



# Create A Simple Graphical C# Application

Visual Programming-CS411

# Create A Simple Graphical C# App

- Visual Studio 2012 provides you with two views of a graphical application: the *design view* and the *code view*.
- You use the Code and Text Editor window to modify and maintain the code and program logic for a graphical application.
- You use the Design View window to lay out your user interface.
- You can switch between the two views whenever you want.

# Create A Simple Graphical C# App

- Visual Studio 2012 provides two templates for building graphical applications:
  - Windows Forms Application template
  - WPF Application template
- Windows Forms is a technology that first appeared with the .NET Framework version 1.0.
- WPF, or Windows Presentation Foundation, is an enhanced technology that first appeared with the .NET Framework version 3.0. It provides many additional features and capabilities over Windows Forms,

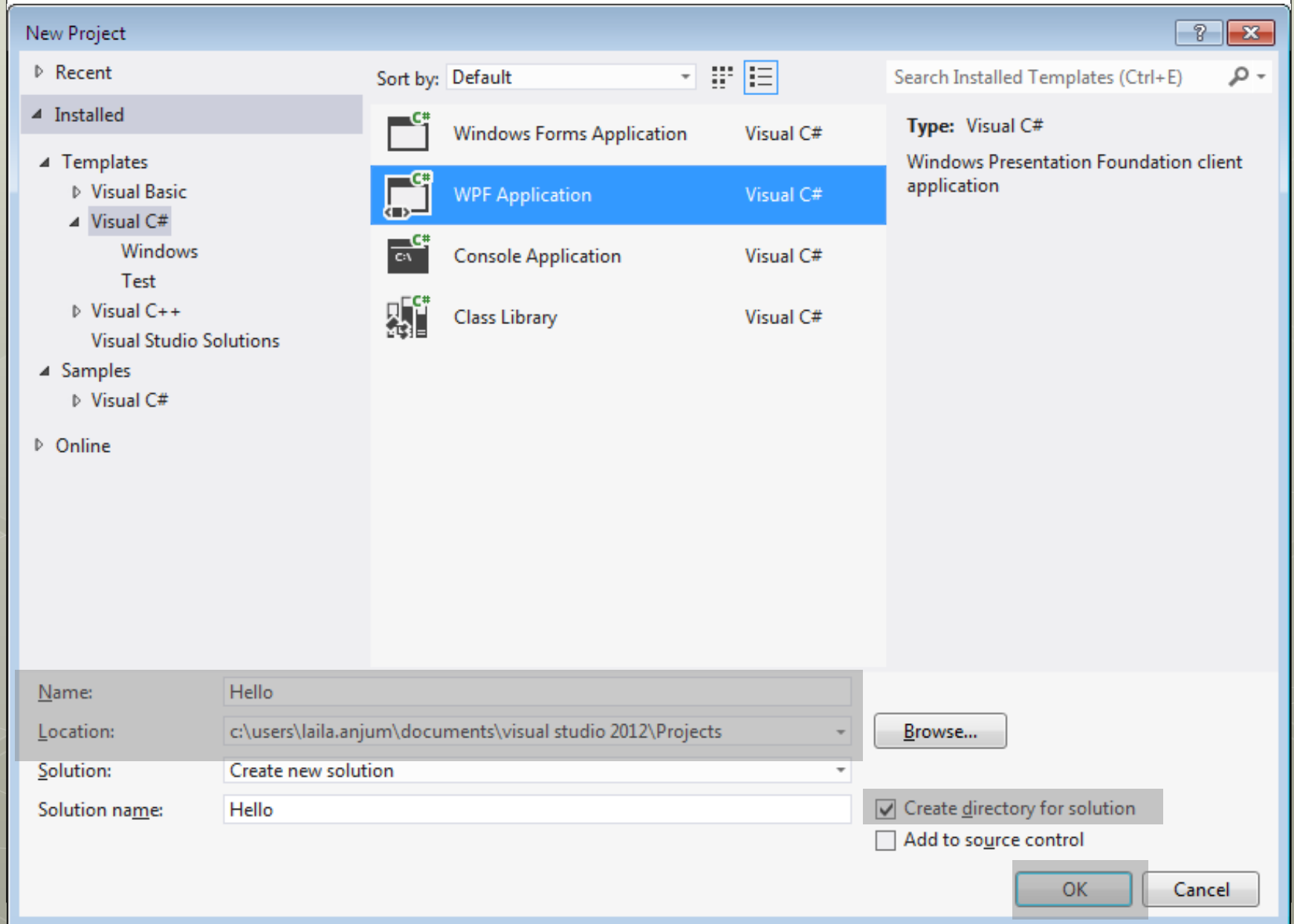
# Create A Simple Graphical C# App

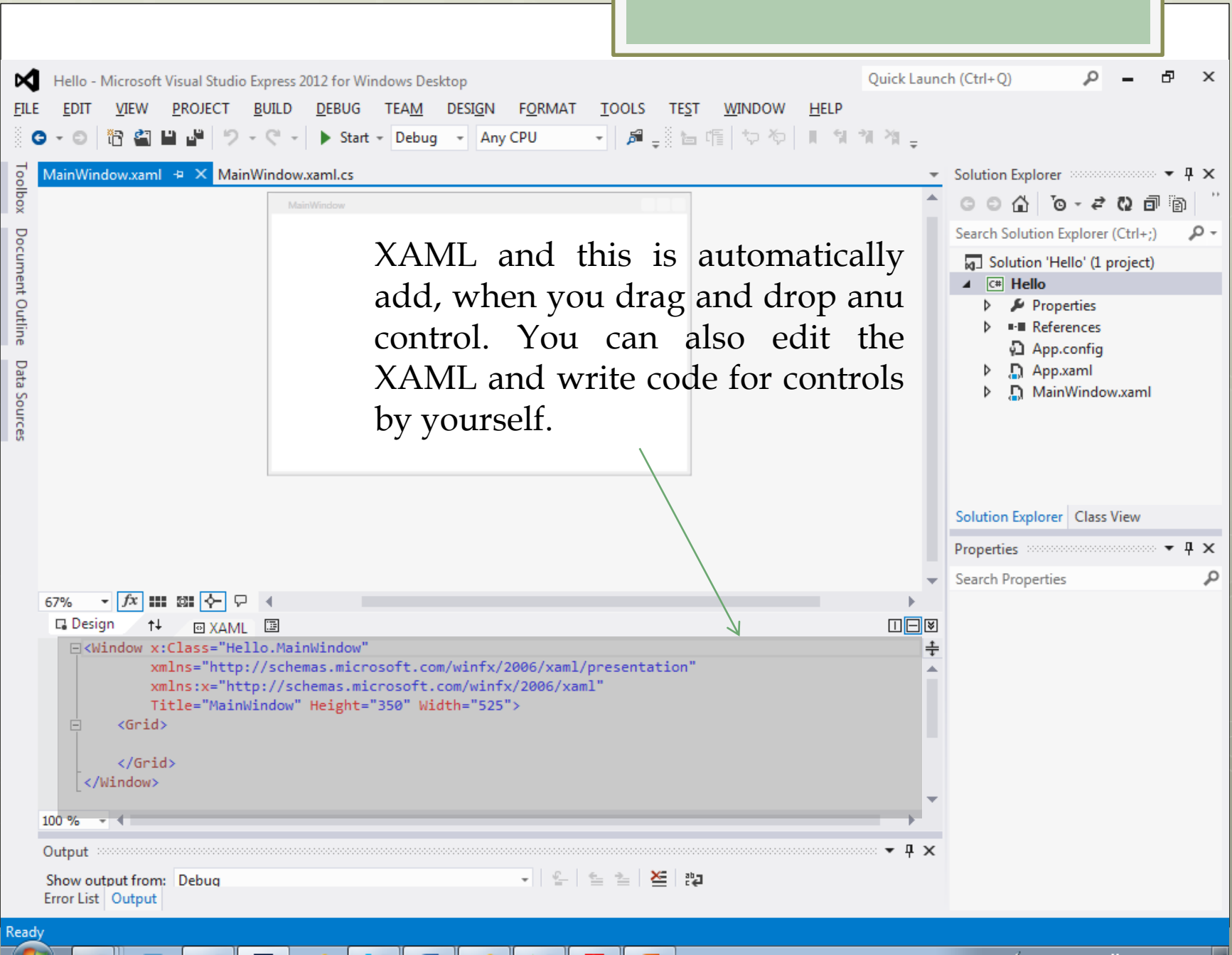
- In the following set of exercises, you'll learn how to create a graphical application using Visual Studio 2012.
- The program will display a simple form containing a text box where you can enter your name and a button that when clicked displays a personalized greeting.

FILE → New Project

The screenshot shows the Microsoft Visual Studio Express 2012 for Windows Desktop interface. The 'FILE' menu is open, displaying various options such as 'New Project...', 'New Team Project...', 'New File...', 'Open Project...', 'Open File...', 'Close', 'Close Solution', 'Save Selected Items', 'Save Selected Items As...', 'Save All', 'Export Template...', 'Source Control', 'Page Setup...', 'Print...', 'Recent Files', 'Recent Projects and Solutions', and 'Exit'. The 'New Project...' option is highlighted. The main workspace displays a 'Welcome' page with sections for 'GET STARTED' and 'LATEST NEWS'. The 'GET STARTED' section includes a 'Welcome' message and a 'Getting started with Windows Desktop Applications' section with links to learn more about building Win32 / Visual C++ applications and WPF applications. The 'LATEST NEWS' section includes a 'What's New in Windows Desktop Development' section with links to learn more about Visual C#, Visual Basic, Visual C++, Windows Presentation Foundation (WPF), and Windows Forms. The Solution Explorer on the right shows a project named 'ConsoleApplication3' and a sub-project named 'WindowsFormsApplication1'. The Output window at the bottom shows 'Show output from:' and the status bar indicates 'Ready'.

Visual C# → WPF App





# Click The Toolbox Tab

The screenshot displays the Microsoft Visual Studio Express 2012 for Windows Desktop interface. The main window title is "Hello - Microsoft Visual Studio Express 2012 for Windows Desktop". The menu bar includes FILE, EDIT, VIEW, PROJECT, BUILD, DEBUG, TEAM, DESIGN, FORMAT, TOOLS, TEST, WINDOW, and HELP. The toolbar shows icons for undo, redo, start, debug, and any CPU. The left sidebar has tabs for Toolbox, Document Outline, and Data Sources. The Toolbox tab is active, showing a search box and a list of controls: Common WPF Controls, All WPF Controls, and General. The Solution Explorer on the right shows a project named "Hello" with files: Properties, References, App.config, App.xaml, and MainWindow.xaml. The Properties window at the bottom right shows the "Misc" section with the following details:

Hello Solution Properties	
(Name)	Hello
Active config	Debug Any CPU
Description	
Path	c:\Users\laila.anjum\
Startup project	Hello

The status bar at the bottom left shows "Ready".



# Expand The Common WPF Controls Section

The screenshot displays the Microsoft Visual Studio Express 2012 for Windows Desktop interface. The main window is titled "Hello - Microsoft Visual Studio Express 2012 for Windows Desktop". The menu bar includes FILE, EDIT, VIEW, PROJECT, BUILD, DEBUG, TEAM, DESIGN, FORMAT, TOOLS, TEST, WINDOW, and HELP. The toolbar shows various icons for file operations and development actions.

The **Toolbox** is visible on the left side, showing the **Common WPF Controls** section expanded. The controls listed are: Pointer, Border, Button, CheckBox, ComboBox, DataGrid, Grid, Image, Label, ListBox, RadioButton, Rectangle, StackPanel, TabControl, TextBlock, and TextBox. The **Border** control is currently selected, and its name "Border" is visible in the tooltip.

The **Solution Explorer** is located on the right side, showing the project structure for "Solution 'Hello' (1 project)". The project "Hello" contains the following files and folders: Properties, References, App.config, App.xaml, and MainWindow.xaml.

The **Class View** is also visible on the right side, showing the **Properties** window for the "Hello" solution. The **Misc** section is expanded, displaying the following information:

(Name)	Hello
Active config	Debug Any CPU
Description	
Path	c:\Users\laila.anjum\
Startup project	Hello

The **Code View** is visible at the bottom, showing the XAML code for the application:

```
<Application xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
             xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
             x:Name="App" Width="525">
```

# Click TextBox

Microsoft Visual Studio Express 2012 for Windows Desktop

Quick Launch (Ctrl+Q)

FILE EDIT VIEW PROJECT BUILD DEBUG TEAM DESIGN FORMAT TOOLS TEST WINDOW HELP

Start Debug Any CPU

Toolbox

Search Toolbox

Common WPF Controls

- Pointer
- Border
- Button
- CheckBox
- ComboBox
- DataGrid
- Grid
- Image
- Label
- ListBox
- RadioButton
- Rectangle
- StackPanel
- TabControl
- TextBlock
- TextBlock

All WPF Controls

General

Solution Explorer

Solution 'Hello' (1 project)

- C# Hello
  - Properties
  - References
  - App.config
  - App.xaml
  - MainWindow.xaml

Solution Explorer Class View

Properties

Hello Solution Properties

Misc

(Name)	Hello
Active config	Debug Any CPU
Description	
Path	c:\Users\laila.anjum\
Startup project	Hello

(Name)  
The name of the solution file.

```
<TextBlock xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
           xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
           Width="525">
```

# Drag The *Textblock* Control Onto The Form

The screenshot displays the Microsoft Visual Studio Express 2012 for Windows Desktop interface. The main window is titled "Hello - Microsoft Visual Studio Express 2012 for Windows Desktop". The menu bar includes FILE, EDIT, VIEW, PROJECT, BUILD, DEBUG, TEAM, DESIGN, FORMAT, TOOLS, TEST, WINDOW, and HELP. The toolbar shows various icons for file operations, debugging, and design. The Solution Explorer on the right shows a project named "Hello" with files: Properties, References, App.config, App.xaml, and MainWindow.xaml. The Properties window on the right shows the selected control is a TextBlock with the name "<No Name>".

The Design view shows a window titled "MainWindow" with a grid layout. A TextBlock control is being positioned on the grid. The dimensions of the TextBlock are 224 (width) and 129 (height). The XAML view shows the following code:

```
xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
Title="MainWindow" Height="350" Width="525">
  <Grid>
    <TextBlock HorizontalAlignment="Left" Margin="224,129,0,0" TextWrapping="Wrap" Text="TextBlo
  </Grid>
</Window>
```

The Output window at the bottom shows "Show output from: Debug" and "Error List Output". The status bar at the bottom indicates "Ready".

# Adjust The Size And Position of Textblock Control Onto The Form

The screenshot displays the Microsoft Visual Studio Express 2012 for Windows Desktop interface. The main window is titled "Hello - Microsoft Visual Studio Express 2012 for Windows Desktop". The menu bar includes FILE, EDIT, VIEW, PROJECT, BUILD, DEBUG, TEAM, DESIGN, FORMAT, TOOLS, TEST, WINDOW, and HELP. The toolbar shows various icons for file operations, debugging, and design. The Solution Explorer on the right shows a project named "Hello" with files: Properties, References, App.config, App.xaml, and MainWindow.xaml. The Class View is also visible. The Properties window is open, showing the properties of a TextBlock control, including Name, Type, Search Properties, Arrange by: Category, Brush, Appearance, Common, Text, Cursor, DataContext, IsEnabled, and ToolTip. The design view shows a TextBlock control on a grid with dimensions 106 and 66. The code view shows the XAML for the TextBlock control.

```
xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
Title="MainWindow" Height="350" Width="525">
<Grid>
<TextBlock HorizontalAlignment="Left" Margin="106,66,0,0" TextWrapping="Wrap" Text="TextBloc
</Grid>
</Window>
```

# Expand the *Text* property & Change the *FontSize* property to 20 px

Visual Studio Express 2012 for Windows Desktop interface showing the design and XAML views of a WPF application.

The design view shows a `TextBlock` control with a margin of `106,66,0,0`.

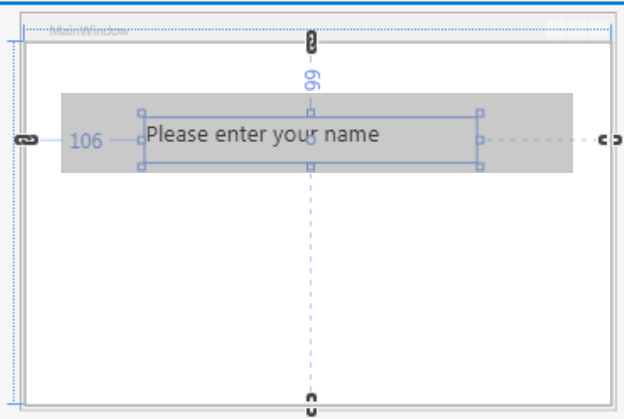
The XAML view shows the following code:

```
xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
Title="MainWindow" Height="350" Width="525">
  <Grid>
    <TextBlock HorizontalAlignment="Left" Margin="106,66,0,0" TextWrapping="Wr
  </Grid>
</Window>
```

The Properties window shows the `TextBlock` control with the `FontSize` property set to `20 px`.

Change the value of the *Text* property to **Please enter your name**

The screenshot displays the Microsoft Visual Studio 2012 interface for a Windows Desktop application named 'Hello'. The main design view shows a `TextBlock` control on the `MainWindow.xaml` canvas, with a value of `106` associated with it. The `Properties` window on the right is active, showing the `Text` property of the `TextBlock` set to `Please enter your name`. The `Solution Explorer` on the right shows the project structure, including `Properties`, `References`, `App.config`, `App.xaml`, and `MainWindow.xaml`. The `Output` window at the bottom shows the XAML code for the `TextBlock` control: `<TextBlock VerticalAlignment="Top" Height="40" Width="106" Text="106" />`. The status bar at the bottom indicates the application is 'Ready'.



Solution Explorer (Ctrl+;)

- Solution 'Hello' (1 project)
  - Hello
    - Properties
    - References
    - App.config
    - App.xaml
    - MainWindow.xaml

Properties

Name: <No Name>

Type: TextBox

Common

Text: Please enter your name

Cursor: [Dropdown]

DataContext: [New]

IsEnabled:

ToolTip: [Text Box]

Layout

```

</2006/xaml/presentation"
xmlns:fx="2006/xaml"
xmlns="http://schemas.microsoft.com/winfx/2006/xaml"
xmlns:local="clr-namespace:Hello"
>
<TextBlock
  Margin="106,66,0,0" TextWrapping="Wrap" Text="Please enter your name" VerticalAlignment="Top"
  >
  </TextBlock>
</2006/xaml/presentation>

```

Output

Show output from: Debug

Error List Output

# Add *TextBox* control , Edit Name and Text property

The screenshot displays the Microsoft Visual Studio 2012 interface for a WPF application named 'Hello'. The main design area shows a window titled 'MainWindow' with the text 'Please enter your name' and a text box below it. The text box is selected, and its properties are shown in the Properties window on the right. The Properties window shows the Name property set to 'userName' and the Text property set to an empty string. The XAML code in the bottom pane is as follows:

```
<?xml version="1.0" encoding="utf-8" ?>
<xaml xmlns="http://schemas.microsoft.com/winfx/2006/xaml"
      xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
      title="MainWindow" Height="350" Width="525">
  <TextBlock HorizontalAlignment="Left" Margin="106,66,0,0" TextWrapping="Wrap" Text="Please
  <TextBox x:Name="userName" HorizontalAlignment="Left" Height="32" Margin="106,175,0,0" Tex
  </id>
  </>
</xaml>
```

The Properties window on the right shows the following properties for the selected `TextBox`:

- Name: `userName`
- Type: `TextBox`
- Search Properties: `Appearance`, `Common`
- Common properties:
  - SelectionOpacity: `0.4`
  - SpellCheck.IsE...:
  - Text:
  - UndoLimit: `100`
  - Cursor:
  - DataContext:



# Add Button control, Edit Name and Content property

The screenshot displays the Visual Studio IDE with a WPF application named 'Hello'. The main window, titled 'MainWindow.xaml', is shown in Design view. It contains a text box with the text 'Please enter your name' and an 'OK' button. The XAML code for the window is as follows:

```
<Window x:Class="Hello.MainWindow" Title="MainWindow" Height="350" Width="525">
  <Grid>
    <TextBlock HorizontalAlignment="Left" Margin="106,66,0,0" TextWrapping="Wrap" Text="Please enter your name" />
    <TextBox x:Name="userName" HorizontalAlignment="Left" Height="32" Margin="106,175,0,0" />
    <Button x:Name="ok" Content="OK" HorizontalAlignment="Left" Margin="323,175,0,0" VerticalAlignment="Top" />
  </Grid>
</Window>
```

The Properties window on the right shows the selected 'Button' control. The 'Content' property is set to 'OK'. Other properties like 'IsCancel', 'IsDefault', 'Cursor', 'DataContext', and 'isEnabled' are also visible.

# Change the *Title* property of the title bar of the form

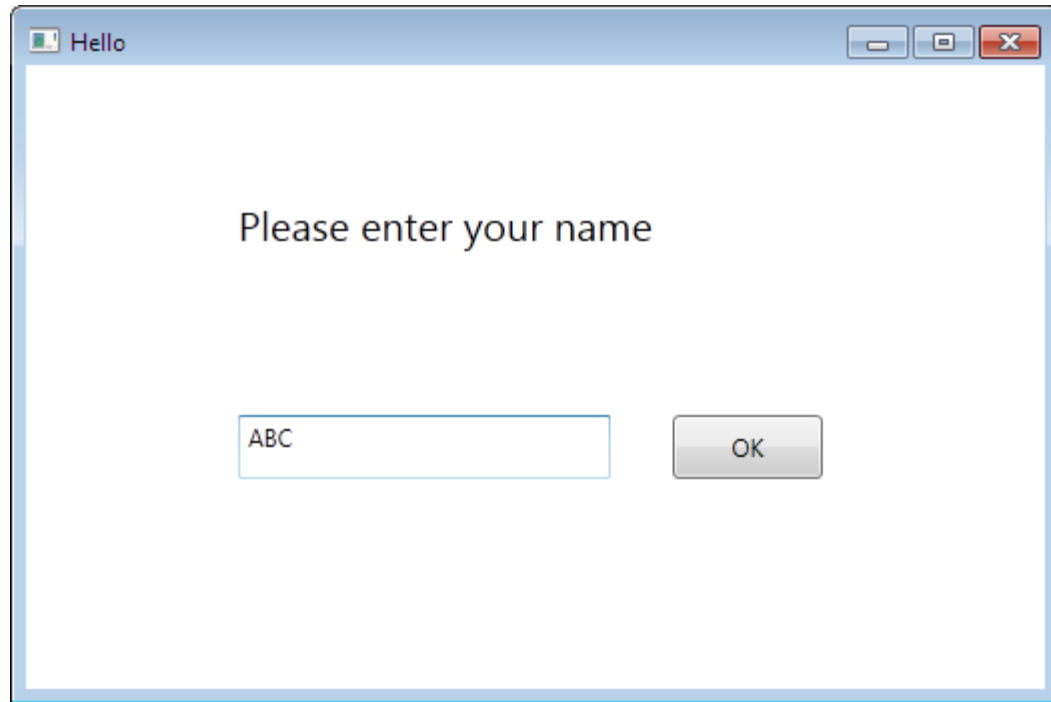
The screenshot shows the Microsoft Visual Studio Express 2012 for Windows Desktop interface. The main window is in Design view, displaying a form with a title bar that says "Hello". The form contains a text box and an "OK" button. The XAML code is visible at the bottom, and the Properties window on the right shows the "Title" property set to "Hello".

```
<Window x:Class="Hello.MainWindow"
        xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
        Title="Hello" Height="350" Width="525">
    <Grid>
        <TextBlock HorizontalAlignment="Left" Margin="106,66,0,0" TextWrapping="Wrap" Text=
        <TextBox x:Name="userName" HorizontalAlignment="Left" Height="32" Margin="106,175,
        <Button x:Name="ok" Content="OK" HorizontalAlignment="Left" Margin="323,175,0,0" V
```

Properties window:

- Name: <No Name>
- Type: Window
- Search Properties: Arrange by: Category
- Icon: [Dropdown]
- ResizeMode: CanResize
- ShowInTaskbar: [Checked]
- SizeToContent: Manual
- Title: Hello
- Topmost: [Unchecked]
- WindowStartu...: Manual
- WindowState: Normal

# Output



# Add Event to OK button

Hello - Microsoft Visual Studio Express 2012 for Windows Desktop

Quick Launch (Ctrl+Q)

FILE EDIT VIEW PROJECT BUILD DEBUG TEAM DESIGN FORMAT TOOLS TEST WINDOW HELP

MainWindow.xaml MainWindow.xaml.cs

Please enter your name

323 175

67%

Design XAML

```
Title="Hello" Height="350" Width="525">
<Grid>
  <TextBlock HorizontalAlignment="Left" Margin="106,66,0,0" TextWrapping="Wrap" Text
  <TextBox x:Name="userName" HorizontalAlignment="Left" Height="32" Margin="106,175,
  <Button x:Name="ok" Content="OK" HorizontalAlignment="Left" Margin="323,175,0,0" V
</Grid>
</Window>
```

100%

Output

Show output from: Debug

Error List Output

Solution Explorer

Solution 'Hello' (1 project)

- Properties
- References
- App.config
- App.xaml
- MainWindow.xaml

Solution Explorer Class View

Properties

Name ok

Type Button

Event	Handler
Click	okClick
ContextMenuClosi...	
ContextMenuOpe...	
DataContextChang...	
DragEnter	
DragLeave	
DragOver	
Drop	
FocusableChanged	
GiveFeedback	

Item(s) Saved

```
namespace Hello
{
    /// <summary>
    /// Interaction logic for MainWindow.xaml
    /// </summary>
    public partial class MainWindow : Window
    {
        public MainWindow()
        {
            InitializeComponent();
        }

        private void okClick(object sender, RoutedEventArgs e)
        {
            MessageBox.Show("Hello " + userName.Text);
        }
    }
}
```

Solution 'Hello' (1 project)

- Hello
  - Properties
  - References
  - App.config
  - App.xaml
  - MainWindow.xaml



MainWindow.xaml MainWindow.xaml.cs\*

Please enter your name

175

323

Design XAML

Solution Explorer

Search Solution Explorer (Ctrl+;)

- Solution 'Hello' (1 project)
  - Hello
    - Properties
    - References
    - App.config
    - App.xaml
    - MainWindow.xaml

Solution Explorer Class View

Properties

Name ok

Type Button

Click	okClick
ContextMenuClosi...	
ContextMenuOpe...	
DataContextChang...	
DragEnter	
DragLeave	
DragOver	
Drop	
FocusableChanged	
GiveFeedback	

```
100 %
```

```
<Text Text="Please enter your name" VerticalAlignment="Top" Height="40" Width="292" FontSize="20"/>  
0" TextWrapping="Wrap" VerticalAlignment="Top" Width="186"/>  
ticalAlignment="Top" Width="75" Height="32" Click="okClick"/>
```

Output

Show output from: Debug

Error List Output

