

### Creating Checkbox Controls

The **CheckBox** creates or modifies a checkbox or a radio button.

CheckBox controls automatically size themselves in both height and width. They can optionally be connected to a global variable.

For an example of using checkbox controls as radio buttons, see the reference documentation for the **CheckBox** operation.

The user-defined action procedure that you will need to write for CheckBoxes must have the following form:

```
Function CheckProc(cba) : CheckBoxControl
    STRUCT WMCheckboxAction &cba


    switch(cba.eventCode)
        case 2:                // Mouse up
            Variable checked = cba.checked
            break
        case -1:               // Control being killed
            break
    endswitch

    return 0
End
```

The checked structure member is set to the new checkbox value;; 0 or 1.

You often do not need an action procedure for a checkbox because you can read the state of the checkbox with the **ControlInfo** operation.

You can create custom checkboxes by following steps similar to those for custom buttons (see **Custom Button Control Example** on page III-422), except that the picture has six states side-by-side instead of three. The checkbox states are:

Image Order	Control State
Left	Deselected enabled.
	Deselected enabled and clicked down (about to be selected).
	Deselected disabled.
	Selected enabled.
	Selected enabled and clicked down (about to be deselected).
	Selected disabled.
Right	

### Creating Custom Controls

The CustomControl operation creates or modifies a custom control, all aspects of which are completely defined by the programmer. See the **CustomControl** operation on page V-134 for a complete description.

The examples in this section are also available in the Custom Controls demo experiment. Choose File→Example Experiments→Feature Demos 2→Custom Control Demo.

What you can create with a CustomControl can be fairly simple such as this counter that increments when you click on it.



The following code implements the counter custom control using the `kCCE_frame` event. In the panel, click on the number to increment the counter; also try clicking and then dragging outside the control.

```
static constant kCCE_mouseup= 2
static constant kCCE_frame= 12

// PNG: width= 280, height= 49
Picture Numbers0to9
ASCII85Begin
M,6r;%14!\!!!!.8Ou6I!!!!$:!!!R#Qau!00#^OT5@]&TgHDFAm*iFE_/6AH5;7DfQssEc39jTBQ
=U"5Q0:5u`*!m@2jn"j"La,ma^'a?hQ[Z.[.,Kgd(1o5*(PSO8oS[GX%3u"11dTl)fII/"f-?Jq*no#
Qb>Y+UBKXKHQpQ&qYW88I,Ctm(`:C^]$4<ePf>Y(L\U!R2N7CEAn![N1I+[hTtr.VepqSG4R-;/+5$
IJE.V(>s0B@E@`n"ET+@5J9n_E:qeR_8:F1?m1=DM;mu.AEj!)]K4CUuCa4T=W)#(SE>uH[A4\;IG/
e]FqJ4u,2`*p=N5sc@qLD5bH89>gIBdF-1i6SF28oH@"3c2m)bDr&,UB$]i]/0bA.=qbr2#\~D9E?O
2>3D>`($p(Kn)F8aF@)LYiXn[h2K):5@^kF?94)j*1Xtq1U2oFZmY.te?0G)EQ%5,RVT~c)DVa+%mP
%+bS* hN$hc*8uCJuIWqTHJR.U?32`_B)(g_8e#*YXa>=faEdJsF]6iJlrQ@QAX7huJUmXj8:PBtb2
Y:DYf*Sci'Q"3_@RDQA:A/([2s08r$hw)\B$XBGASJ:6OpC+GL<FjVfeNm20U<1<9J%cndX3'HP+k
R.IV?U>ns`_ ;Zt[]6G6"Rb-*'Nm-E8]LXXxo7Ub>A**7Bm5cS*">HbQ& RhmUe]$iu@T?Cci:e-`k
sE+H.GRSMT(9to;IZuH`T4%Yt<jF$+W?Yh6Q*`C4sGig=L@DKoT%.H=#e_H"QEeeBVNTWBSMYr3dj
O=T%d&4kt9#cWPHS>kAG;3=or2(1K*IBF$^qK_+m0NSDK !+e0#3fAI>HfKa<sk0641u\W@r+Y:$.i
i$grCPR#&6,;+>nTs_1KS6XcYR)A$fiC6Z_d2S!$R>_ZH+ [<p:JI0ub]\BhE(ORP@((KTRTGo;#SY
LT^9;D7X#km%UV20?5RS"FZoIF!(`FY-iL?n$%#o;-Wj(\PaBS6ZRQe@:kC>%ULrhTWLNM=n@fUbRp
SKkLe\kJ)Sd]u7!?pRJk-!XL[/MZX'"n4?a?JIK00k'KUmlIZ+roB=:Bq'$&E<#SKrp%p,E"4sI>[-
0F#^ff5SN':2fO)LNC?L4(2ga=!aLm8)tVbGAM?L`l^=$D_YP7Z(sOFs)BL5er5G95p3?m%hM^lSr'
*E^O@8=u6hL`L$mpcq!B1-iHuGA6hiip`cFj19>W?'E-5T%Y.]i2A@1i%p8XJ5[khb:&"JXYSC\r
10Ss8<Ye;S^"Nc0%-DFouAiPQ9Oemnr!"sHH$Jkt@!"d0E"'M(P%:`p'15_10`!<nVt" TALQ>PF8WL
Z:#f!!!!j78?7R6=>B
ASCII85End
End

Structure CC_CounterInfo
Int32 theCount // current frame of 10 frame sequence of numbers in
EndStructure

Function MyCC_CounterFunc(s)
STRUCT WMCustomControlAction &s

STRUCT CC_CounterInfo info

if( s.eventCode==kCCE_frame )
StructGet/S info,s.userdata
s.curFrame= mod(info.theCount+(s.curFrame!=0),10)
elseif( s.eventCode==kCCE_mouseup )
StructGet/S info,s.userdata
info.theCount= mod(info.theCount+1,10)
StructPut/S info,s.userdata // will be written out to control
endif

return 0
End

Window Panel0() : Panel
PauseUpdate; Silent 1 // building window...
NewPanel /W=(69,93,271,252)
CustomControl cc2,pos={82,46},proc=MyCC_CounterFunc,picture=
{ProcGlobal#Numbers0to9,10}
EndMacro
```