# Visual Clipper via GTWVW

**WVWClip Documentation**

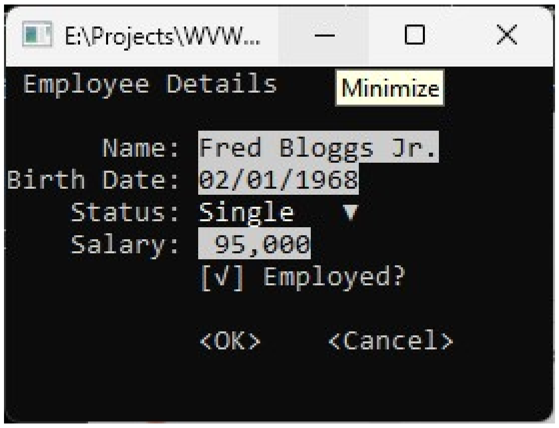
## Contents

## Background

I began with the following Clipper 5.3 code. It functions as expected when compiled using Harbour.

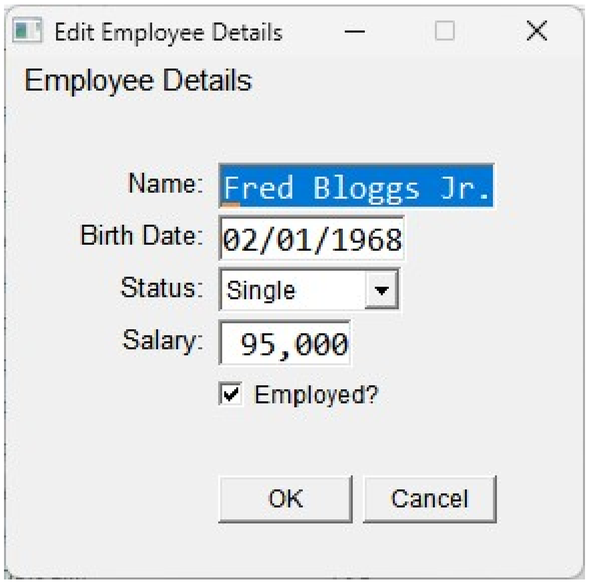
```
#include "inkey.ch"

PROCEDURE main()

   LOCAL cName     := 'Fred Bloggs Jr.'
   LOCAL dDOB      := Date() - 20000
   LOCAL cStatus   := 'Single'
   LOCAL nSalary   := 95000
   LOCAL lEmployed := .T.
   LOCAL lOK       := ' '
   LOCAL lCancel   := ' '

   SET CENTURY ON

   SetMode( 10, 32 )

   CLS

   @ 00, 01 SAY 'Employee Details'

   @ 02, 12 GET cName      CAPTION 'Name:'         PICTURE '@K'
   @ 03, 12 GET dDOB       CAPTION 'Birth Date:'   PICTURE '@D'
   @ 04, 12, 08, 21 GET cStatus LISTBOX { 'Unknown', 'Married', 'Single' } ;
      DROPDOWN CAPTION 'Status:'
   @ 05, 12 GET nSalary    CAPTION 'Salary:'       PICTURE '999,999'
   @ 06, 12 GET lEmployed  CHECKBOX CAPTION 'Employed?'

   @ 08, 12 GET lOK      PUSHBUTTON  CAPTION 'OK' ;
      STATE {|| hb_keyPut( K_CTRL_W ) }

   @ 08, 20 GET lCancel      PUSHBUTTON  CAPTION 'Cancel' ;
      STATE {|| hb_keyPut( K_ESC ) }

   READ

   IF LastKey() <> K_ESC
      Alert( cName + ';' + ;
         DToC( dDOB ) + ';' + ;
         cStatus + ';' + ;
         Str( nSalary ) + ';' + ;
         iif( lEmployed, 'Y', 'N' ) )
   ENDIF

  RETURN
```

The resulting output looks like this.



```
 Employee Details

      Name: Fred Bloggs Jr.
Birth Date: 02/01/1968
    Status: Single    ▼
    Salary:  95,000
            [√] Employed?

            <OK>    <Cancel>
```

After making a few changes, highlighted in code shown below , the output looks much better.



Employee Details

Name: Fred Bloggs Jr.
Birth Date: 02/01/1968
Status: Single
Salary: 95,000
✓ Employed?

```
#include "inkey.ch"
#include "wvwclip.ch"

PROCEDURE main()

   LOCAL cName     := 'Fred Bloggs Jr.'
   LOCAL dDOB      := Date() - 20000
   LOCAL cStatus   := 'Single'
   LOCAL nSalary   := 95000
   LOCAL lEmployed := .T.
   LOCAL lOK       := ' '
   LOCAL lCancel   := ' '

   SET CENTURY ON
   SET EVENTMASK TO INKEY_ALL

   SetMode( 10, 32 )

   WSetup( .T. )
   WInit( 'Edit Employee Details' )

   @ 00, 01 LABEL 'Employee Details' FONT HeadFont()

   @ 02, 12 GET cName      CAPTION 'Name:'         PICTURE '@K'
   @ 03, 12 GET dDOB       CAPTION 'Birth Date:'   PICTURE '@D'
   @ 04, 12, 08, 21 GET cStatus LISTBOX { 'Unknown', 'Married', 'Single' } ;
      DROPDOWN CAPTION 'Status:'
   @ 05, 12 GET nSalary    CAPTION 'Salary:'       PICTURE '999,999'
   @ 06, 12 GET lEmployed  CHECKBOX CAPTION 'Employed?'

   @ 08, 12 GET lOK      PUSHBUTTON  CAPTION 'OK' ;
      STATE {|| hb_keyPut( K_CTRL_W ) }

   @ 08, 20 GET lCancel      PUSHBUTTON  CAPTION 'Cancel' ;
      STATE {|| hb_keyPut( K_ESC ) }

   READ

   IF LastKey() <> K_ESC
      Alert( cName + ';' + ;
         DToC( dDOB ) + ';' + ;
         cStatus + ';' + ;
         Str( nSalary ) + ';' + ;
         iif( lEmployed, 'Y', 'N' ) )
   ENDIF

   RETURN
```

## Build Instructions

Add the additional lines of code as highlighted above.

Create wclip.hbp with the following lines in it.

```
wvwclip.hbc
hbxpp.hbc
hbct.hbc
hbwin.hbc
gtwvw.hbc

wclip.prg
```

Compile.

```
Hbmk2 wclip.hbp
```

**Note: WVWClip library was built using Harbour 3.4.0dev.**

## @...BOX

Draw a box at given coordinates.

Syntax

```
@ <nTop>, <nLeft>, <nBottom>, <nRight> BOX ;
   RAISED | RECESSED | GROUP ;
   [CAPTION <cCaption>] ;
   [OFFSET <aTLBR>]
```

Arguments

`<cCaption>`

Caption text.

`<aTLBR>`

This is an array of four elements, {nTop, nLeft, nBottom, nRight}, in pixels used for row and column alignment.

Example

```
@ 0, 0, MaxRow(), MaxCol() BOX RECESSED

@ 4, 23, 7, 33 BOX GROUP ;
      CAPTION 'Database'
```

## @...GET

Draw a data entry field at given coordinates.

Syntax

```
@ <nRow>, <nCol> GET <v> ;
   [CAPTION <cCaption>] ;
   [PICTURE <cPicture>] ;
   [VALID <lPostExpression>] ;
   [WHEN <lPreExpression>] ;
   [SEND <msg>]
```

Example

```
LOCAL nSalary := 95000

@ 05, 12 GET nSalary CAPTION 'Salary:' PICTURE '999,999' ;
      VALID nSalary >= 0
```

## @...GET CHECKBOX

Draw a check box at given coordinates.

Syntax

```
    @ <nRow>, <nCol> GET <lVar> CHECKBOX ;
       [CAPTION <cCaption>];
       [WHEN <lPreExpression>] ;
       [VALID <lPostExpression>]
```

Arguments

Example

```
LOCAL lEmployed := .T.

@ 06, 12 GET lEmployed CHECKBOX ;
      CAPTION 'Employed?'
```

## @...GET EDITBOX

Draw an edit box at given coordinates.

Syntax

```
    @ <nTop>, <nLeft>, <nBottom>, <nRight> GET <cVar> EDITBOX ;
       [CAPTION <cCaption>] ;
       [FONT <aFont> ;
       [STYLE <nStyle>] ;
       [MAXCHAR <nMaxChar>] ;
       [OFFSET <aTLBR>]
```

Arguments

`<nTop>, <nLeft>, <nBottom>, <nRight>`
Edit box coordinates.

`<cVar>`
This is the edited variable initialized as a character string.

`<cCaption>`
Caption text. It is drawn so that it ends at <nLeft>-1 column position.

`<aFont>`
Array of two elements: {cFont, nSize}. Specifies which font will be used for this edit box.

`<nStyle>`
This could be any combination of ES_* constants. See example below.

`<nMaxChar>`
Maximum number of input characters accepted.

`<aTLBR>`
This is an array of four elements, {nTop, nLeft, nBottom, nRight}, in pixels used for row and column alignment.

Example

```
LOCAL cMemo := 'These are employee notes.'

@ 0, 5, 6, 35 GET cMemo EDITBOX CAPTION 'Notes:' ;
            STYLE ES_MULTILINE+ES_READONLY
```

## @...GET LISTBOX

Draw a dropdown type list box at given coordinates.

Syntax

```
    @ <nTop>, <nLeft>, <nBottom>, <nRight> GET <nVar|cVar> LISTBOX ;
       <aOptions> ;
       [DROPDOWN] ;
       [CAPTION <cCaption>] ;
       [OFFSET <aTLBR>]
```

Arguments

`<nTop>, <nLeft>, <nBottom>, <nRight>`
LISTBOX coordinates.

`<nVar|cVar>`
This is the edited variable initialized as a numeric value or a  character string.

If nVar, it is assigned the index (first item is 1) of the selected  item of <aOptions>.

If cVar, it is assigned the string of the selected item of <aOptions>.

`<aOptions>`
An array of options: Each option length must be > 2.

`<cCaption>`
Caption text. It is drawn so that it ends at <nLeft>-1 column  position.

`<aTLBR>`
This is an array of four elements, {nTop, nLeft, nBottom, nRight}, in pixels used for row and column alignment.

Example

```
LOCAL cStatus := 'Single'

@ 04, 12, 04, 19 GET cStatus ;
      LISTBOX { 'Unknown', 'Married', 'Single' } ;
      CAPTION 'Status:'
```

## @...GET PUSHBUTTON

Draw a pushbutton at given coordinates.

Syntax

```
    @ <nRow>, <nCol> GET <lVar> PUSHBUTTON ;
       [CAPTION <cCaption>] ;
       [WIDTH <nWidth>] ;
       [VALID <valid>] ;
       [WHEN <when>] ;
       [STATE <bAction>] ;
       [OFFSET <aTLBR>]
```

Arguments

`<nRow>, <nCol>`
Pushbutton coordinates.

`<lVar>`
This is a placeholder for the underlying GET. It is always set to True.

`<cCaption>`
Caption text is used for button label.

`<nWidth>`
Pushbutton width. It defaults to 7.

`<bAction>`
This code block is evaluated when pushbutton is clicked by user.

`<aTLBR>`
This is an array of four elements, {nTop, nLeft, nBottom, nRight}, in pixels used for row and column alignment.

Example

```
LOCAL lSave := .T.
LOCAL nBtn := 0

@ 08, 02 GET lSave PUSHBUTTON ;
      CAPTION 'OK' ;
      STATE {|| nBtn := 1, hb_keyPut( K_CTRL_W ) }
```

## @...GET RADIOGROUP

Draw a group of radio buttons at given coordinates.

Syntax

```
    @ <nTop>, <nLeft>, <nBottom>, <nRight> GET <nVar> ;
       RADIOGROUP ;
       [CAPTION <cCaption>] ;
       [OFFSET <aTLBR>]
```

Arguments

Same as those for Clipper except for the additional ones below.

`<cCaption>`

Caption text.

`<aTLBR>`

This is an array of four elements, {nTop, nLeft, nBottom, nRight}, in pixels used for row and column alignment.

Example

```
LOCAL nRB
LOCAL aRadio[ 3 ]

aRadio[ 1 ] := "Red"
aRadio[ 2 ] := "Green"
aRadio[ 3 ] := "Blue"

nRB := 2            // Default radio button

@    2, 8,   4, 15 GET nRBRADIOGROUP aRadio ;
      CAPTION "Colour"
```

## @...GET TBROWSE

Display browse object on screen.

Syntax

```
@ <nTop>, <nLeft>, <nBottom>, <nRight> GET <idVar> ;
   TBROWSE <oBrowse> ;
   [WHEN <lPreExpression>] ;
   [VALID <lPostExpression>] ;
   [SEND <msg>] ;
   [GUISEND <guimsg>]
```

Arguments

Same as those for Clipper version except that MESSAGE clause is not implemented.

Example

```
#include "inkey.ch"
#include "wvwclip.ch"

REQUEST DBFCDX
REQUEST HB_CODEPAGE_FRWIN

FUNCTION Main()

LOCAL lDummy := .F.
LOCAL oBrowse := NIL

PRIVATE GetList := {}

SET DEFAULT TO .\data

SET EVENTMASK TO INKEY_ALL

hb_cdpSelect( "FRWIN" )
hb_langSelect( "EN" )

SetMode( 7, 30 )

WSetup( .T. )
WInit('Browse Example')

USE currency INDEX currency VIA "DBFCDX" SHARED

// Setup browse.
oBrowse            := TBrowse():New()
oBrowse:colorspec := 'N/W*, W/B*'
oBrowse:autoLite  := .F.
```

```
// Add columns.
oBrowse:AddColumn( TBColumn():New( 'ID',       { || currency->currid } ) )
oBrowse:AddColumn( TBColumn():New( 'Currency', { || currency->descript } ) )
oBrowse:AddColumn( TBColumn():New( 'Symbol',   { || currency->symb } ) )

@ 1, 1, 5, 28 GET lDummy TBROWSE oBrowse GUISEND forceStable()

READ

USE

RETURN NIL
```

## @...IMAGE

Draw an image at given coordinates.

Syntax

```
    @ <nTop>, <nLeft>, <nBottom>, <nRight> IMAGE <cFile> ;
       [OFFSET <lTight>|<aTLBR>] TBITMAP
```

Arguments

`<nTop>, <nLeft>, <nBottom>, <nRight>`
IMAGE coordinates.

`<cFile>`
Image filename or index into an image list.

`<lTight>|<aTLBR>`
`lTight` When set to .T. the image is placed snuggly within the image coordinates.

`aTLBR` is an array of four elements, {nTop, nLeft, nBottom, nRight}, in pixels used for row and column alignment.

<TBITMAP>
Image is a transparent bitmap.

Example

```
@ 1, 1, 3, 7 IMAGE hb_DirBase() + "logo.bmp" TBITMAP
```

## @...LABEL

Draw a label at given coordinates.

Syntax

```
    @ <nRow>, <nCol> LABEL <cLabel> ;
        [FONT <aFont>] ;
        [RIGHT] ;
        [COLOR <cClr>]
```

Arguments

`<nRow>, <nCol>`
Label coordinates.

`<cLabel>`
Label text.

`<aFont>`
Array of three elements: {cFont, nSize, nWeight }. Specifies which font will be  used to draw the label with.

Default is “Arial”, 16, FW_NORMAL.

`RIGHT`
If specified, the expression output will end at <nCol> position.

`<cClr>`
Output colour in ‘N/W’ format.

Example

```
LOCAL aFont := { 'Arial', 15, FW_NORMAL }

@ 02, 05 LABEL 'Use at your own risk.' ;
      FONT aFont
```

## @...LABELOBJ

Draw a label object at given coordinates.

Syntax

```
    @ <nTop>, <nLeft>[, <nBottom>[, <nRight>]] LABELOBJ <cLabel> ;
       [WIDTH <nWidth>] [RIGHT] ;
       [FONT <aFont>] ;
       [OFFSET <aTLBR>] ;
       [COLOR <cClr>]
```

Arguments

`<nTop>, <nLeft>, <nBottom>, <nRight>`

Label coordinates.

`<cLabel>`
Label text.

`<nWidth>`
Label width.

`RIGHT`
If specified, the expression output will be right justified.

`<aFont>`
Array of three elements: {cFont, nSize, nWeight}. Specifies which font will be used to draw the label with.

Default is {“Arial”, 16, FW_NORMAL}.

`<aTLBR>`
This is an array of four elements, {nTop, nLeft, nBottom, nRight}, in pixels used for row and column alignment.

`<cClr>`
Output colour in ‘N/W’ format.

Example

```
LOCAL aFont := { 'Arial', 17, FW_BOLD }
@ 02, 05, 03, 21 LABELOBJ 'Employee Details' WIDTH 25 RIGHT FONT aFont
```

## @...SAY

Output value of an expression at given coordinates.

Syntax

```
    @ <nRow>, <nCol> ;
       SAY <exp> [PICTURE <cPicture>] ;
       [COLOR <cColorString>] ;
       [CAPTION <cCaption>]
```

Arguments

Same as those for Clipper except for the additional ones below.

`<cCaption>`
Caption text.

Example

```
@ 01, 10 SAY 'Killer Application V10.0' ;
         CAPTION ‘Application:’
```

Output

```
      Application: Killer Application V10.0
```

## @...SAY PUSHBUTTON

Draw a pushbutton at given coordinates. This pushbutton will not be part of GET subsystem.

Syntax

```
    @ <nRow>, <nCol> PUSHBUTTON ;
       [CAPTION <cCaption>] ;
       [WIDTH <nWidth>] ;
       [STATE <bAction>] ;
       [OFFSET <aTLBR>]
```

Arguments

`<nRow>, <nCol>`

PUSHBUTTON coordinates. Pushbutton is 7 characters wide.

`<cCaption>`

Caption text is used for button label.

`<nWidth>`

Button width. It defaults to 7.

`<bAction>`

This code block is evaluated when pushbutton is clicked by user.

`<aTLBR>`

This is an array of four elements, {nTop, nLeft, nBottom, nRight}, in pixels used for row and column alignment.

Example

```
LOCAL lSave := .T.
LOCAL nBtn := 0

@ 08, 02 PUSHBUTTON ;
      CAPTION 'OK' ;
      STATE {|| hb_keyPut( K_CTRL_W ) }
```

## WMENU TO

Returns last menu event of active menu. See WVWMENU.PRG for more details.

Syntax

```
    WMENU TO <nVar>
```

Arguments

`<nVar>`
The variable receives the last menu event of active menu.

Example

```
WMENU TO nOpt
```

## WAlert()

Display a dialog box.  This function is not the same as Alert().

Syntax

```
    WAlert( <cMessage> ), <cHead>] )
```

Arguments

`<cMessage>`

Text to be displayed in the dialog box.

`<cHead>`

Dialog box heading. Defaults to ‘Alert’.

Example

```
WAlert( cName + ';' + ;
   DToC( dDOB ) + ';' + ;
   cStatus + ';' + ;
   Str( nSalary ) + ';' + ;
   iif( lEmployed, 'Y', 'N' ), ;
   ‘Warning! ’ )
```

## WClear()

Clear topmost window and its GUI objects.

Syntax

```
    WClear()
```

Arguments

None

Example

```
WClear()
```

## WClose()

Close topmost window.

Syntax

```
    WClose()
```

Arguments

```
None
```

Example

```
WClose()
```

## WInit()

Initialize current window.

Syntax

```
    WInit( [<cTitle>] )
```

Arguments

`<cTitle>`

Window title.

Example

```
WInit( ‘Edit Employee Details’ )
```

## WOpen()

Open a new sub-window.

Syntax

```
    WOpen( <nTop>, <nLeft, <nBottom>, <nRight>, ;
       <cTitle>, <lGUIWin>, <lCenter>, <nLineSpacing> ) ;
       => nWinNum
```

Arguments

`<nTop>, <nLeft, <nBottom>, <nRight>`

Sub-window coordinates

`<cTitle>`

Window title.

`<lGUIWin>`

.T. – GUI window (GETs will have boxes drawn around them)

.F. – Console window

Defaults to application type specified in WSetup() call.

`<lCenter>`

Flag to center window.  Defaults to .F..

`<nLineSpacing>`

See GTWVW documentation. It must be an even number defaulting to:

6 for GUI window or

0 for console window.

Example

```
LOCAL nWinNum

nWinNum := WOpen( 2, 3, 11, 35, 'Browse Example', .T., .T., 0 )
```

## WSetup()

Setup a GTWVW environment. This function is called only once at the start of an application.

Syntax

```
    WSetup( <lGUIApp>, < cIconFile > )
```

Arguments

`<lGUIApp>`
Set it to .T. for GUI applications. Default .F.; Console application.

`<cIconFile>`
Application icon file.

Example

```
WSetup( .T., hb_DirBase()+"resource\wvwclip.ico")
```