
Subject: Re: X-windows text events

Posted by [David Fanning](#) on Thu, 04 Apr 2002 13:39:43 GMT

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Niel Malan (Niel.Malan@aber.ac.uk) writes:

> I'm writing a compound widget, basically a text widget with modified behaviour (returning the selected line as value)
>
> I'm using IDL 5.4, running an X-windows on Windows NT, the server being some Compaq workstation.
>
> My problem is that when my widget application is running, mouse actions in other X-windows, including the IDLDE, generate
> events. At the moment the problem is small, only bothering me when editing in the IDLDE, but I see trouble ahead.
>
> Am I doing something wrong, or is this just the way things are?

I guess I'd put my money on the "something wrong" theory.
But it is impossible to say what with this short description.

Cheers,

David

--

David W. Fanning, Ph.D.

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Subject: Re: X-windows text events

Posted by [Niel Malan](#) on Thu, 04 Apr 2002 16:22:12 GMT

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On Thu, 4 Apr 2002 06:39:43 -0700, David Fanning <david@dfanning.com> wrote:

> Niel Malan (Niel.Malan@aber.ac.uk) writes:
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> I guess I'd put my money on the "something wrong" theory.

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The idea of my line-based text widget is that it should only select lines, return the selected line as GET_VALUE, and replace the selected line with SET_VALUE. I do that by capturing events from a text widget, examining the position of the cursor/selection, and then setting the selection to the beginning and end of that line. WIDGET_CONTROL's GET_VALUE and SET_VALUE then uses this selection.

The compound widget works well, but there is some side-effect behaviour. When the widget is first started, behaviour is normal. However, once the compound-widget event handler has handled some events, events are generated for text selection attempts on all open X-windows. Sometimes this behavior disappears after working in MS windows, but returns once the event handler has handled events: I can't yet replicate this at will.

The nett effect is that it is impossible to select text from other X-windows while my widget is running. This includes the IDLE and IDL online help.

The code is below.

Niel

This is my compound widget, created from the IDL template:

```
;-Get & Set Value routines -----
PRO textline_set_value, id, value
  stash = WIDGET_INFO(id, /CHILD)
  WIDGET_CONTROL, stash, GET_UVALUE=state, /NO_COPY

; Set the value here.
  WIDGET_CONTROL, state.id, SET_VALUE = value, /USE_TEXT_SELECT, /NO_NEWLINE

; Send an event so that the newly inserted text is selected
; If you don't do this the next SET_VALUE inserts text
  id = long(state.id)
  top = WIDGET_INFO(LONG(state.id), /PARENT)
```

```

handler = 0L
structure = {id: id, top: top, handler: handler}
WIDGET_CONTROL, state.id, SEND_EVENT = structure

; Restore the state.
WIDGET_CONTROL, stash, SET_UVALUE=state, /NO_COPY
END

FUNCTION textline_get_value, id
  COMPILE_OPT hidden
  ON_ERROR, 2
  stash = WIDGET_INFO(id, /CHILD)
  WIDGET_CONTROL, stash, GET_UVALUE=state, /NO_COPY

; Get the value here
WIDGET_CONTROL, state.id, GET_VALUE = value, /USE_TEXT_SELECT
; Restore the state.
WIDGET_CONTROL, stash, SET_UVALUE=state, /NO_COPY

;Return the value here.
RETURN, value
END

```

;-----Compound Widget event handler-----

```

FUNCTION textline_event, ev
  COMPILE_OPT hidden
  parent=ev.handler

;get the selection/cursor location
selection = WIDGET_INFO(ev.id, /TEXT_SELECT)
xy = WIDGET_INFO(ev.id, TEXT_OFFSET_TO_XY = selection[0])

; get the beginning of the first line of the text
start = WIDGET_INFO(ev.id, TEXT_XY_TO_OFFSET = [0,xy[1]])

; get the beginning of the second line
end1 = WIDGET_INFO(ev.id, TEXT_XY_TO_OFFSET = [0,xy[1]+1]) - 1
; handle out-of-bounds end: set end to end of text
IF end1 LT 0 THEN BEGIN
  end1 = WIDGET_INFO(ev.id, /TEXT_NUMBER)
ENDIF

; end1 now must have valid value; handle invalid start by
; pointing start to the first position of the same line
IF start LT 0 THEN BEGIN
  xy = WIDGET_INFO(ev.id, TEXT_OFFSET_TO_XY = end1 - 1 )
  start = WIDGET_INFO(ev.id, TEXT_XY_TO_OFFSET = [0,xy[1]])

```

ENDIF

; Set the selected text

WIDGET_CONTROL, ev.id, SET_TEXT_SELECT = [start, endt-start]

;This print statement show when the event occurred

print, start, endt, SYSTIME(0), FORMAT = '("Start: ",I4," End: ", I4, " Time: ", A0)'

RETURN, { ID:parent, TOP:ev.top, HANDLER:0L }

END

;----Widget creation routine -----

FUNCTION cw_textline, parent, UVALUE = uval, UNAME = uname, VALUE = value, _EXTRA = extra

IF (N_PARAMS() EQ 0) THEN MESSAGE, 'Must specify a parent for cw_textline'

; Defaults for keywords

IF NOT (KEYWORD_SET(uval)) THEN uval = 0

IF NOT (KEYWORD_SET(uname)) THEN uname = 'cw_textline_UNAME'

state = { id:0 }

mainbase = WIDGET_BASE(parent, UVALUE = uval, UNAME = uname, \$

EVENT_FUNC = "textline_event", \$

FUNC_GET_VALUE = "textline_get_value", \$

PRO_SET_VALUE = "textline_set_value")

state.id = WIDGET_TEXT(mainbase, VALUE = value, /ALL_EVENTS, YSIZE = 10)

WIDGET_CONTROL, WIDGET_INFO(mainbase, /CHILD), SET_UVALUE=state, /NO_COPY

RETURN, mainbase

END

;-----End of line-selecting compound widget -----

This is an example widget program that uses the compound widget:

; ----- Compound widget testing program -----

PRO textline_test_event, event

WIDGET_CONTROL, event.top, get_uvalue = tuv

IF event.id EQ tuv.button1_id THEN BEGIN

WIDGET_CONTROL, tuv.text_id, SET_VALUE = 'Replacement Text'

ENDIF

IF event.id EQ tuv.button2_id THEN BEGIN

WIDGET_CONTROL, tuv.text_id, GET_VALUE = value

PRINT, FORMAT = '("Got value: ->",A0,"<-")', value

ENDIF

RETURN

END

```
PRO textline_test
base = WIDGET_BASE(/ROW)
text_id = cw_textline(base, VALUE = [ 'Line of text', $
    'Next Line', $
    'Another line', $
    'One more', $
    'But this is the last one'], $
    YSIZE = 10 )
button1_id = widget_button(base, VALUE = '[Set Value]')
button2_id = widget_button(base, VALUE = '[Get Value]')
ids = {text_id:text_id, button1_id: button1_id, button2_id: button2_id}
widget_control, base, SET_UVALUE = ids
widget_control, base, /realize
xmanager, 'textline_test', base, /NO_BLOCK
END
```

;----- End of testing program -----

Subject: Re: X-windows text events

Posted by [David Fanning](#) on Thu, 04 Apr 2002 16:52:27 GMT

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Niel Malan (Niel.Malan@aber.ac.uk) writes:

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> IDLE and IDL online help.

Did I say "user did something wrong" theory? I meant "IDL is nuts" theory. Sorry. :-(

I don't see anything at all wrong with the way you wrote your compound widget. But I have to tell you that it doesn't work so well on Windows machines. (We might have been able to predict this.)

As I spent nearly two weeks testing one time, IDL makes it difficult (impossible?) to select a line of text from a text array in a text widget. There must be something about the way lines end in Windows, but the counting is WAY off, using the keywords you use in your program. I find I have to select the line twice to get the program to work properly. The first time, it grabs characters from the line above in the selection, although it doesn't report these extra characters when it does the Get_Value thing.

Anyway, I don't see any of the odd sorts of things you report. But if I did, it wouldn't surprise me much. :-)

Cheers,

David

P.S. Let's just say I found list widgets handy for selecting lines of text. :-)

--

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Subject: sec : U Re: X-windows text events

Posted by [Andrew Cool](#) on Fri, 05 Apr 2002 01:02:10 GMT

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David Fanning wrote:

>

> Niel Malan (Niel.Malan@aber.ac.uk) writes:

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> characters when it does the Get_Value thing.
>
> Anyway, I don't see any of the odd sorts of things
> you report. But if I did, it wouldn't surprise me
> much. :-)
>
> Cheers,
>
> David
>
> P.S. Let's just say I found list widgets handy for
> selecting lines of text. :-)

Am I allowed to say that Niel's widget works
just fine under OpenVMS, IDL v5.4??

In terms of selecting the text anyway. It does produce
an event for every cursor movement, and the associated
print of the Start and End positions and timestamp.

Andrew

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Subject: Re: X-windows text events
Posted by [Niel Malan](#) on Fri, 05 Apr 2002 09:33:14 GMT
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> "IDL is nuts" theory. Sorry. :-(

To be honest, I've also noticed some wrong-line selection during development, but it went away
after I cleaned up and added
the out-of bounds handling.

> P.S. Let's just say I found list widgets handy for

> selecting lines of text. :-)

Now he tells me! But I want the GET_VALUE thing. Badly.

I'll probably be better off making a compound widget wrapper for a list widget.

Niel
