
Subject: Re: Widgets and contour plots
Posted by [btt](#) on Wed, 05 Jan 2005 13:10:47 GMT
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Clive Cook wrote:

> Hi,
>
> I am trying to write a widget program were buy passing the cursor over a
> contour plot a varying 2d plot changes according to the value where the
> cursor lies. I have a contour window with two boxes below that display the
> corresponding x and y values from the cursor location. So, i want to take
> the x value to produce a corresponding plot of the contour values against
> the y value.
>
> How do i take the x value and use that to generate a new plot?
>

Hi,

I'm not sure I completely understand what your needs are. In general, you can transform your mouse location into data space location using `CONVERT_COORD`.

From there you have to have some way of 'getting' the interpolated values of your contour for that location. You can use the well known Fanningistic approach to storing valuable program info in the the top level base's `UVALUE` property.

Is that close?

Ben

START

MyDrawEvent, ev

```
;get your valuable info
Widget_Control, ev.top, GET_UVALUE = info, /NO_COPY
;set the current device state to match the draw widget's
Widget_Control, ev.ID, GET_VALUE = winNum
Wset, winNum
```

```
;convert from cursor coords to data coords
xy = CONVERT_COORD(ev.x, ev.y, /DEVICE, /TO_DATA)
```

```
;pass your favorite routine to 'get' you contour data
theseContourValues = GetMyContourValues(info.ContourData, xy)
```

```
;set the current window to you other window for plotting
Widget_Control, info.myOtherDrawWidget, GET_VALUE = myOtherWinNum
Wset, myOtherWindowNumber
```

```
;plot 'contour values against the y value.'
```

```
Plot, XY[1], theseContourValues
```

```
;put your valuable info back in a safe place
```

```
Widget_Control, ev.top, SET_UVALUE = info, /NO_COPY
```

```
End ;myDrawEvent
```

```
****FINI****
```

Subject: Re: Widgets and contour plots

Posted by [clive_cook59](#) on Tue, 11 Jan 2005 17:09:50 GMT

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Ben Tupper wrote:

> Clive Cook wrote:

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> your contour for that location. You can use the well known Fanningistic

> approach to storing valuable program info in the the top level base's UVALUE

> property.

```

>
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>
> Ben
>
> ***START***
> MyDrawEvent, ev
>
> ;get your valuable info
> Widget_Control, ev.top, GET_UVALUE = info, /NO_COPY
> ;set the current device state to match the draw widget's
> Widget_Control, ev.ID, GET_VALUE = winNum
> Wset, winNum
>
> ;convert from cursor coords to data coords
> xy = CONVERT_COORD(ev.x, ev.y, /DEVICE, /TO_DATA)
>
> ;pass your favorite routine to 'get' you contour data
> theseContourValues = GetMyContourValues(info.ContourData, xy)
>
> ;set the current window to you other window for plotting
> Widget_Control, info.myOtherDrawWidget, GET_VALUE = myOtherWinNum
> Wset, myOtherWindowNumber
> ;plot 'contour values against the y value.'
> Plot, XY[1], theseContourValues
>
> ;put your valuable info back in a safe place
> Widget_Control, ev.top, SET_UVALUE = info, /NO_COPY
>
> End ;myDrawEvent
>
>
> *****FINI*****

```

Hi Ben,

Thanks for the advice. My problem now is that i seem to have problems locating the value of my draw widget (the 2d line plot window)so that i can

set that as the active window. When i configure my widget base i draw 1 large widget and then thecontour window in the top left in a new widget base, followed by a second draw widget to the left in a new widget base (contains the 2d line plot), followed my a widget below containing test boxes that display the values of the data at the points of the cursor.

I am

getting confused as to how to obtain the values of my various draw widgets,

any help would be useful.

I have tried using Dave Fannings methods but i am a little confused with this.

many thanks

Clive Cook

Subject: Re: Widgets and contour plots
Posted by [David Fanning](#) on Tue, 11 Jan 2005 19:21:09 GMT
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clive_cook59@hotmail.com writes:

- > Thanks for the advice. My problem now is that i seem to have problems
- > locating the value of my draw widget (the 2d line plot window)so that
- > i can
- > set that as the active window. When i configure my widget base i draw 1
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- > base, followed by a second draw widget to the left in a new widget base
- > (contains the 2d line plot), followed my a widget below containing test
- > boxes that display the values of the data at the points of the cursor.
- > I am
- > getting confused as to how to obtain the values of my various draw
- > widgets,
- > any help would be useful.
- >
- > I have tried using Dave Fannings methods but i am a little confused
- > with this.

The graphics window index number (the window number you want to WSET to) is the *value* of the draw widget. If you know the ID of the draw widget (perhaps you clicked somewhere in the window, so the ID is in the event structure) you can easily get the window index number:

```
Widget_Control, event.ID, Get_Value=wid  
WSet, wid
```

If you want to do something in other windows, you have to know either the draw widget ID of those other windows, or the window index number of the other windows in order to draw into them.

Cheers,

David

--

David W. Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Phone: 970-221-0438, IDL Book Orders: 1-888-461-0155

Subject: Re: Widgets and contour plots

Posted by [btf](#) on Tue, 11 Jan 2005 22:43:06 GMT

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clive_cook59@hotmail.com wrote:

> Ben Tupper wrote:

>

>> Clive Cook wrote:

>>

>>> Hi,

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>>> I am trying to write a widget program were buy passing the cursor

>

> over a

>

>>> contour plot a varying 2d plot changes according to the value where

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> Fanningistic
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>> approach to storing valuable program info in the the top level base's
>
> UVALUE
>
>> property.
>>
>> Is that close?
>>
>> Ben
>>
>> ***START***
>> MyDrawEvent, ev
>>
>> ;get your valuable info
>> Widget_Control, ev.top, GET_UVALUE = info, /NO_COPY
>> ;set the current device state to match the draw widget's
>> Widget_Control, ev.ID, GET_VALUE = winNum
>> Wset, winNum
>>
>> ;convert from cursor coords to data coords
>> xy = CONVERT_COORD(ev.x, ev.y, /DEVICE, /TO_DATA)
>>
>> ;pass your favorite routine to 'get' you contour data
>> theseContourValues = GetMyContourValues(info.ContourData, xy)
>>
>> ;set the current window to you other window for plotting
>> Widget_Control, info.myOtherDrawWidget, GET_VALUE = myOtherWinNum
>> Wset, myOtherWindowNumber
>> ;plot 'contour values against the y value.'
>> Plot, XY[1], theseContourValues
>>
>> ;put your valuable info back in a safe place
>> Widget_Control, ev.top, SET_UVALUE = info, /NO_COPY

```

```

>>
>> End ;myDrawEvent
>>
>>
>> ****FINI***
>
>
> Hi Ben,
>
> Thanks for the advice. My problem now is that i seem to have problems
> locating the value of my draw widget (the 2d line plot window)so that
> i can
> set that as the active window. When i configure my widget base i draw 1
> large widget and then thecontour window in the top left in a new widget
> base, followed by a second draw widget to the left in a new widget base
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> boxes that display the values of the data at the points of the cursor.
> I am
> getting confused as to how to obtain the values of my various draw
> widgets,
> any help would be useful.
>
> I have tried using Dave Fannings methods but i am a little confused
> with
> this.
>

```

Hi,

You just have to maintain access to the window numbers you want use.
You can keep this info in the UVALUE property of the top level widget.
Here's an example...

```

**START**

```

```

;-----

```

```

; event

```

```

;-----

```

```

PRO WheresMyWidgetEvent, ev

```

```

;get the stuff out of the bucket

```

```

WIDGET_CONTROL, ev.top, GET_UVALUE = myStuff, /NO_COPY

```

```

;first copy the 'original data' to the image display

```

```

;then draw a line across at the cursor location

```

```

Widget_Control, myStuff.draw0_ID, Get_Value = win0

```

```

WSET, win0

```

```
DEVICE, COPY = [0,0,myStuff.sz[0],myStuff.sz[1], 0,0, myStuff.pix0]
PLOTS, [0, myStuff.Sz[0]], [ev.Y, ev.Y], /DEVICE
```

```
;now copy the 'baseline' chart to the chart display
;then plot the image values across
;
;**** NOTE **** we only know where to draw this because
;we saved a reference to the widget in the bucket
Widget_Control, myStuff.draw1_ID, Get_Value = win1
WSET, win1
DEVICE, COPY = [0,0,myStuff.sz[0],myStuff.sz[1], 0,0, myStuff.pix1]
OPLOT, LINDGEN(myStuff.Sz[0]), myStuff.image[*],ev.y]
```

```
;put you important things back in the bucket
WIDGET_CONTROL, ev.top, SET_UVALUE = myStuff, /NO_COPY
END
```

```
;-----
; main
;-----
PRO WheresMyWidget
```

```
;make a base widget with 2 draw widgets, one for and image and one for
;a plot... only the widget withg the image will generate events
tlb = widget_base(column = 2)
```

```
sz = [200,200]
draw0_ID = widget_draw(tlb, $
MOTION_EVENTS = 1, $
XSIZE = sz[0], YSIZE = sz[1], $
EVENT_PRO = 'WheresMyWidgetEvent')
draw1_ID = widget_draw(tlb,$
XSIZE = sz[0], YSIZE = sz[1])
```

```
;pop the widget up
WIDGET_CONTROL, tlb, /Realize
```

```
;set the image widget up for drawing
;show the image
;and make the 'refresh' copy on the pixmap
Widget_Control, draw0_ID, Get_Value = win0
WSET, win0
```



```

image = DIST(sz)
TV, BYTSCL(Image)
;make a pixmap window for each widget -
;these are used to 'refresh' the widgets
;before we draw on them
WINDOW, xsize = sz[0], ysize = sz[1], /PIXMAP,/FREE
pix0 = !D.window
WSET, pix0
DEVICE, COPY = [0,0,sz[0],sz[1], 0,0, win0]

;set the chart widget up for drawing
;show the chart (without any data yet)
;and make the 'refresh' copy on the pixmap
Widget_Control, draw1_ID, Get_Value = win1
WSET, win1
PLOT, [0,Sz[0]], [0,MAX(image)], $
XTITLE = 'Image Column', $
YTITLE = 'Image Value', $
/NODATA
WINDOW, xsize = sz[0], ysize = sz[1], /PIXMAP, /FREE
pix1= !D.window
WSET, pix1
DEVICE, COPY = [0,0,sz[0],sz[1], 0,0, win1]

;gather your things to put in the TLB's bucket
;and store them
myStuff = $
{Draw0_ID: draw0_ID, $
Draw1_ID: draw1_ID, $
Pix0: pix0, $
Pix1: pix1, $
SZ: sz, $
Image: Image}

WIDGET_CONTROL, tlb, SET_UVALUE = myStuff, /NO_COPY

XMANAGER, 'wheresmywidget', tlb
END
**FINI***

```
