Created with a trial version of Syncfusion Essential PDF

NORTHWIND TRADERS

Company Headquarters,
2501 Aerial Center Parkway,
Suite 110, Morrisville, NC 27560,
TEL 1-888-936-8638.

George Shepherd's Windows Forms FAQ

Welcome to the Windows Forms FAQ. Questions and answers in this FAQ have been collected from newsgroup posts, various mailing lists and the employees of Syncfusion. I have tried to mention the source wherever possible. If you think that you should be credited for an answer, please send me a note and I will be happy to add a credit mention.

If you have a FAQ, or any other good Windows Forms resource, please email me. The Windows Forms FAQ forum is available if you need more information.

A. Windows Forms

(1) Deployment	(2) Controls	(3) Books
(4) Data Binding	(5) Datagrid	(6) Docking
(7) Keyboard Handling	(8) Layout	(9) Licensing
(10) Menus	(11) Mouse Handling	(12) from MFC
(13) VB6	(14) Patterns	(15) Printing
(15) Resources	(16) Scrolling	(17) Tips
(18) Common Dialogs	(19) ListBox	(20) ComboBox
(21) RichTextBox	(22) ListView	(23) TreeView
(24) Button	(25) TabControl	(26) TextBox
(27) Cursors	(28) WebBrowser	(29) ProgressBars
(30) PictureBox	(31) Form	(32) CheckedListBox
(33) MDI	(34) In IE	(35) Smart Client

1. Windows Forms Deployment

1.1 How can I run an EXE from within my application?
1.2 What are the common issues in redirecting assemblies using the publisher policy files?
1.3 How can I find all programs with a GUI (not just arbitrary windows) that are running on my local machine?
1.4 How can I get a list of all processes running on my system?
1.5 How can I make sure there is only one instance of my application running?
1.6 How do I determine which operating system is running?
1.7 How can I get all IP addresses for my local machine?
1.8 My user does not have .NET installed. Will he be able to run my Windows Forms application?
1.9 How do I get the path to my running EXE?
1.10 How can I programmatically obtain the name of the assembly that the code is executing in ?
1.11 How can I see what is installed in the Global Assembly on a machine?
1.12 How do I set the company name that is returned by System.Windows.Forms.Application.CompanyName?

2. Windows Forms Controls

2.1 How do you prevent serialization of certain child controls in your Composite Control?
2.2 How do I get hold of the currently focused Control?
2.3 Why do calling Focus() on a control not set focus on it?
2.4 How do I listen to windows messages in my Control?
2.5 How do I programatically change the color of a control?
2.6 How can I change the Border color of my control?
2.7 Why should I provide a Non-Client border to my Control derived class?
2.8 How do I provide a 2 pixel 3d border in the Non-Client area of my Control derived class?
2.9 How do I provide a 1 pixel border in the NonClient area of my Control?
2.10 How do I invalidate a control including it's NonClient area?
2.11 How can I implement a scrollable picture box?
2.12 How can I put Controls, a ProgressBar for example, into a StatusBar?
2.13 How do I implement an ownerdrawn statusbar so I can put a progressbar in it?
2.14 How would I change the icon that appears on the toolbox for a custom control?
2.15 A control's Validating event is hit even when the user clicks on the Close box. How can I avoid this behavior?
2.16 I would like to prevent validation in my textbox when the user clicks on my Cancel button, how do I do this?
2.17 Why does adding images to an ImageList in the designer cause them to lose their alpha channel?
2.18 Why do the XP Icons when drawn using Graphics.DrawImage not draw transparently?
2.19 Why do the XP Icons that have alpha channel not draw properly when associated with controls like ListView?
2.20 How do I prevent resizing of my Controls by the user, via Docking or anchoring or manual resizing during design-time?
2.21 What control do I use to insert Separator lines between Controls in my Dialog?
2.22 How can I make my controls transparent so the form's background image can show through them?
2.23 How do I create an editable listbox with an in-place TextBox and Button?
2.24 How do I determine the width/height of the Non-Client area (like the border in a textbox) of a Control?

Copyright Northwind Inc. 2001 - 2017

2.25 How can I programmatically manipulate Anchor styles?
2.26 What is the best method to override in custom Controls to perform custom initialization during runtime?
2.27 I set a Control's Visible property to true and in the immediate next statement, it returns false. Why doesn't setting the Visible property 'take'?
2.28 I'm trying to make the background of my linklabel transparent so a picturebox will show through it. However, if I set the link label's BackColor property to Transparent the label still has a white background. Why?
2.29 How do I dynamically load a control from a DLL?
2.30 What is the (DynamicProperties) item listed on a control's property page in VS.NET?
2.31 How can I make a Panel or Label semi-transparent on a Windows Form?
2.32 How can I add a control to a Window Form at runtime?
2.33 How do I make the arrow keys be accepted by a control (such as a button) and not handled automatically by the framework's focus management?
2.34 In the property browser for a custom control, how do I disable a property initially, but enable it later based on some other property changing?
2.35 How can I have the control designer create the custom editor by calling the constructor with the additional parameters rather than the default constructor?
2.36 How do I listen to the screen resolution change in my control?
2.37 How do I determine which button in a Toolbar is clicked?

3. Windows Forms Books

3.1 Windows Forms Programming in C#?
3.2 Programming Microsoft Windows with C#?
3.3 C# Design Patterns?

4. Windows Forms Data Binding

4.1 Does MySql work with ADO.NET?
4.2 Where can I find a discussion of databinding and windows forms?
4.3 How do I test for a null value in DataView.RowFilter?
4.4 I don't have SQL Server. Is there any way to run the samples that need SQL server?
4.5 How can I programmatically move through a dataset that has bound controls?
4.6 When I try to update a dataset I get an error that the system is unable to find "Table"?
4.7 How can I bind an ArrayList to a DataGrid?
4.8 When I try to bind two comboboxes to the same datatable, both boxes show the same values, changing one changes the other. How do I make them have distinct values?
4.9 How do I bind a mdb file to a datagrid?
4.10 How do I bind a listbox or a combobox to a MDB file?
4.11 In my databound ComboBox, how do I set the SelectedItem property?
4.12 Are server side cursors supported in .NET?
4.13 I am populating a ListBox by binding it to an ArrayList. The initial display is OK, but later changes to my ArrayList are not shown in my ListBox. How can I get the changes to show properly?
4.14 My SQL server runs on a non-default port. How can I specify this port in my connection string?
4.15 What is a DataSet?
4.16 How do I add updating support to a dataset?
4.17 How can I import a CSV file into a DataTable?
4.18 How can I prevent a ComboBox and DataGrid bound to the same DataTable from sharing the same current position?
4.19 I get a 'This would cause two bindings in the collection to bind to the same property' error message. What might cause this?
4.20 How do I bind a TextBox to a nested relation?
4.21 How do I call a SQL stored procedure?
4.22 I programatically change a bound TextBox value, but the value does not get pushed back into the bound datasource. How can I make sure the DataSource is updated?
4.23 Why does the CheckedListBox lose checked state when placed in a tab page that gets hidded and shown?

5. Windows Forms Datagrid

5.1 How can I programatically set the rowheight of a row in my DataGrid?
5.2 How can I autosize the rowheights in my datagrid?
5.3 How do I prevent sorting a single column in my DataGrid?
5.4 How do I programmatically select a row in DataGrid?
5.5 How can I translate a point to a cell in the datagrid?
5.6 I lost the settings in my DataGrid set during design-time?
5.7 How do I prevent a click into the grid highlighting a cell?
5.8 How do I prevent the datagrid from displaying its append row (the row at the end with an asterisk)?
5.9 How can I put a combobox in a column of a datagrid?
5.10 How can I catch a double-click into a column header cell?
5.11 How can I select the entire row when the user clicks on a cell in the row?

Copyright Northwind Inc. 2001 - 2017

5.12 How can I get text from a column header in a MouseUp event?
5.13 How do I hide a column?
5.14 How do I color a individual cell depending upon its value or some external method?
5.15 How can I put a checkbox in a column of my DataGrid?
5.16 How can I restrict the keystrokes that will be accepted in a column of my datagrid?
5.17 How do I make a field auto increment as new rows are added to my datagrid?
5.18 How can I prevent a particular cell from being editable?
5.19 How do I move columns in a datagrid?
5.20 How can I do cell by cell validation in a datagrid?
5.21 How do I programmatically determine the selected rows in a datagrid?
5.22 How can I move rows by dragging the row header cell?
5.23 I want to do custom handling of special keys such as the Tab key or F2 in the TextBox of a column in the DataGrid. How do I subclass this TextBox to get at it virtual members?
5.24 How can I have a column of icons in my datagrid?
5.25 How can I tell if the current row has changed and whether I am on the AddNew row or not?
5.26 How do I hide the gridlines or set them to a particular color?
5.27 How can I get the selected text in an active gridcell?
5.28 How do I determine whether a checkbox in my datagrid is checked or not?
5.29 How can I bind the datagrid to a datasource without using any wizards?
5.30 How can I bind two datagrids in a Master-Detail relationship?
5.31 How do I get the row or column that has been clicked on?
5.32 How do I add an unbound column to my bound datagrid?
5.33 How do I get the row and column of the current cell in my datagrid?
5.34 How can I prevent the Enter key from moving to the next cell when the user is actively editing the cell and presses Enter?
5.35 How do I set the width of a column in my DataGrid?
5.36 How can I implement OLE Drag & Drop between a DataGrid and another OLE DnD object that supports the Text format?
5.37 How can I make my DataGrid support a single select mode, and not the default multiselect mode?
5.38 How can I get celltips or tooltips to vary from cell to cell in my DataGrid?
5.39 How can I get notification of the changing of a value in a column of comboboxes within my datagrid?
5.40 How can I make the datagrid have no currentcell?
5.41 How can I make my grid never have an active edit cell and always select whole rows (as in a browser-type grid)?
5.42 I have hidden (column width = 0) columns on the right side of my datagrid, but tabbing does not work properly. How can I get tabbing to work?
5.43 How can I get the number of rows in my DataGrid?
5.44 How do I format a date column in a datagrid?
5.45 How can I change the width of the row headers or hide them?
5.46 How do I catch a doubleclick in my datagrid?
5.47 How can I make my last column wide enough to exactly occupy all the client area of the datagrid?
5.48 How can I prevent my user from sizing columns in my datagrid?
5.49 How can I catch the bool values changing in a DataGridBoolColumn?
5.50 When I click on a row header, the row is selected and no cell is active. How can I do this programmatically?
5.51 How can I force the vertical scrollbar in my DataGrid to always be visible?
5.52 How can I autosize a column in my datagrid?
5.53 How can I get rid of the error icon that appears when there is an editing error?
5.54 How do I find the top-left visible cell in a datagrid?
5.55 I want to display negative values with a CR suffix, instead of a minus sign. How can I perform custom formatting on the cells in my datagrid?
5.56 I want to do sort of a database join of two tables. How can I use data from two DataTables in a single DataGrid?
5.57 How do I display a column of buttons such as pushbuttons or combobox buttons?
5.58 How can I put up a confirmation question when the user tries to delete a row in the datagrid by clicking on the row header and pressing the Delete key?
5.59 How can I enable column selections in my datagrid?
5.60 How do I programmatically scroll the datagrid to a particular row?
5.61 How can I place text in the rowheader column of my datagrid?
5.62 How do I set default values for new rows in my datagrid?
5.63 How do I iterate through all the rows and columns in my datagrid?
5.64 How can I specially color only the currentcell of my readonly datagrid?
5.65 How can I make the Enter Key behave like the Tab Key and move to the next cell?
5.66 How do I use the DataColumn.Expression property to add a computed/combined column to my datagrid?
5.67 How can I change the font used in a grid cell on a cell by cell or row by row basis?
5.68 How can I use a mouse to select cell ranges in my datagrid?
5.69 How can I control the cursor over my DataGrid?
5.70 How can I programatically add and remove columns in my DataGrid without modifying the DataTable datasource?
5.71 How can I have a column of bitmaps in a DataGrid?
5.72 How can I add my custom columnstyles to the designer so I can use them in my DataGrid at design time?

Copyright Northwind Inc. 2001 - 2017

5.73 After scrolling with the mouse wheel on a selected row in a DataGrid I cannot get it back into view. Is there a work around?
5.74 How can I make the DataGrid column be blank and not display (null) as the default value?
5.75 How can I add a DateTimePicker column style to the DataGrid?
5.76 How do I determine the DataGridTableStyle MappingName that should used for a DataGrid to make sure the grid uses my tablestyle?
5.77 I have a derived DataGridColumnStyle. From within my Paint override, how can I get at other values in the DataGrid?
5.78 How do I retrieve the current row from a DataTable bound to a DataGrid after the grid has been sorted?
5.79 How can I catch when the user clicks off the grid, say to close the form?
5.80 How can I get a CheckBox column in a DataGrid to react to the first click?
5.81 How can I use events to restrict key input to grid cells?
5.82 How can I format columns in my DataGrid without explicilty adding DataGridColumnStyles?
5.83 How can I auto-adjust keyboard input? For example, make typing 12312002 be taken as a valid date, 12/31/2002.
5.84 Can I display the rows in my datagrid in a free-form layout using textboxes on a panel?
5.85 How can I tell whether a scrollbar is visible in my DataGrid is visible?
5.86 How do I autosize the columns in my DataGrid so they always fill the the grid's client area?
5.87 How can I prevent all the cells in my DataGrid from being edited without deriving GridColumnStyle?
5.88 How can I prevent the plus-minus icon that appears next to the row header when I have a datagrid displayed bound to a datasource that has a relation defined?
5.89 How can I display master-details-details in three separate grids?
5.90 In my datagrid, if I press tab to enter a column using a derived columnstyle, the column does not receive focus. Why?
5.91 How can I detect when a cell starts being edited, not when it becomes current?

6. Windows Forms Docking

6.1 How can I make a control occupy all the client area of a form?
6.2 How can I make my control automatically grow when the parent form is sized?
6.3 What is the difference between a form's Anchor property and a form's Dock property?

7. Windows Forms Keyboard Handling

7.1 How can I prevent a control from getting a particular keystroke?
7.2 How can I tell if an ALT, Shift or CTL key is pressed without catching an event?
7.3 How do I check the state of the virtual keys, Caps lock for example?
7.4 How can I simulate keyboard input in my application?
7.5 How can I catch keyboard messages on a application-wide basis?
7.6 How can I listen for certain keys at the Form level irrespective of which Control has the focus?

8. Windows Forms Layout

8.1 How can I programmatically set the initial position of a Form so that it is displayed properly after calling ShowDialog()?
8.2 How do I create a custom layout engine?
8.3 I have a form with several controls on it. As I size the form, the controls are being resized continuously. Is it possible to postpone changing the controls position until the resizing is complete?

9. Windows Forms Licensing

9.1 How does .NET support licensing?
9.2 How do I find the file version of an EXE?

10. Windows Forms Menus

10.1 How do I clone menus, insert menus, use popup menus, etc.
10.2 How do I add a context menu to a control?
10.3 When using the ContextMenu on multiple Controls, how do I know on which Control the right click was performed?
10.4 How do menu shortcuts work?
10.5 How do I make the context menu appear only when clicked at certain portions of the Control?
10.6 How do I prevent the context menu from showing up on certain keyboard keys (like Keys.Apps)?
10.7 How do I know when a menu is closed/started so that I can refresh my status bar?
10.8 Is there an Idle event which will get fired from which I could update my menu item's enabled state?
10.9 How do I cancel a context menu programatically?
10.10 Is there an easy way to create the "Window" menu that shows the list of child forms open?
10.11 How can I work around my menu shortcuts from showing up incorrectly when I use Ctrl+Number?
10.12 How do I control the position of the context menu when it is invoked via the keyboard?

Copyright Northwind Inc. 2001 - 2017

10.13 How do I disable the default context menu of a textbox?
10.14 How can I make the context menu to close after a set time interval?
10.15 How can I add an icon to my menu items?
10.16 How to add a Separator in a menu?
10.17 How can I enable the mnemonics (underline) to show when my application is launched?

11. Windows Forms Mouse Handling

11.1 How can I resize a borderless form with a rubber-band effect?
11.2 How do I get a mouse cursor position in my control's client coordinates?
11.3 How can I catch the mouse being over a control?
11.4 How do I set the mouse cursor position?
11.5 How can I reset the OnMouseHover timer so that it will fire again without the mouse having to leave the client area of a control?
11.6 How can I drag a window if it doesn't have a title bar or border?
11.7 How can I determine if a mouse button is pressed and moving over my form?
11.8 Why am I not receiving MouseLeave messages in a Control in my Form?

12. Windows Forms from MFC

12.1 As a VC++ programmer, what should I look out for when using C#?
12.2 Where can I find a succinct discussion of Windows Forms?
12.3 When I add a destructor to a class, why isn't it hit when my instantiated object goes out of scope?
12.4 How do I convert a string to a double or int? What plays the role of atof and atoi in C#?
12.5 What class or method do I use to retrieve system metrics like the width of a scrollbar?
12.6 In C++, the code "MyClass ht;" creates an object ht on the stack frame. But in C#, this same code compiles, but gives a runtime error. Why?
12.7 I need to encode the LParam argument of a mouse message. How do I do MakeLong , HiWord and LoWord type conversions?
12.8 How do you clear the contents of a list box?

13. Windows Forms from VB6

13.1 How do I draw a line in VB7 as there is no Line command as there was in VB6?
13.2 What is the replacement for VB6's SendKeys statement?
13.3 In VB6, I used control arrays to have a common handler handle events from several controls. How can I do this in Windows Forms?
13.4 What is different about working with forms in VB.NET? For example, how can I reference one form from another form?

14. Windows Forms Patterns

14.1 How to display a status dialog in a background thread during a long operation and alow the user to cancel?
14.2 How can I throw my events asynchronously?
14.3 Why are the Tooltips not being shown on a NumericUpDown control?
14.4 How to get the hyperlink and the hyperlink text dragged from IE in my Control's drag-drop event?

15. Windows Forms Printing

15.1 How do I print a form?
15.2 How do I display the PrintPreview maximized and control its zooming?

16. Windows Forms Resources

16.1 What are the steps to compiling and using multiple language resources?
16.2 How do I load a BMP file that has been added to my solution as an embedded resource?
16.3 Why doesn't a Form containing an ImageList not open in WinRes?
16.4 Where can I find information on globalization?
16.5 How do I read embedded resources?
16.6 How can I check if a certain resource is included in a assembly?
16.7 How can I save a temporary disk file from an embedded string resource?
16.8 How do I embed a manifest file into my exe?
16.9 How do I read or write resources from code?
16.10 How do I create resources to make culture-aware programs without re-compiling code?
16.11 How do I programmatically use resources to make my programs culturely aware?
16.12 How can I dynamically load a resource file?

17. Windows Forms Scrolling

Copyright Northwind Inc. 2001 - 2017

17.1 How do I add support for custom scrolling to my own user control?
17.2 Are there any events that get fired when the user scrolls?

18. Windows Forms Tips

18.1 How do I write a screen saver?
18.2 How do I determine the screen resolution?
18.3 How do I determine the working area of a screen without the systemtray area?
18.4 How do I position my form to the bottom right of the screen when it opens up the first time above the system tray?
18.5 How do I change my screen's resolution programatically?
18.6 How do I determine the current date/time?
18.7 How do I determine the time taken for a long operation that I perform?
18.8 What are the implications of using the Timer class in System.Timers as opposed to the Timer class in System.Windows.Forms?
18.9 Is there an easy way to Create/Delete/Move files in the Windows File System?
18.10 How can I use XP Themes with Windows Forms using the .NET FrameWork 1.1?
18.11 How can I use XP Themes with Windows Forms using the .NET FrameWork 1.0?
18.12 How do I use Windows Forms Controls in Internet Explorer?
18.13 Are event handlers required to have this signature void MyEventHandler(object sender, EventArgs e)?
18.14 How do I change a directory name?
18.15 How do I beep the computer's speaker in a Windows Form application?
18.16 How do I use the system clipboard?
18.17 How do I add an application to the Window's Tray?
18.18 Why would I be getting a NullReferenceException in Windows Forms with no application code in the call stack?
18.19 When I try to catch the Resize event to handle sizing of MDI children, the event is called even before my form's constructor can create the children throwing an exception. How do I avoid this?
18.20 How can I tell if the user has changed some system preference such as the locale or display settings?
18.21 What mechanisms does .Net provide to convert one type to another?
18.22 Its possible that some of my class members will not be initialized when one of my virtual members gets called even before the constructor. How can I avoid this?
18.23 In a Hashtable, why doesn't setting the value for an existing key to be null remove the key from the Hashtable?
18.24 How do I create windows shortcuts on my desktop programatically in .Net?
18.25 How can I add a custom verb to the file and folder context menus in the explorer shell?
18.26 Can working on WinForms and .Net in general get exciting?
18.27 I have a long loop. How can I make my application continue to process events while it is executing this loop?
18.28 How can I display HTML in a Form?
18.29 The MessageBox always appears in the center of the screen. How can I change it's location?
18.30 If I have a button with &Next as the text, the N-accelerator key does not appear until I press Alt. Why?
18.31 How can I shut down/restart the OS from my Windows Forms Application?
18.32 I get a message 'DragDrop registration' failed. Why?
18.33 What is the purpose of the [STA Thread] attribute for the Main method of a C# program?
18.34 I add my application to the Window's Tray, set ShowInTaskBar to false, but the program still appears in the Alt+Tab list.

19. Windows Forms Common Dialogs

19.1 How do I use the ColorDialog to pick a color?
19.2 How do I use the FontDialog class to set a control's font?
19.3 How do I implement a Folder Browser class?
19.4 How can I get just the name of a file from the complete path string?
19.5 How can I get just the extension of a file from the complete path string?
19.6 How do I use the OpenFileDialog?
19.7 How do I specify the path for the FolderBrowser instance when it opens the first time?

20. Windows Forms ListBox

20.1 How do I add and delete items from a ListBox?
20.2 How do I implement Drag and Drop support between ListBoxes?
20.3 How can I drag file names from Windows Explorer and drop them into a listbox?
20.4 How do I implement an ownerdrawn listbox?
20.5 How can I set the width of a listbox to fit the text?

21. Windows Forms ComboBox

21.1 How do I bind the values of an enum to a ComboBox?
21.2 How can I programmatically prevent the combobox from dropping?

Copyright Northwind Inc. 2001 - 2017

21.3 How can I turn off editing in the textbox portion of a ComboBox, restricting the user to selecting only those options in the drop list?
21.4 How can I adjust the height of the of my ComboBox dropdown?
21.5 How do I implement an owner drawn combobox?
21.6 How do I add a ComboBox button to a toolbar?
21.7 How do I set the width of a combobox to fit the entries in its list?
21.8 How can I programmatically create a new list for my ComboBox dropdown?

22. Windows Forms RichTextBox

22.1 How can I create and save a RTF file?
22.2 How can I get a string that contains RTF format codes into a RichTextBox?
22.3 How do I make the RichTextBox support drag and drop?
22.4 How do I set the color and font in a RichEditBox?
22.5 How can I change the FontStyle of a selection without losing the styles that are present?
22.6 How can I programmatically position the cursor on a given line and character of my richtextbox?
22.7 How can I load an embedded rich text file into a richtextbox?
22.8 How can I print my rich text?
22.9 Where can I find more information on the RTF specification?
22.10 How can I add a hyperlink to a RichTextBox control?

23. Windows Forms ListView

23.1 How do I add SubItems to a ListView control?
23.2 When I call ListViewItem.Selected = true;, why doesn't the item get selected?
23.3 How do I unselect the selected items in a ListView programatically?
23.4 I am trying to programmatically change the ForeColor and BackColor properties of subitems in a listview. Why doesn't this work?
23.5 How do I implement custom column sorting in a listview?
23.6 How do I programmatically select an item in my listview?
23.7 How can I sort a column in a ListView?
23.8 How can I implement an owner drawn listview?
23.9 How can I tell which column (subitem) has been clicked on in my listview?

Copyright Northwind Inc. 2001 - 2017