

Assignment 3

Investigating and Confirming HCI Theories

Application Due: 1:00 PM, Tuesday, November 19, 2002

1 Scenario

Various theories are proposed in the field of human-computer interaction. Rather than simply accept them, you would like to devise tests to determine their veracity. In this programming assignment you will examine some issues related to the display of text.

2 Mac OS X Reminders

For this assignment, you will need to use a Macintosh running Mac OS X 10.2, with the developer tools installed. Suitable machines are available in the CIS Macintosh lab.

Assignment 1 included instructions for using the CIS Macs. The key points were to reboot the machine while holding down the option key to get the Open Firmware boot options screen, and to reboot the machine to return it to Mac OS 9 when you're done.

3 Create a Simple Text Display Application

In class you saw an application that displayed a piece of text quickly, word by word (were the text was a sequence of words, separated by spaces). The display showed each individual word in the same location on the screen, allowing successive words to be read with no eye movement. This application can be used to provide a crude estimation of how much of time spent reading is used to perceive individual words and how much time is spent on eye movements. The application allowed different pieces of text to be pasted into the text box it “read from”, and provided controls for display speed and to start and stop the display.

You should:

1. Create an application with the same overall functionality as the application you saw in class
2. Test the application, comparing reading speed with the application to normal reading (“static text”) speed. (Use distinct sections of text with similar difficulty and length—do not read the same piece of text multiple times. Time how long

it takes to a section of text in your favorite editor, and how long it takes to read a similar piece of text with your application. Sample text will be available on the course web site.)

3. Describe the results of the above test. You should include
 - How your static text was presented
 - How many words per minute you achieved reading static text
 - How many words per minute you achieved reading with the word-by-word system
 - Discuss any problems that arose while reading long text passages with the word-by-word system

Include your description as readable text in the “About...” box for your application. (You should not use your word-at-a-time reader to display this text.)

4. Extend the application in a straightforward way that makes it more usable by giving the user better control over the text display

Your application must adhere to the following standards:

- Controls should be laid out sensibly
- Controls should remain usable while the application is displaying text
- Threading may not be used in your code

The following Objective-C classes may be of interest: NSTimer, NSString, and NSArray.

4 Submission

You will submit your code by copying it to a drop folder on odin. The procedure is as follows:

1. Create a new folder in your home directory, and name it so that it matches your CIS username. If you wish to resubmit, rename the folder adding -1, -2, etc. to the end of its name.
2. Copy your application (which can be found in the `build` subdirectory of your project directory) into the new folder. *Do not copy the entire project builder project.*
3. Using the Finder, navigate to `/home/cs/cs124test`.
4. Using the Finder, copy your folder into the CS 124 Drop Folder in `cs124test`.