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. Fanning Software Consulting

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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:

>

>> I'm writing a compound widget, basically a text widget with modified behaviour (returning the selected line as value)

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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
endt = 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 endt LT 0 THEN BEGIN
 endt = WIDGET INFO(ev.id, /TEXT NUMBER)
ENDIF
; endt 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 = endt - 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
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:

- > 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
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- > handler has handled events: I can't yet replicate this at will.

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> 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.

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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> 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. :-)
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

Andrew D. Cool .->-.

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Email: andrew.cool@dsto.defence.gov.au

Subject: Re: X-windows text events

Posted by Niel Malan on Fri, 05 Apr 2002 09:33:14 GMT

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On Thu, 4 Apr 2002 09:52:27 -0700, David Fanning <david@dfanning.com> wrote:

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

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- >> IDLE and IDL online help.

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- > Did I say "user did something wrong" theory? I meant
- > "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