
Subject: Bug swatters needed: CW_SELECTAXES
Posted by [Doug Larson](#) on Fri, 25 Sep 1998 07:00:00 GMT
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Hi All,

I have been trying to get a CW for selecting axes to work using WIDGET_LIST etc.

I am including a test driver called "test_selectaxes"

Problems:

- 1) It does not report which index was selected for the Y or Z axes, only X
- 2) It only likes the first instance of CW_SELECTAXES, the others appear but do not respond to clicks, in fact it wipes out.

Before you all leave for the weekend, please help me debug! I have to get an App done, hopefully using this widget, over the weekend before the boss returns.

He seems to think nice GUIs are a waste of energy! :)

--

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```
. *****  
;  
;+  
; NAME:  
; CW_SelectAxes  
;  
; PURPOSE:  
; A compound widget to select axes for an arbitrary plotting application.  
; The default is (X,Y) but the DIMENSION keyword can be set to 3 for Z.  
;  
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```

```

;
; MODULES REQUIRED:
; CW_SelectAxes_get_value
; CW_SelectAxes_set_value
; CW_SelectAxes_event
; CW_SelectAxes
; These two modules test the CW_SelectAxes modules:
; test_CW_SelectAxes_event
; test_CW_SelectAxes
;
; CATEGORY:
; WIDGETS
;
; CALLING SEQUENCE:
; result = SelectAxes(parent)
;
; INPUTS:
;   Parent:      The ID of the parent widget.
;
; OPTIONAL KEYWORD PARAMETERS:
; LABELLIST: Default is ['X Axis', 'Y Axis', ['Z Axis']]
; LABELFONT: Font used for the list labels
; LABELPLACE: 0: TOP of each list
;   1: LEFT for row layout, RIGHT for column
; LISTNAMES: Names of the list elements, copied for all axes
; LISTFONT: Font used for the list elements
; LISTPLACE: 0: Lists laid out as a ROW
;   1: Lists laid out vertically in a COLUMN
;   TITLEAS:    The CW title title (The default is no title.)
; TITLEFONT: Font to use for the select axes title
; TITLEPLACE: 0: TOP
;   1: LEFT SIDE
;   FRAME:     Set this keyword to have a frame drawn around the
;              widget. The default is FRAME=0.
;   UVALUE:    The "user value" to be assigned to the widget.
;   VALUE:     The initial value setting of the widget.
;   XSIZE:     Width of the list widget in characters.
;   YSIZE:     Height of the list widget in characters.
;
; OUTPUTS:
;   The ID of the created widget is returned.
;
; SIDE EFFECTS:
;   This widget generates event structures containing a field
;   named value when its selection thumb is moved.
; This is a floating point value.
;
; PROCEDURE:

```

```

; WIDGET_CONTROL, id, SET_VALUE=value can be used to change the
; current value displayed by the widget.
;
; WIDGET_CONTROL, id, GET_VALUE=var can be used to obtain the current
; values displayed by the widget.
;
; MODIFICATION HISTORY:
; Created by: Douglas J. Larson, 24 September 1998
;
;
;-----
=====
FUNCTION CW_SelectAxes_get_value, id
; Recover the state of this compound widget
stash = WIDGET_INFO(id, /CHILD)
WIDGET_CONTROL, stash, GET_UVALUE=state, /NO_COPY

if(state.dimension eq 2)then $
ret = [ state.ListIndexX, state.ListIndexY ]

if(state.dimension eq 3)then $
ret = [ state.ListIndexX, state.ListIndexY, state.ListIndexZ ]

WIDGET_CONTROL, stash, SET_UVALUE=state, /NO_COPY
return, ret
end
; -----
FUNCTION CW_SelectAxes_set_value, id
; Recover the state of this compound widget
stash = WIDGET_INFO(id, /CHILD)
WIDGET_CONTROL, stash, GET_UVALUE=state, /NO_COPY

if(state.selectList eq 0)then begin
state.ListIndexX = value
endif

if(state.selectList eq 1)then begin
state.ListIndexY = value
endif

if(state.selectList eq 2)then begin
state.ListNamesZ = value
endif

WIDGET_CONTROL, stash, SET_UVALUE=state, /NO_COPY
end
; -----
FUNCTION CW_SelectAxes_event, event

```

```
; Retrieve the structure from the child that contains the sub ids
parent=event.handler
stash = WIDGET_INFO(parent, /CHILD)
WIDGET_CONTROL, stash, GET_UVALUE=state, /NO_COPY
eventValue = event.index
```

```
; See which list was clicked, the X, Y, or Z axis.
```

```
CASE event.ID OF
  state.xaxisID : BEGIN
    state.selectList = 0
    if(state.dimension eq 2)then begin
      state.ListIndexX = eventValue
    endif else begin
      state.ListIndexX = 0L
      state.ListIndexX = eventValue
    endelse
    if(state.bugmsg eq 1)then print,'Xaxis List=',eventValue
  END
  state.yaxisID : BEGIN
    state.selectList = 1
    if(state.dimension eq 2)then begin
      state.ListIndexY = eventValue
    endif else begin
      state.ListIndexY = 0L
      state.ListIndexY = eventValue
    endelse
    if(state.bugmsg eq 1)then print,'Yaxis List=',eventValue
  END
  state.zaxisID : BEGIN
    state.selectList = 2
    if(state.dimension eq 3)then begin
      state.ListNamesZ = eventValue
    endif
    if(state.bugmsg eq 1)then print,'Zaxis List=',eventValue
  END
ENDCASE
```

```
if(state.dimension eq 2)then begin
  ret = { SelectAxes_event, ID:parent, TOP:event.top, HANDLER:0L, $
    INDEXX: state.ListIndexX, $
    INDEXY: state.ListIndexY }
endif else begin
  ret = { SelectAxes_event, ID:parent, TOP:event.top, HANDLER:0L, $
    INDEXX: state.ListIndexX, $
    INDEXY: state.ListIndexY, $
    INDEXZ: state.ListIndexZ }
endelse
```

```
WIDGET_CONTROL, stash, SET_UVALUE = state, /NO_COPY
```

```
RETURN, ret
```

```
END
```

```
; -----  
FUNCTION CW_SelectAxes, parent, DEBUG=bugmsg, DIMENSION = dimension, $  
    LABELLIST=labellist, LABELFONT=labelfont, LABELPLACE=LabelPlace, $  
    TITLEAS = titleas, TITLEFONT=titlefont, TITLEPLACE=titleplace, $  
    FRAME = frame, UVALUE = uval, VALUE = val, $  
    LISTNAMES=listnames, LISTFONT=listfont, LISTPLACE=listplace, $  
    XAXISLIST = ListNamesX, $  
    YAXISLIST = ListNamesY, $  
    ZAXISLIST = ListNamesZ, $  
    XSIZE = xsize, YSIZE = ysize, ZSIZE = zsize
```

```
if(N_PARAMS() EQ 0) then MESSAGE, 'Incorrect number of arguments'  
ON_ERROR, 2 ;return to caller
```

```
; Defaults for keywords
```

```
; -----
```

```
if NOT(KEYWORD_SET(bugmsg)) then bugmsg = 0  
if N_ELEMENTS(dimension) EQ 0 then dimension = 2  
if N_ELEMENTS(labellist) EQ 0 then begin
```

```
    CASE dimension OF
```

```
    2: begin
```

```
        labellist = STRARR(2)
```

```
        labellist[0] = 'X Axis'
```

```
        labellist[1] = 'Y Axis'
```

```
    end
```

```
    3: begin
```

```
        labellist = STRARR(3)
```

```
        labellist[0] = 'X Axis'
```

```
        labellist[1] = 'Y Axis'
```

```
        labellist[2] = 'Z Axis'
```

```
    end
```

```
    ENDCASE
```

```
endif
```

```
if NOT(KEYWORD_SET(labelfont)) then labelfont = $  
    '-adobe-helvetica-bold-r-normal--12-120-75-75-p-70-iso8859-1 '
```

```
if N_ELEMENTS(LabelPlace) EQ 0 then LabelPlace = 0
```

```
if N_ELEMENTS(titleas) EQ 0 then titleas = ""
```

```
if N_ELEMENTS(titlefont) EQ 0 then titlefont = labelfont
```

```
if N_ELEMENTS(titleplace) EQ 0 then titleplace = 0
```

```
if N_ELEMENTS(frame) EQ 0 then frame = 0
```

```
if N_ELEMENTS(uval) EQ 0 then uval = 0
```

```
if N_ELEMENTS(val) EQ 0 then val = 0
```

```
if N_ELEMENTS(xsize) EQ 0 then xsize = 6
```

```

if N_ELEMENTS(ysize) EQ 0 then ysize = 6
if N_ELEMENTS(listfont) EQ 0 then listfont = labelfont
if N_ELEMENTS(listplace) EQ 0 then listplace = 0

; The actual list elements can be specified on a per list
; basis, or once with the LISTNAMES keyword.
nListNames = N_ELEMENTS(ListNames)
nListNamesX = N_ELEMENTS(ListNamesX)
nListNamesY = N_ELEMENTS(ListNamesY)
nListNamesZ = N_ELEMENTS(ListNamesZ)
if(nListNames eq 0)then begin
  filldefaults = 0L
  CASE dimension OF
    2: begin
      if((nListNamesX EQ 0) or (nListNamesY EQ 0)) then filldefaults = 1L
      end
    3: begin
      if((nListNamesX EQ 0) or $
        (nListNamesY EQ 0) or $
        (nListNamesZ EQ 0)) then begin
        filldefaults = 1L
      endif
    end
  ENDCASE
  if(filldefaults EQ 1L) then begin
    nListNamesX = 10
    nListNamesY = nListNamesX
    nListNamesZ = nListNamesX
    ListNamesX = STRARR(nListNamesX)
    ListNamesY = STRARR(nListNamesY)
    ListNamesZ = STRARR(nListNamesZ)
    for i = 0, nListNamesX-1 do begin
      name = 'Value '+strcompress(STRING(i))
      ListNamesX[i] = name
      ListNamesY[i] = name
      ListNamesZ[i] = name
    endfor
  endif
endif else begin
  nListNamesX = nListNames
  nListNamesY = nListNames
  nListNamesZ = nListNames
  ListNamesX = STRARR(nListNames)
  ListNamesY = STRARR(nListNames)
  ListNamesZ = STRARR(nListNames)
  ListNamesX = ListNames[*]
  ListNamesY = ListNames[*]
  ListNamesZ = ListNames[*]

```

```

endelse

; Setup placement of a title for this CW
; -----
if(titleplace eq 0)then begin      ; COLUMN
  SelectAxesTLB=WIDGET_BASE(parent, /COLUMN)
  titleBase = WIDGET_BASE(SelectAxesTLB, /ALIGN_CENTER)
endif else begin                  ; ROW
  SelectAxesTLB=WIDGET_BASE(parent, /ROW)
  titleBase = WIDGET_BASE(SelectAxesTLB, /ALIGN_CENTER)
endelse
title = WIDGET_LABEL(titleBase, VALUE=titles, FONT=titlefont)

; Setup layout of lists as a row or a column
; -----
if(listplace eq 0)then begin      ; ROW
  SelectAxesBase=WIDGET_BASE(SelectAxesTLB, /ROW)

; Setup placement of each individual list's title
; -----
CASE LabelPlace OF
  0 : BEGIN
    xaxisBase = WIDGET_BASE(SelectAxesBase, GROUP_LEADER = parent, /COL)
    labelxBASE = WIDGET_BASE(xaxisBase, /ALIGN_CENTER, /COL)
    labelx = WIDGET_LABEL(labelxBASE, VALUE=labellist[0], $
      FONT=labelfont)
    xaxisID = WIDGET_LIST(xaxisBase, VALUE=ListNamesX, $
      UVALUE=labellist[0], $
      FONT=listfont, $
      XSIZE=xsize, YSIZE=ysize)

    yaxisBase = WIDGET_BASE(SelectAxesBase, GROUP_LEADER = parent, /COL)
    labelyBase = WIDGET_BASE(yaxisBase, /ALIGN_CENTER, /COL)
    labely = WIDGET_LABEL(labelyBase, VALUE=labellist[1], $
      FONT=labelfont)
    yaxisID = WIDGET_LIST(yaxisBase, VALUE=ListNamesY, $
      UVALUE=labellist[1], $
      FONT=listfont, $
      XSIZE=xsize, YSIZE=ysize)

    if(dimension eq 3)then begin
      zaxisBase = WIDGET_BASE(SelectAxesBase, $
        GROUP_LEADER = parent, /COL)
      labelzbase = WIDGET_BASE(zaxisBase, /ALIGN_CENTER, /COL)
      labelz = WIDGET_LABEL(labelzbase, VALUE=labellist[2], $
        FONT=labelfont)
      zaxisID = WIDGET_LIST(zaxisBase, VALUE=ListNamesZ, $
        UVALUE=labellist[2], $

```

```

        FONT=listfont, $
        XSIZE=xsize, YSIZE=ysize)

endif else begin
    zaxisID = 0L
endelse
END
1 : BEGIN
xaxisBase = WIDGET_BASE(SelectAxesBase, GROUP_LEADER = parent, /ROW)
labelxBASE = WIDGET_BASE(xaxisBase, /ALIGN_CENTER)
labelx = WIDGET_LABEL(labelxBASE, VALUE=labellist[0], $
    FONT=labelfont)
xaxisID = WIDGET_LIST(xaxisBase, VALUE=ListNamesX, $
    UVALUE=labellist[0], $
    FONT=listfont, $
    XSIZE=xsize, YSIZE=ysize)

yaxisBase = WIDGET_BASE(SelectAxesBase, GROUP_LEADER = parent, /ROW)
labelyBase = WIDGET_BASE(yaxisBase, /ALIGN_CENTER)
labely = WIDGET_LABEL(labelyBase, VALUE=labellist[1], $
    FONT=labelfont)
yaxisID = WIDGET_LIST(yaxisBase, VALUE=ListNamesY, $
    UVALUE=labellist[1], $
    FONT=listfont, $
    XSIZE=xsize, YSIZE=ysize)

if(dimension eq 3)then begin
    zaxisBase = WIDGET_BASE(SelectAxesBase, $
        GROUP_LEADER = parent, /ROW)
    labelzbase = WIDGET_BASE(zaxisBase, /ALIGN_CENTER)
    labelz = WIDGET_LABEL(labelzbase, VALUE=labellist[2], $
        FONT=labelfont)
    zaxisID = WIDGET_LIST(zaxisBase, VALUE=ListNamesZ, $
        UVALUE=labellist[2], $
        FONT=listfont, $
        XSIZE=xsize, YSIZE=ysize)
endif else begin
    zaxisID = 0L
endelse
END
ENDCASE
endif else begin                ; COLUMN
    SelectAxesBase=WIDGET_BASE(SelectAxesTLB, /COLUMN)

; Setup placement of each individual list's title
; -----
CASE LabelPlace OF
    0 : BEGIN

```

```

xaxisBase = WIDGET_BASE(SelectAxesBase, GROUP_LEADER = parent, /COL)
labelxBASE = WIDGET_BASE(xaxisBase, /ALIGN_CENTER, /COL)
labelx = WIDGET_LABEL(labelxBASE, VALUE=labellist[0], $
    FONT=labelfont)
xaxisID = WIDGET_LIST(xaxisBase, VALUE=ListNamesX, $
    UVALUE=labellist[0], $
    FONT=listfont, $
    XSIZE=xsize, YSIZE=ysize)

yaxisBase = WIDGET_BASE(SelectAxesBase, GROUP_LEADER = parent, /COL)
labelyBase = WIDGET_BASE(yaxisBase, /ALIGN_CENTER, /COL)
labely = WIDGET_LABEL(labelyBase, VALUE=labellist[1], $
    FONT=labelfont)
yaxisID = WIDGET_LIST(yaxisBase, VALUE=ListNamesY, $
    UVALUE=labellist[1], $
    FONT=listfont, $
    XSIZE=xsize, YSIZE=ysize)

if(dimension eq 3)then begin
    zaxisBase = WIDGET_BASE(SelectAxesBase, $
        GROUP_LEADER = parent, /COL)
    labelzbase = WIDGET_BASE(zaxisBase, /ALIGN_CENTER, /COL)
    labelz = WIDGET_LABEL(labelzbase, VALUE=labellist[2], $
        FONT=labelfont)
    zaxisID = WIDGET_LIST(zaxisBase, VALUE=ListNamesZ, $
        UVALUE=labellist[2], $
        FONT=listfont, $
        XSIZE=xsize, YSIZE=ysize)
endif else begin
    zaxisID = 0L
endelse
END
1 : BEGIN
xaxisBase = WIDGET_BASE(SelectAxesBase, GROUP_LEADER = parent, /ROW)
xaxisID = WIDGET_LIST(xaxisBase, VALUE=ListNamesX, $
    UVALUE=labellist[0], $
    FONT=listfont, $
    XSIZE=xsize, YSIZE=ysize)
labelxBASE = WIDGET_BASE(xaxisBase, /ALIGN_CENTER)
labelx = WIDGET_LABEL(labelxBASE, VALUE=labellist[0], $
    FONT=labelfont)

yaxisBase = WIDGET_BASE(SelectAxesBase, GROUP_LEADER = parent, /ROW)
yaxisID = WIDGET_LIST(yaxisBase, VALUE=ListNamesY, $
    UVALUE=labellist[1], $
    FONT=listfont, $
    XSIZE=xsize, YSIZE=ysize)
labelyBase = WIDGET_BASE(yaxisBase, /ALIGN_CENTER)

```

```

labely = WIDGET_LABEL(labelyBase, VALUE=labellist[1], $
    FONT=labelfont)

if(dimension eq 3)then begin
    zaxisBase = WIDGET_BASE(SelectAxesBase, $
        GROUP_LEADER = parent, /COLUMN)
    zaxisID = WIDGET_LIST(zaxisBase, VALUE=ListNamesZ, $
        UVALUE=labellist[2], $
        FONT=listfont, $
        XSIZE=xsize, YSIZE=ysize)
    labelzbase = WIDGET_BASE(zaxisBase, /ALIGN_CENTER)
    labelz = WIDGET_LABEL(labelzbase, VALUE=labellist[2], $
        FONT=labelfont)
endif else begin
    zaxisID = 0L
endelse
END
ENDCASE
endelse

; The state is dependent on the number of axes
; -----
selectList=0
CASE dimension OF
  2: begin
    state = { SelectAxesTLB: SelectAxesTLB, $
        selectList: selectList, $
        bugmsg: bugmsg, $
        dimension: dimension, $
        xaxisID: xaxisID, $
        yaxisID: yaxisID, $
        ListIndexX: LONARR(nListNamesX), $
        ListIndexY: LONARR(nListNamesY), $
        ListNamesX: ListNamesX, $
        ListNamesY: ListNamesY }
    end
  3: begin
    state = { SelectAxesTLB: SelectAxesTLB, $
        selectList: selectList, $
        bugmsg: bugmsg, $
        dimension: dimension, $
        xaxisID: xaxisID, $
        yaxisID: yaxisID, $
        zaxisID: zaxisID, $
        ListIndexX: LONARR(nListNamesX), $
        ListIndexY: LONARR(nListNamesY), $
        ListIndexZ: LONARR(nListNamesZ), $
        ListNamesX: ListNamesX, $

```



```

3 : BEGIN
    print,'List 3: ListIndexX=',value[0]
    print,'    ListIndexY=',value[1]
    END
ENDCASE

```

```
END
```

```

; -----
;+
; NAME: test_CW_SelectAxes
;
; PURPOSE:
; This is the unit tester for the compound widget CW_SelectAxes. What this
; does is show a simple example of how to use the widget and make sure that
; it is working properly.
; USE:
; 1) Start IDL
; 2) Open this file, with all it's pieces!
; 3) Compile the file
; 4) Type test_CW_SelectAxes at the IDL prompt.
;
; MODULES REQUIRED:
; CW_SelectAxes_get_value
; CW_SelectAxes_set_value
; CW_SelectAxes_event
; CW_SelectAxes
; These two modules test the CW_SelectAxes modules:
; test_CW_SelectAxes_event
; test_CW_SelectAxes
;
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;
; CATEGORY:
; COMPOUND WIDGET UNIT TESTER
;
; CALLING SEQUENCE:
; test_SelectAxes
; -
; =====
=====
PRO test_SelectAxes
sfont1 = '-adobe-helvetica*-o*-*-*-120*-*-*-*-*'

```

```
sfont2 = '-adobe-helvetica-bold-r-normal--24-240-75-75-p-138-iso8859-1'  
sfont3 = '-adobe-helvetica-bold-r-normal--12-120-75-75-p-70-iso8859-1'
```

```
slideTLB=WIDGET_BASE(/col)  
ListSetID0=CW_SelectAxes(slideTLB)  
ListSetID1=CW_SelectAxes(slideTLB, DIMENSION = 3, UVALUE=1)
```

```
timelist=['Time', 'livetime']  
detectorlist=['m1', 'm2', 'm3', 'adcor', 'D1', 'D2', 'D3', 'D4']  
ListSetID2=CW_SelectAxes(slideTLB, DEBUG=1, $  
    TITLEAS = 'Real Data', TITLEPLACE=0, $  
    LABELFONT=sfont1, LABELPLACE = 0, $  
    XAXISLIST = timelist, $  
    YAXISLIST = detectorlist, $  
    LISTPLACE=0, $  
    UVALUE=2)
```

```
spkids=['Kenny', 'Kyle', 'Cartman', 'Stan', 'Damien', 'Ike', 'Shelley']  
spadults=['Chef', 'Matt Stone', 'Trey Parker', 'Mr. Garrison', 'Ned', $  
    'Officer Barbrady', 'Mr. Mackey', 'Big Gay Al', 'Miss Crabtree']  
spmisc=['Cows', 'Mr. Hankey', 'Mr. Hat', 'Terrance & Phillip']  
ListSetID3=CW_SelectAxes(slideTLB, DEBUG=1, $  
    TITLEAS = 'South Park Characters', TITLEPLACE=0, $  
    LABELFONT=sfont1, LABELPLACE = 0, $  
    LABELLIST = ['Kids', 'Adults', 'Oddities'], LISTPLACE=0, $  
    DIMENSION = 3, $  
    XAXISLIST = spkids, $  
    YAXISLIST = spadults, $  
    ZAXISLIST = spmisc, $  
    UVALUE=3)
```

```
; Realize the widget:  
WIDGET_CONTROL, slideTLB, /REALIZE
```

```
; Hand off control of the widget to the XMANAGER:  
XMANAGER, "test_CW_SelectAxes", slideTLB, GROUP_LEADER=slideTLB, /NO_BLOCK
```

```
END
```

File Attachments

1) [cw_selectaxes.pro](#), downloaded 75 times
