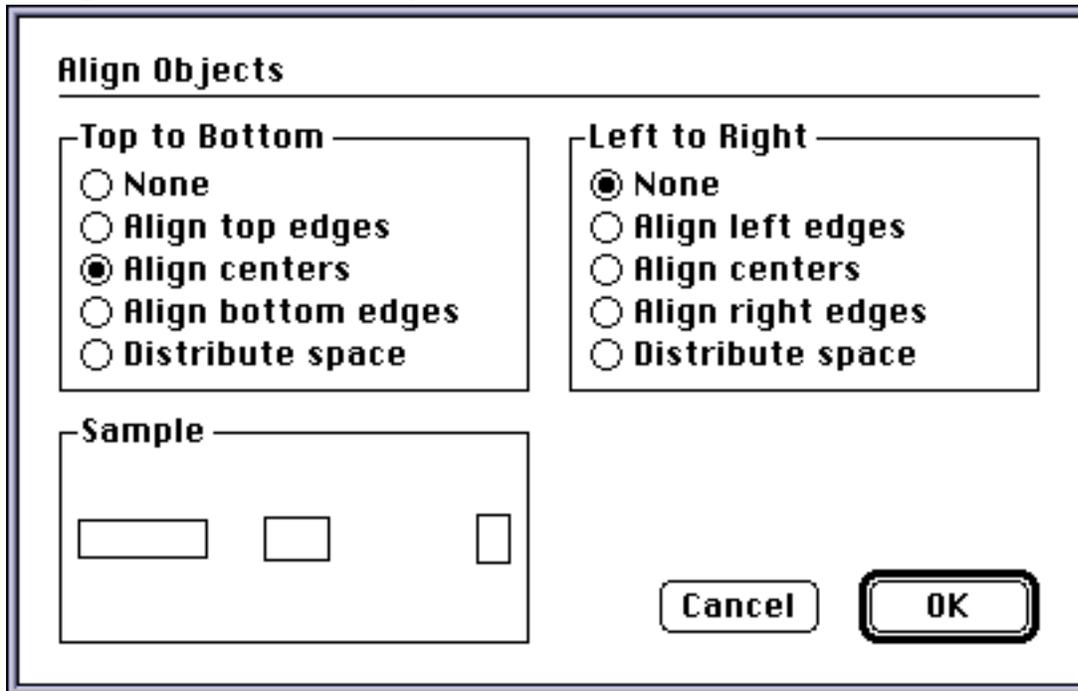
MineSweeper has a traditional noun/verb interface where you click to uncover a square, and hit the space bar to mark a square. Though easy to learn, I very often would mess up because clicking the mouse button and hitting the space bar were too similar. It turns out that MineSweeper also has a direct manipulation interface where you drag a mark from the upper left hand corner to a square to mark it. In fact you can drag marks around from anywhere and it works. This interface is much easier to use in my opinion, but I only learned of it when I read the documentation.

## Caught Up In You Own Cuteness — Pictures vs Text

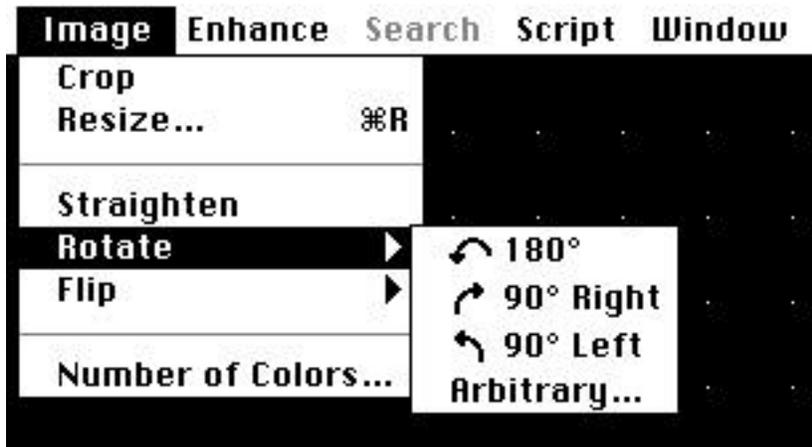


What do those things on the bottom do? Were icons really clearer than text for all of those? From KPT Bryce Materials Editor dialog. Pictures vs. Text is a non-trivial tradeoff in the interface. Pictures are always more *appealing*, but they are not always the most *informative*. Which is appropriate depends on what you need to communicate and whether it has a clear visual representation. Watch out if you find yourself using arrows. They often don't mean a lot more than "something happens".

## Using Pictures to Convey Information

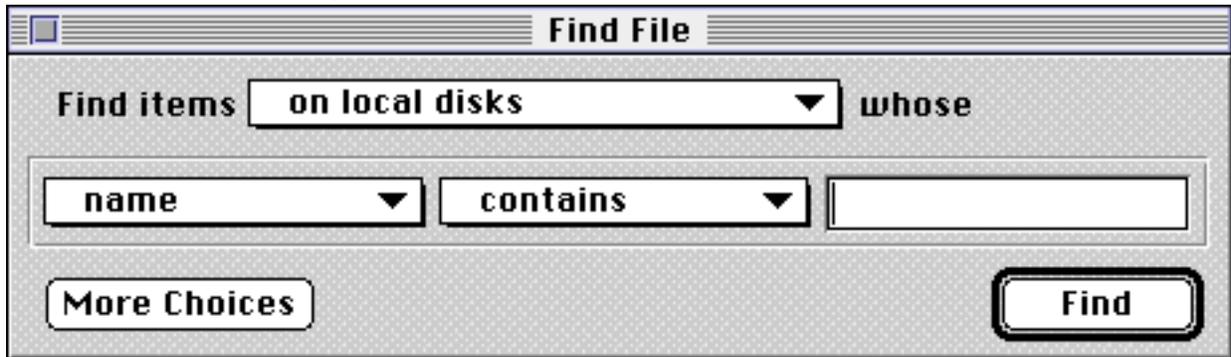


ClarisWorks 3.0 uses words to describe what's going to happen and unthreatening visual feedback to reinforce the selected action. It's not flashy, but it sure is easy to use.

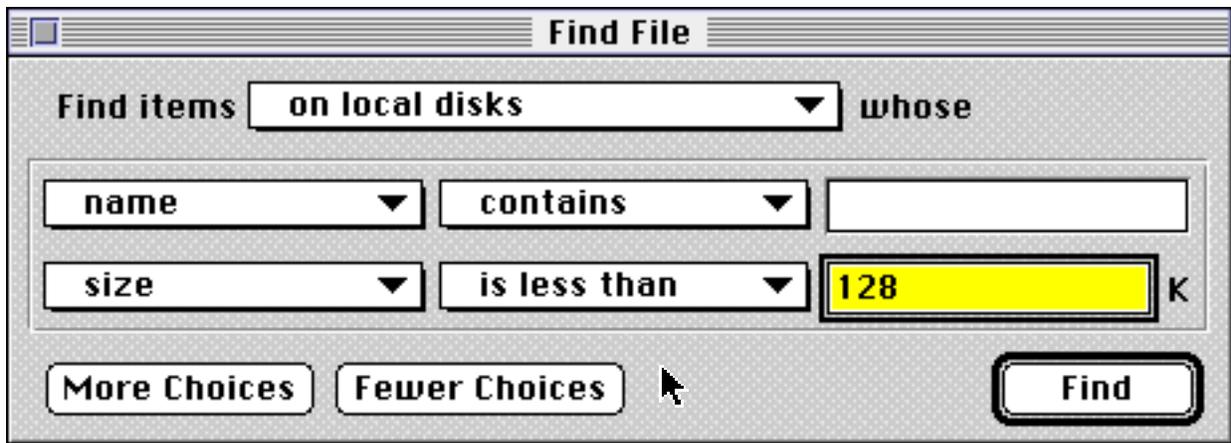


Great use of pictures to convey the operation of the Rotate menu in the PhotoFlash image editing program.

## Smooth Extensibility

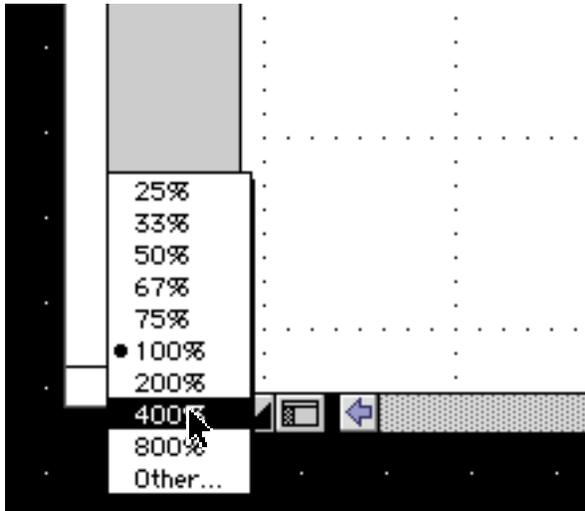


The simple Find File command in the Finder. Clicking on More Choices adds more clauses to the search.



Allow experts to get to sophisticated features without intimidating the average user. “Make easy things easy and hard things possible.” Programmers are mostly expert users, so they underestimate how intimidating a window with many controls in it can be. It would be nice if there were some visual feedback whether the clauses are combined with AND or OR.

### Pop-Up Problems

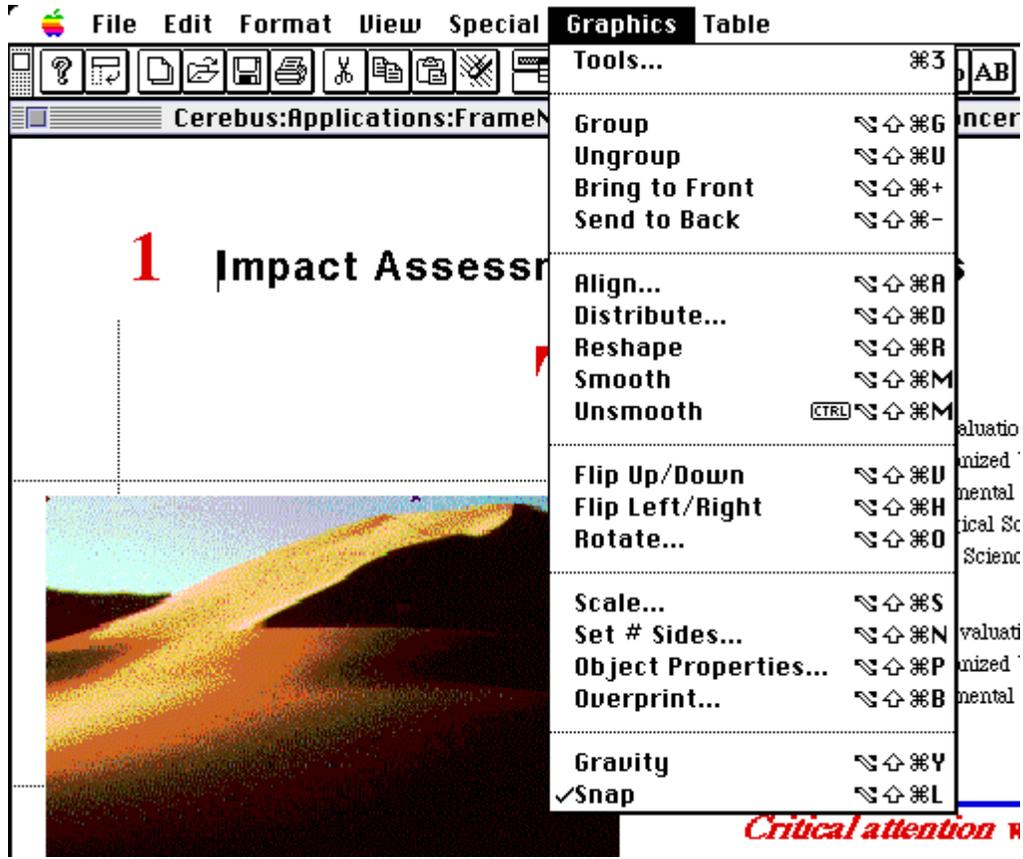


ClarisWorks 3.0 pop up scrolling up to avoid the bottom of the screen, but thereby changing the current setting. For a pop-up, ideally clicking and releasing without scrolling in the list should do nothing—really just the old click-move-off behavior from buttons.

### Menu Problems

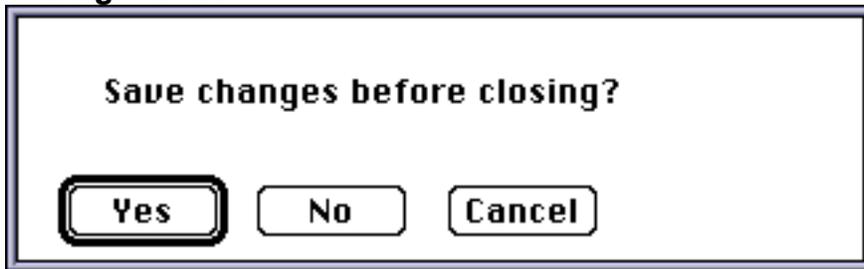


Strategic Conquest 3.0 uses 'S' and 'W' which have other meanings. Possibly allowable since ordinary document operations like saving and closing are relatively rare in a game.



From the Frame publishing program. Maybe a few too many command keys. The menu is pretty ugly looking. Are “Gravity” and “Snap” operating as a radio group with two items, or are they each a check box— that’s a problem with using menu items as something more than a simple action initiator.

## Dialog Boxes

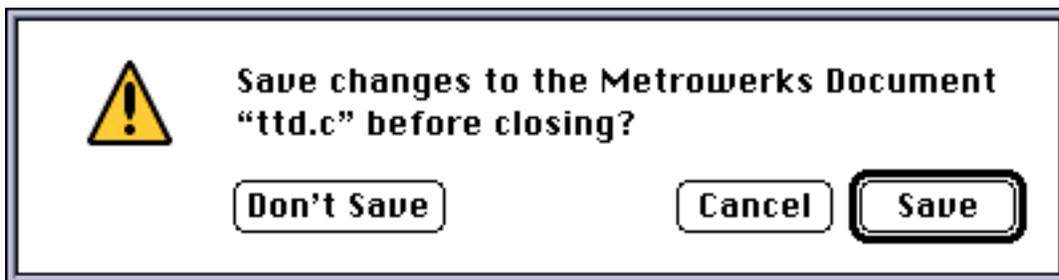


You have to read the text to interpret the "yes" or "no" correctly. It feels like the "default" action should be on the right. Finally, there's no feedback about what document the dialog is talking about. From, surprise!, Microsoft Word 5.1.

Select Quit in Stanford Federal Credit Union bulletin board and the following appears...

```
+
+
+-----+
+      Exit CUOnline [Y]=Yes [N]=No [R]=Return to Login?: [Y]      +
+-----+
+                                                                24:10 +
```

Basically the same problem. I always have to read the text to remember that 'y' means quit while 'n' means log in again.



The Save dialog done right from the Metrowerks compiler. The buttons say what they do. This feels much more sure when clicking because the button title corresponds to what you are thinking— "save" or "don't save". Also, after you've seen it a few times, you will no longer bother to read the text message. You already know what it's asking, and you just go for the button you want. With the yes/no dialog, you always have to read the message. The default button is in the right position. Finally, there's feedback in the message to indicate what document it's talking about which is reassuring during normal operations and may help the user notice their error if they get to this dialog incorrectly.