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NeXTstep Measurement Kit: Historian

The NeXTstep Measurement Kit consists of two modules. The first, Recorders, is discussed in its own documentation. The second, Historian, is discussed herein. Together, they provide software developers with the ability to measure and view data about how users interact with user interface

items. These capabilities can be added to existing source code with a minimum of effort.

Historian can be used by anyone familiar with the NeXT, regardless of programming ability. Historian, however, will be most useful to developers who are using Recorders. Thus, this documentation assumes familiarity with the NeXT Application Kit, Interface Builder, and Recorders.

Introduction

Historian is the human interface to the NeXTstep Measurement Kit (NMK). It allows users to browse through an application's user interface data, as collected by Recorders and stored in a transcript file. Such files have a .trnsrpt suffix and look like this.

trnsrpt.tiff ↵

The transcript database is organized hierarchically into four sections: Buttons, Sliders, Scrollers, and Menus. These correspond to the types of objects that are measured by NMK. A standard NeXT Browser (like the File Viewer in the Workspace Manager) is used to navigate this hierarchy. Special windows called Presenters show the data for each selected user interface item. Each item type has its own type of Presenter.

Historian only reads transcript files. It cannot be used to modify them. Thus, data cannot be accidentally destroyed or corrupted. Also, only one transcript file may be opened at one time.

Using Historian

Historian can be invoked either from UNIX or from the Workspace Manager. From the Workspace

Manager, double-clicking a transcript file will bring up Historian. Or, Historian can be run directly by double-clicking the Historian icon.

Historian.tiff ↵

The Menu

Historian's menu contains four commands. The "Open..." command is used to view a specific transcript file. The "Close" command ends the viewing session for the current transcript file. Note that since only one file may be opened at once, either "Open..." or "Close" will be dimmed. The menu is shown below as it appears when a transcript file is being browsed.

menu.eps ↵

The "Hide" and "Quit" commands act as they would in any other NeXT application. Note that there is never any work to save before quitting.

The Browser Window

Historian's main window contains a standard NeXTstep browser which gives the user access to the hierarchy of user interface objects represented in transcript files. The first column lists the types of items in the database. The second column lists the "keys" of items of the type selected in the first column. The picture below shows what the window looks like when viewing the "Edit" menu item in the file app.transcript.

browser.eps ↵

Whenever an item in the second column is selected with the mouse, a second window appears on the

screen. This window is a Presenter window and shows the data for the selected item. Each type of item has its own Presenter, as described below. The values in Presenters cannot be edited.

The ButtonPresenter Window

Historian shows transcript data for a Button by means of the ButtonPresenter Window. Below is data for a radio button.

buttons.eps ↵

The first six fields come from the item's key: "text" is the name of the Button (or the name of the icon it displays); "tag" is the value of the Button's tag as set in the program or Interface Builder; "x" and "y" give the lower-left corner of the Button's rectangle in the coordinate system in which it is drawn; and "width" and "height" are also for the rectangle. The field "numHits" counts the number of

invocations of the Button. And "numCancel" shows how many times users clicked on the Button, only to drag out before releasing the mouse button. The value in "timeIn" shows the total number of seconds that the button was invoked. Finally, "timeBetween" is the total number of seconds between the end of each invocation and the start of the next.

The SliderPresenter Window

Historian shows transcript data for a Slider in a SliderPresenter Window. Below is shown the SliderPresenter for a vertical slider.

sliders.eps ↵

The SliderPresenter is much the same as the ButtonPresenter. The "text" field shows the name assigned to the Slider by Interface Builder or the application. Note that there is no "numCancel" for

Sliders because they cannot be cancelled. The bottom of the SliderPresenter Window shows the Slider's histogram. The histogram indicates the relative number of times that the Slider has been positioned into each of ten value ranges.

The ScrollerPresenter Window

Historian shows transcript data for Scrollers in a ScrollerPresenter Window. Below is a ScrollerPresenter for a vertical Scroller.

scrollers.eps ↵

This is a superset of a SliderPresenter. The "text" field is generally either "horiz" or "vert" because most Scrollers do not have names or text associated with them. The extra "num..." fields count hits in the various parts of a Scroller. The knob is the draggable indicator. The knob slot is the area above

and/or below the knob. There are also buttons which can either increment or decrement the Scroller's value by either a line or a page depending on the state of the Alternate key. These fields should be self-explanatory.

The MenuPresenter Window

Historian shows transcript data for a Menu item by means of the MenuPresenter Window. Below is data for a Menu entitled "Edit".

menus.eps ↵

The MenuPresenter should look familiar. Since Menus are just Buttons, the MenuPresenter works the same as the ButtonPresenter.

Historian.rtf -- user manual for Historian
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