

Move Forms & Controls Example

This example application was developed in response to various forum questions including:

<http://www.accessforums.net/showthread.php?t=75572> (ironfelix717)

<https://www.access-programmers.co.uk/forums/showthread.php?t=302641> (Iana)

Moving (and resizing) objects to precise locations on the screen is very easy using the **Move** method expression **Move(Left, Top, Width, Height)**

For example, **Forms!Form1.Move 100,200,500,350**

This moves the top left of Form1 to x-y co-ordinates 100,200 and changes the width and height to 500 & 350 (where all values are in **twips** – see later)

Similarly, controls can easily be moved on a form.

For example, this code moves Box9 so it is located immediately below textbox Text2:

Me.Box9.Left = Me.Text2.Left

Me.Box9.Top = Me.Text2.Top + Me.Text2.Height

The example application does both of the above but also demonstrates some much more complex processes.

For example, it shows how:

- A popup form such as a customised zoom box can be moved to a precise position over another form irrespective of form settings
- A listbox record can be 'selected' without clicking on the listbox. This is done by accurately detecting the record underneath the mouse cursor based on the height of each row in the listbox. This means the record can be used e.g. to open a filtered form / view an image without actually selecting the listbox record!
- The x-y coordinates of an object on a form can be determined and the object nudged by a specified amount in any direction

Each of these has been successfully tested using a variety of situations:

- Navigation bar - maximised/minimised/removed
- Ribbon - maximised/minimised/removed
- Application window – maximised / restored
- Different screen sizes and resolution
- Enlarging the screen display setting from the default 100% to 125%

Different form conditions have been tested including:

- Border style – none / thin / sizable / dialog
- Scrollbars – none / horizontal only / vertical only / both
- Navigation button bar – visible / hidden
- Record selectors – visible / hidden
- Different fonts – font name / point size & style (bold / italic / underline)

NOTE:

It is NOT possible to hide the application window for this example.

Doing so would require the use of popup forms which isn't possible here due to the simultaneous use of 2 forms in example forms 1-4

There are many complications that need to be managed for this to work well:

1. **Units of measurement – twips, pixels and points**

The position of objects in the Access window is determined in **twips (one twentieth of imperial point size)** where 1440 twips = 1 inch or 567 twips = 1 cm

The x-y coordinates of the top left of the application window are 0, 0

However, the position of the mouse cursor is measured in **pixels** with reference to the overall screen:

- 1 pixel (px) = 15 twips so 96px = 1440 twips = 1 inch

Font size is measured in **points** (pt) where 1 point = 20 twips

A 72 **point** font = 1 inch = 1440 twips = 96px ;

12pt = 16px = 240 twips = 1/6 inch, 3 points = 60 twips = 4 px etc

Complications arise with font sizes that are not factors of 72. For example:

- 11 pt font = 220 twips = 14.667 px but as you cannot have a part pixel that actually requires 15 px
- 10 pt font = 200 twips = 13.33px so this takes up 14px which is a significant difference

For further info, see <https://websemantics.uk/tools/convert-pixel-point-em-rem-percent/>

This makes pt => px conversions difficult to do precisely and can lead to errors on the screen

There are three main ways of doing this conversion:

- Use conversion values as above with arbitrary corrections to align objects as well as possible
This may be adequate for a selected font name & size but is very likely to be inaccurate if either / both of these are altered.
- Use values calculated by a direct points/pixels to twips conversion based on code such as the **ConvertToTwipsYFromPoint** function based on the widely used **GetSystemMetrics API**.
This manages the inexact conversion between 72 points and 96 pixels per inch by building in a 'jump' every 3 points

Point size = 1 ; Twips = 15
Point size = 2 ; Twips = 30
Point size = 3 ; Twips = 60
Point size = 4 ; Twips = 75
Point size = 5 ; Twips = 90
Point size = 6 ; Twips = 120
Point size = 7 ; Twips = 135
Point size = 8 ; Twips = 150
Point size = 9 ; Twips = 180
Point size = 10 ; Twips = 195
Point size = 11 ; Twips = 210
Point size = 12 ; Twips = 240
Point size = 13 ; Twips = 255
Point size = 14 ; Twips = 270
Point size = 15 ; Twips = 300
Point size = 16 ; Twips = 315
Point size = 17 ; Twips = 330
Point size = 18 ; Twips = 360
Point size = 19 ; Twips = 375
Point size = 20 ; Twips = 390
Point size = 21 ; Twips = 420
Point size = 22 ; Twips = 435
Point size = 23 ; Twips = 450
Point size = 24 ; Twips = 480

This approach can work reasonably well for some standard fonts between about 10pt & 14pt.

However, it gets increasingly inaccurate for much larger/smaller fonts. It also makes no allowance for certain fonts e.g. **Comic Sans** being taller than the normal value for that point size.

The image below shows a capital A in 13 different standard Windows fonts - all are 72 points



Stephen Lebans uses an enhanced version of this code in several example applications such as

- <http://www.lebans.com/SelectRow.htm>
- <http://www.lebans.com/textwidth-height.htm>

The code I originally developed was partly based on the second example above.

I am always amazed by Stephen's ability to do things that us mere mortals would never achieve alone.

Even so, the results using his code are not perfect for all situations

- A MUCH better method makes use of the little known VBA **WizHook** function. This actually measures the height and width of a character string based on the font name, font style normal, italic etc. This approach should ALWAYS work no matter what the situation. My tests confirmed that to be so.

The issue with **WizHook** is that it is a hidden function which has been available for over 20 years but is not documented by Microsoft. In theory it could be removed in a future release, but as it is used in some built-in wizards, I believe that to be highly unlikely

However, there is very little information about this function online apart from:

- <http://www.mvp-access.es/juanmafan/wizhook/wizhook.htm> (in Spanish)
- ftp://developpez.com/cafeine/access/access_wizhook.pdf

See the end of this article for additional information about hidden VBA functions such as **WizHook**

2. Form components

In order to locate an object **precisely on / over** a specific control on a different form, we need to know the size and position of each component of a form – not all items will be present depending on form settings.

The application calculates ALL of these items for use as required

Screen & Form Information [Close]

Screen Dimensions (twips) :
Width: (SW) 25200
Height: (SH) 15750

Screen Resolution (pixels) :
Horizontal: (HR) 1680
Vertical: (VR) 1050

Form Name: Form2
Form Position:
Top: (FT) 1800
Left: (FL) 855

Form Dimensions Key :
Form Dimensions:
Total Height: (TH) 5025
Total Width: (TW) 8475
Inside Height: (IH) 4305
Inside Width: (IW) 8130
Header Height: (HH) 1095
Detail Height: (DH) 405
Footer Height: (FH) 390
Title Bar Height: (TBH) 390
Vertical Border Width: (2 of) (VBW) 45
Horizontal Border Height: (HBH) 45
Navigation Button Bar Height: (NBH) 285
Record Selector Width: (RSW) 255
Vertical Scroll Bar Width: (VSW) 255
Horizontal Scroll Bar Height: (HSH) 0

Horizontal scroll bar shares space with navigation button bar (if visible)

Version 7.3 20/02/2019 Screen dimensions & resolution updated every 10 seconds Mendip Data Systems 2005-2019

3. Using the example application

The example application includes an **Images folder**

For the purposes of this example, this needs to be a subfolder of the example app

The size of the navigation pane, ribbon and application window can all be controlled from the startup form.

Move Forms and Controls Form Info Quit

There are 6 forms available in this example:

Forms 1 - 3 show how a zoom box can be used to view the entire contents of a standard textbox when it is too large to fit in the available space. Each form has 2 textboxes. Double click either textbox. The zoom box is opened / moved directly below the textbox. It should align whether or not record selectors / navigation buttons are used. Similarly the border style should have no effect on the alignment.

Form 4 & 5 use listboxes to display images or open / move another popup form. The actions can be controlled using mouse move or a mouse click

Form 6 just shows how coordinates can be updated as a control is moved on a form or as the form is moved around the screen

Form 1 - Single Form 4 - Listbox Contacts

Form 2 - Continuous Form 5 - Listbox Images

Form 3 - Continuous Subform Form 6 - Coordinate Test

Options: Navigation Pane Ribbon Application Window

☐ Hide ☐ Hide ☐ Hide (DISABLED)

☐ Minimise ☐ Minimise ☐ Restore

☒ Maximise ☒ Maximise ☒ Maximise

NOTE: The application window can not be hidden for this demo due to use of multiple forms

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There are 6 test forms available:

Forms 1 - 3 (Single / Continuous / Continuous Subform)

Each of these is designed show how a zoom box can be used to view the entire contents of a standard textbox when it is too large to fit in the available space.

Each form has 2 textboxes and several different options that can be applied

Double click either textbox. The **zoom box** is opened / moved directly below the textbox.

Single Form Form Info Close

Double click either textbox.
Form2 will open/move directly below that textbox
The orange box will move directly below the other textbox

Options: Border Style Scrollbars

☐ None ☐ None

☐ Thin ☐ Horizontal only

☐ Sizable ☒ Vertical Only

☒ Dialog ☐ Both

Text0 hello world

Text2 Goodbye

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Single Form Form Info Close

Double click either textbox.
Form2 will open/move directly below that textbox
The orange box will move directly below the other textbox

Options: Border Style Scrollbars

☐ None ☐ None

☐ Thin ☐ Horizontal only

☐ Sizable ☒ Vertical Only

☒ Dialog ☐ Both

Text0 A bit more text that doe

Text0 Zoom
A bit more text that doesn't fit in the box.

Text2 A very long sentence that

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Records: 1 of 5 No Filter Search

ID	Text0	Text2
1	hello world	Goodbye
2	Some text	A short string
3	A bit more text that doe	A very long sentence that doe
5	rhubarb	and custard
6	Mendip Data Systems	
(New)		

Options: Record Selectors ☒ Navigation Buttons ☒

Record: 1 of 5

ID	Text0	Text2
1	hello world	Goodbye
2	Some text	A short string
3	A bit more text that doe	A very long sentence that doe
5	rhubarb	and custard
6	Mendip Data Systems	
(New)		

Options: Record Selectors ☒ Navigation Buttons ☒

Record: 3 of 5

Form & Subform

ID	Text0	Text2
1	hello world	Goodbye
2	Some text	A short string
3	A bit more text that doe	A very long sentence that doe
5	rhubarb	and custard
6	Mendip Data Systems	
(New)		

Options: Record Selectors ☒ Navigation Buttons ☒

Record: 1 of 5

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Form & Subform

ID	Text0	Text2
1	hello world	Goodbye
2	Some text	A short string
3	A bit more text that doe	A very long sentence that doe
5	rhubarb	and custard
6	Mendip Data Systems	
(New)		

Options: Record Selectors ☒ Navigation Buttons ☒

Record: 3 of 5

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The zoom box should align closely whether or not record selectors / navigation buttons / scrollbars are used. Similarly, the border style should have no effect on the alignment.

Typical code (this is taken from Form2)

```
Private Sub Text0_DblClick(Cancel As Integer)
```

```
    'close zoom form if open
```

```
    If CurrentProject.AllForms("frmZoom").IsLoaded = True Then DoCmd.Close acForm, "frmZoom"
```

```
    strText = Nz(Me.Text0, "")
```

```
    strCaption = "Text0 "
```

```
    'check record containing text has been clicked
```

```
    If Nz(Me.RecNum, "") <> "" And strText <> "" Then
```

```
        intLeft = Me.WindowLeft + Me.Text0.Left + intRecSelWidth
```

```
    'check if subform
```

```
    If IsSubform Then
```

```
        intBase = intTitleBarHeight + intHeightHeader + Me.WindowTop + Me.Text0.Top + Me.Text0.Height _
            + (Me.RecNum - 1) * Me.Detail.Height - intNavBarHeight - intBorderHeight
```

```
    Else
```

```
        intBase = intTitleBarHeight + intHeightHeader + Me.WindowTop + Me.Text0.Top + Me.Text0.Height _
            + (Me.RecNum - 1) * Me.Detail.Height
```

```
    End If
```

```
    'open / move the form
```

```
    DoCmd.OpenForm "frmZoom"
```

```
    Forms!frmZoom.Move intLeft, intBase
```

```
    End If
```

```
End Sub
```

Forms 4 & 5 - Listboxes

The listbox selection opens / moves another popup form or displays an image for the selected/highlighted record. The actions can be controlled using mouse move or a mouse click

As stated earlier in this article, **records are NOT selected when moving the mouse over the listbox**

Instead, code is used to determine the listbox position based on the calculated height of each listbox row and the mouse cursor position. The listbox row height depends on several things including font name, point size and the 1 pixel (15 twips) space left between each row for legibility.

To complicate matters, the first row is 45 twips (3 pixels) taller than all following rows. That happens whether or not column headers are displayed!

That information is used to **highlight** the record under the cursor so the data in the listbox record can be 'read' just as if it had been **selected by clicking**

Options – mouse move code can be enabled / disabled

Listbox options – column headers on/off ; change font name and font size, normal or italic style

Form4

Listbox Popup

Form info Close

Move the mouse or click any record in the listbox. A popup form opens in the same place to the right showing the full record

Options: Show Column headers? ☒ Enable Mouse Move ☒ Move Popup Form With Selection ☒

LastName	FirstName
Bailey	Bill
Barnes	Fred
Black	Roger
Brown	Ron
Browning	Elaine
Cooper	Angela
Duncan	Roger
Jones	Alan
Jones	Ellen
Redmond	Nadia
Riddington	Colin
Rogers	Shaun
Sanders	Tom
Spalding	Stephen
Wardley	Alyson

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Contacts

ContactID:

Company: Mendip Heights Community School

LastName: Cooper

FirstName: Angela

EmailAddress: acooper@mendipheights.co.uk

JobTitle: Network Manager

BusinessPhone: 01904 564321

HomePhone:

MobilePhone:

FaxNumber:

Address: 123 High Street

City: Wells

County: Somerset

PostCode: BA5 2AA

Country:

WebPage:

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Record: 14 of 1 Filtered Search

Form5

Listbox Images

Form Info Close

Move the mouse over the listbox (with or without the mouse held down). As you do so, the image is displayed together with the file name. NOTE: It is not necessary to click the listbox item

Options: Show Column headers? ☒ Font Name: Calibri

ID	Name	Type
1	Connect	gif
2	Exclamation	gif
3	Fail	gif
4	FilterOff	png
5	FilterOn	png
6	Full_Screen	png
7	Information	gif
8	Lock	png
9	Logo	gif
10	Question	gif
11	Success	gif
12	Unlock	png

Image

Question.gif

Font Size: 11 Italic? No

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Form5

Listbox Images

Form Info Close

Move the mouse over the listbox (with or without the mouse held down). As you do so, the image is displayed together with the file name. NOTE: It is not necessary to click the listbox item

Options: Show Column headers? ☐ Font Name: Trebuchet

1	Connect	gif
2	Exclamation	gif
3	Fail	gif
4	FilterOff	png
5	FilterOn	png
6	Full_Screen	png
7	Information	gif
8	Lock	png
9	Logo	gif
10	Question	gif
11	Success	gif
12	Unlock	png

Image

Success.gif

Font Size: 14 Italic? Yes

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In both forms, the height of each listbox row is calculated using code like this:

```
Private Function GetListboxRowHeight()  
    'Wizhook converts row height perfectly  
    WizHook.Key = 51488399  
    Dim lx As Long, ly As Long 'width & height of character string  
    Dim LBRH As Long 'LBRH = listbox row height in twips  
  
    With Me.lstContacts 'listbox name  
        If WizHook.TwipsFromFont(.FontName, .FontSize, .FontWeight, .FontItalic, .FontUnderline, 0, _  
            "ABCghj", 0, lx, ly) = True Then  
            LBRH = ly + 15 'font height +15 twips (1px space between rows)  
        End If  
    End With  
  
End Function
```

This is used in the **listbox mouse move** code to determine the 'current' record for highlighting / 'reading'.
For example:

```
Private Sub lstImages_MouseMove(Button As Integer, Shift As Integer, x As Single, y As Single)  
    'get record in listbox by moving over record  
    'LBRH =listbox row height - calculated in GetListboxRowHeight procedure  
  
    If LBRH = 0 Then Exit Sub  
    Screen.MousePointer = 1 'arrow- helps prevent flicker  
  
    intColumnHeads = Me.lstImages.ColumnHeads 'are column headers visible?  
    '-1 if true, 0 if false so subtracting it adds 1 if headers shown  
    'deduct 45 to allow for larger top row  
    lstPos = ((y - 45) \ LBRH) + 1 + intColumnHeads  
  
    If lstPos <> OldlstPos Then 'cursor has moved  
        LC = Me.lstImages.ListCount + intColumnHeads '-1 to allow for header  
        Me.lstImages.Selected(lstPos - 1 - intColumnHeads) = True 'highlight on mouse move  
  
        'get image path  
        strPath = Nz(DLookup("FileName", "tblImages", "ID=" & lstPos), "") & "." & _  
            Nz(DLookup("FileType", "tblImages", "ID=" & lstPos), "")  
  
        If strPath <> "." Then  
            Me.lblFileName.Caption = strPath  
            strPath = CurrentProject.Path & "\Images\" & strPath  
            Me.Image1.Picture = strPath  
        End If  
  
        'show image if in list  
        If lstPos > 0 And lstPos <= LC Then  
            Me.lblImage.Visible = True  
            Me.Image1.Visible = True  
            Me.lblFileName.Visible = True  
        Else  
            Me.lblImage.Visible = False  
            Me.Image1.Visible = False  
            Me.lblFileName.Visible = False  
  
            'deselect all records if move beyond end of list  
            For N = 1 To Me.lstImages.ListCount  
                Me.lstImages.Selected(N) = False  
            Next
```

```

End If
OldIstPos = IstPos
End If

```

```

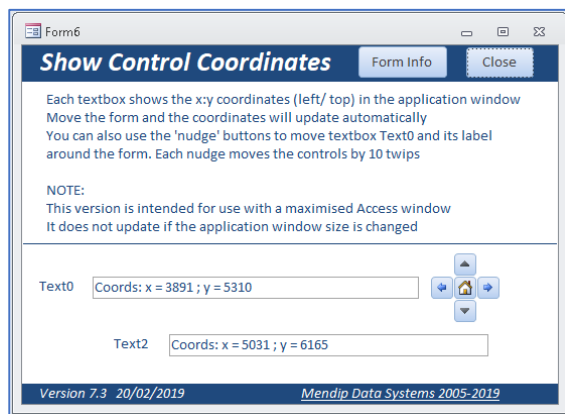
Screen.MousePointer = 0 'reset to default
End Sub

```

Form 6 - coordinate display

This shows how coordinates can be updated as a control is moved on a form (using 'nudge' buttons) or as the form is moved around the screen

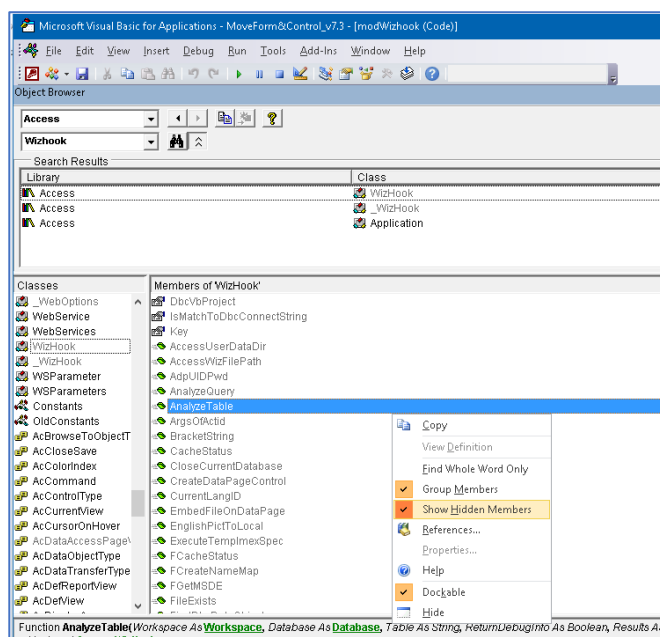
Each 'nudge' moves both textbox and label by 10 **twips** in the direction of the arrow.
The 'home' button restores the original position



4. Using WizHook and other hidden VBA functions

Access contains many built-in **hidden functions** - most are undocumented and its always possible that they could be removed when new versions are added. Over the years, I have used a number of these hidden members including **LoadFromText**, **SaveAsText**, **Wizhook** and others. All those I've tried are definitely functional and indeed useful.

To view **hidden functions** in the VBE right click in the object browser and select **Show Hidden Members**
NOTE: You can use these functions even when they are hidden



The screenshot shows some of the members of the hidden **Wizhook** function.
There are many more as you will see if you check for yourself
I've tried several of them and found some very useful features.
However, I've no idea what a few of them doYET! Give me enough time though!

Wizhook has one additional feature that is AFAIK unique.
You MUST supply the **Wizhook** key in your code or it won't work

Code:

```
WizHook.Key = 51488399
```

Many thanks to **skrol** for alerting me to that key value a couple of years ago.
Skrol is the author of the excellent free Access add-in, **V-Tools** <http://www.skrol29.com/us/vtools.php>
The V-Tools deep search feature is particularly useful

5. *Current and future developments*

I hope this example application will prove useful to others

I have been successfully using the **movable zoom box form** for a few years with several of my applications
I also have a few ideas for deploying the **listbox mouse move highlight & 'select'** code in real world applications of my own.

I would be very interested in **user feedback** about how this code can be applied in other Access applications

6. *Acknowledgements:*

I am extremely grateful for the valuable assistance provided by the following:

- **Stephens Lebans** – various conversion functions partly based on the **GetSystemMetrics API**
- **AccessForums.net** member **Ajax (Chris Arnold)** for various improvements to prevent **screen flicker** with the **mouse move** code used in the listbox example forms 4 & 5
- **AccessForums.net** member **daolix** for alerting me to the use of the **WizHook** function for this example
- **Skrol** for providing the **Wizhook** key needed to use the function