WORKING WITH WINDOW FORM

Interface

- User interacts with application using well-defined user interface.
- Two types of interface:
  - CUI (Character User Interface)
    - Commands for user interaction
    - Not much user friendly
    - E.g. Console Application
  - GUI (Graphical User Interface)
    - No need to remember commands
    - Very easy to use & user friendly
    - E.g. Windows Application

Windows Form

- Accept input from user & display information.
- Develop desktop based application.
- Provides full support of database connectivity & image formats.
- System.Windows.Forms namespace support Form Class.
- Title Bar, Menu Bar & Control Box are at top of form.
- Main area is called Client Area, surrounded by border.
- Form associated controls enriched with predefined Properties, Methods & Events.

Windows Form

- Properties
  - Define characteristics of controls like color, size, border etc.
- Methods
  - Methods are defined by the action that an object can perform.
- Events
  - These are actions that can be recognized by the objects.
  - Event occur when the user, OS or application interact with objects of program.
  - They control the appearance & behavior of a form either at design time or run time.

Windows Form: Properties & Methods

- Backcolor
- BackgroundImage
- FormBorderStyle
  - None
  - Fixed Single
  - Sizeable
  - Fixed Dialog
  - Fixed 3D
  - Fixed Tool Window
  - Sizeable Tool Window
- MaximizeBox

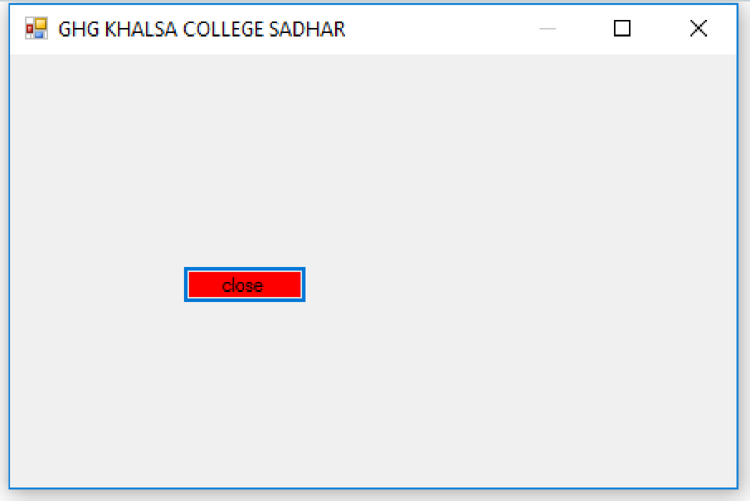
Windows Form: Properties & Methods

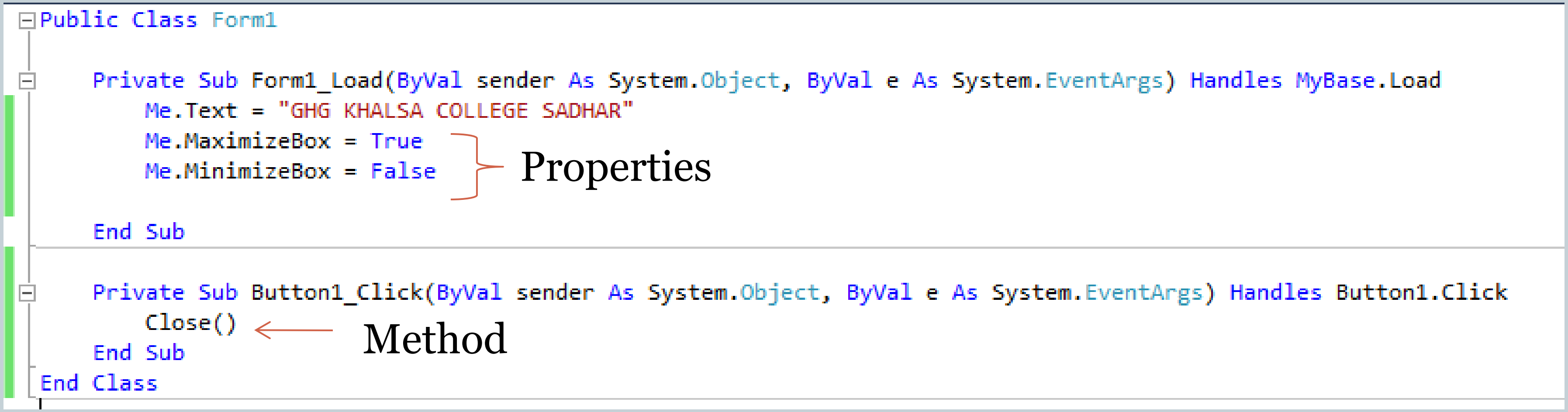
- MaximizeBox
- MinimizeBox
- Text
- WindowState
- StartPosition
  - CenterParent
  - Manual
  - CenterScreen
- WindowDefaultBounds
- WindowDefaultLocation

Windows Form: Properties & Methods

- Activate()
- Close()
- Show()
- Refresh()
- Hide()
- Dispose()

Windows Form : Example

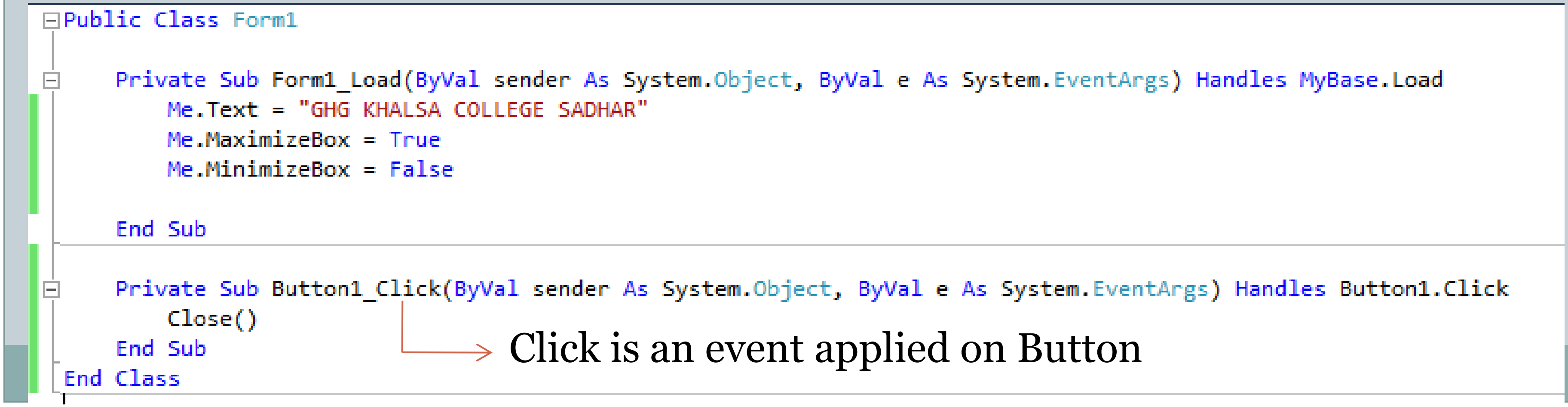




```
Public Class Form1

    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
        Me.Text = "GHG KHALSA COLLEGE SADHAR"
        Me.MaximizeBox = True
        Me.MinimizeBox = False

    End Sub

    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
        Close()
    End Sub
End Class
```

Windows Form: Events

- Activated
- Deactivate
- Click
- Load
- Closing
- Closed



```
Public Class Form1

    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
        Me.Text = "GHG KHALSA COLLEGE SADHAR"
        Me.MaximizeBox = True
        Me.MinimizeBox = False

    End Sub

    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
        Close()
    End Sub
End Class
```

Click is an event applied on Button

CONTROLS

Controls

- Major controls are:
  - Label
  - LinkLabel
  - TextBox
  - Button
  - CheckBox
  - ListBox
  - RadioButton
  - ComboBox
  - GroupBox
  - HscrollBar
  - VscrollBar
  - PictureBox
  - Timer
  - ListView
  - TreeView
  - Panel
  - ToolBar
  - StatusBar

Controls : Properties & Methods

Properties

- BackColor
- ForeColor
- Size
- Enable
- Locked
- Visible
- Location
- Font
- MaximumSize
- MinimumSize

Methods

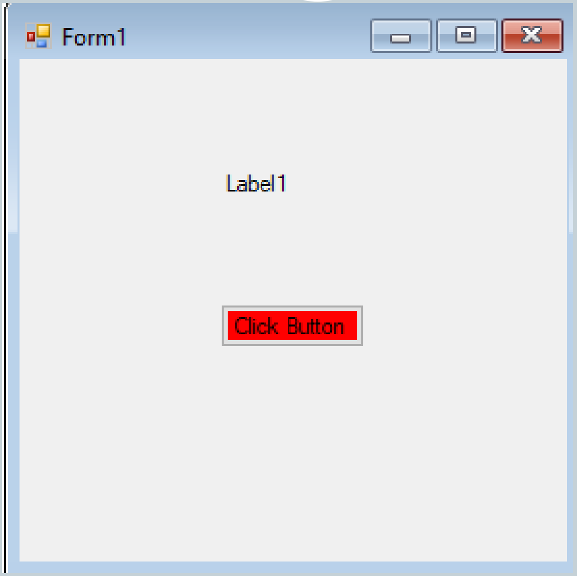
- Hide()
- Show()
- Select()
- Refresh()

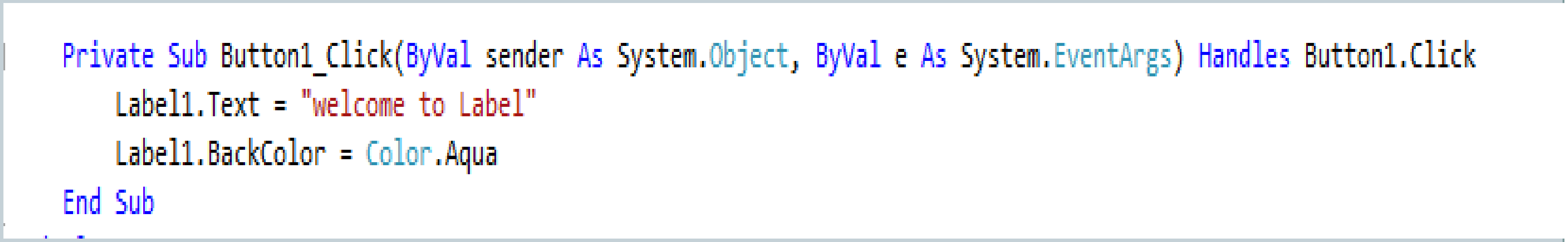
Label

Label

- Graphic control used to display text.
- User can’t edit text directly.
- Text properties can be set at Run Time / Design Time.
- It is in System.Windows.Form.Label class.
- Label can’t receive focus.
- Label Properties are:
  - AutoSize
  - BorderStyle
  - Enabled
  - Text Align
  - Text
  - BackColor
  - ForeColor
  - Visible

Label : Example





```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
    Label1.Text = "welcome to Label"
    Label1.BackColor = Color.Aqua
End Sub
```

Textbox

Textbox

- Accept input from user & retrieve data from database.
- Textbox can be Multiline, Editable or ReadOnly.
- It is subclass of System.Windows.Forms.TextBoxBase Class.

Textbox : Properties & Methods

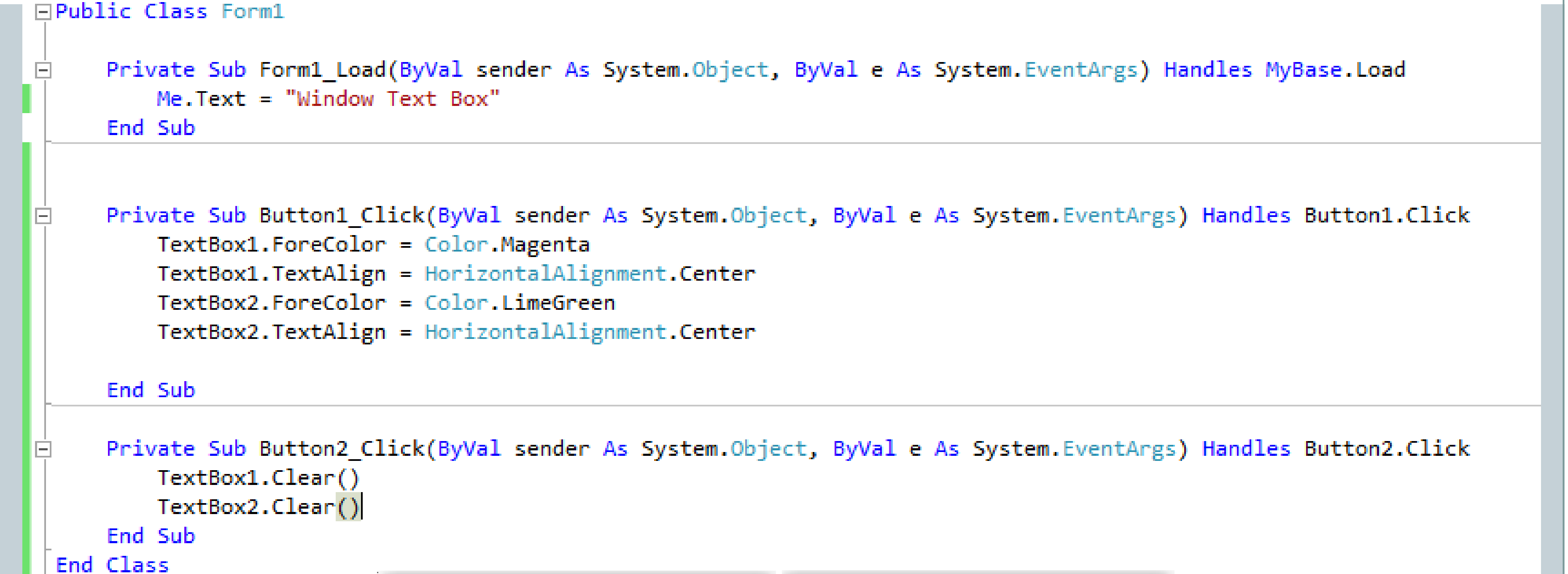
- Textbox Properties
  - Borderstyle
  - MaxLength
  - PasswordChar
  - ReadOnly
  - MultiLine
  - ScrollBars
  - SelectedText
  - TextAlign
  - WordWrap
  - AppendText

Methods

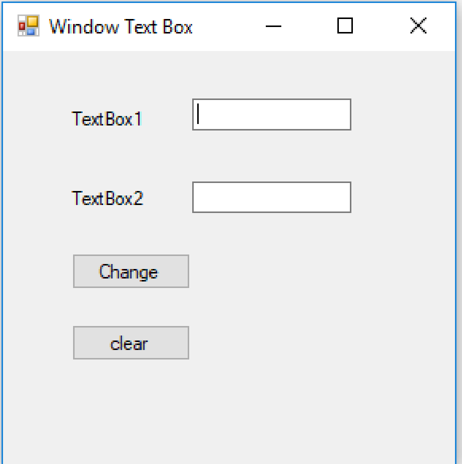
- Text
- Clear
- Select
- SelectAll
- Show
- Cut
- Copy
- Paste

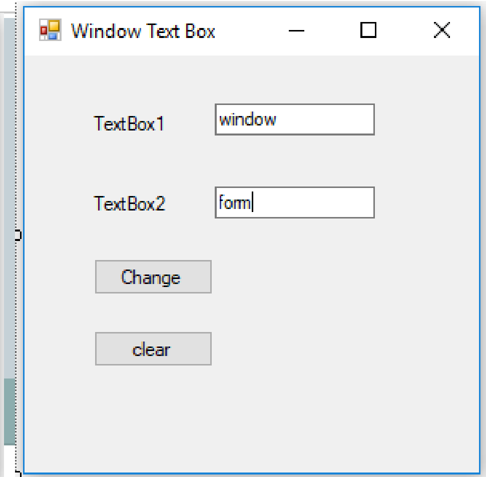
- Textbox Events:
  - GotFocus
  - LostFocus
  - Click
  - TextChanged
  - KeyPress

Window Text Box



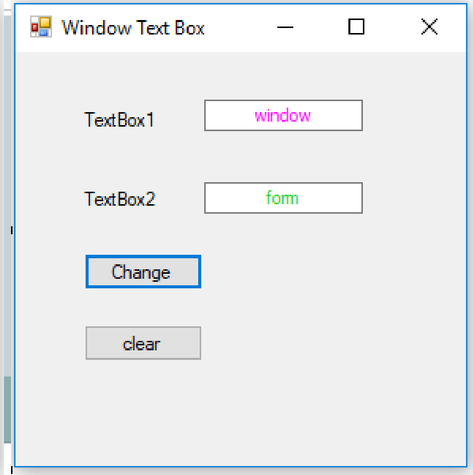
```
Public Class Form1

    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
        Me.Text = "Window Text Box"
    End Sub


    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
        TextBox1.ForeColor = Color.Magenta
        TextBox1.TextAlign = HorizontalAlignment.Center
        TextBox2.ForeColor = Color.LimeGreen
        TextBox2.TextAlign = HorizontalAlignment.Center

    End Sub

    Private Sub Button2_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button2.Click
        TextBox1.Clear()
        TextBox2.Clear()
    End Sub
End Class
```





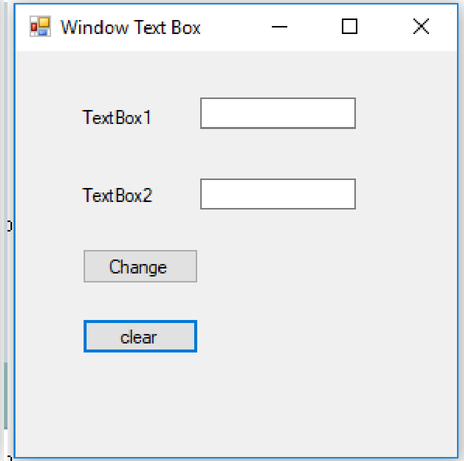
TextBox1: window

TextBox2: form



TextBox1: window

TextBox2: form



Button

Button

- Buttons are the controls which are used for click even.
- Button Properties:
  - Text
  - BackgroundImage
  - ImageAlign
  - TextAlign
  - Font
  - Size
  - BackColor
  - ForeColor
  - Visible
- Button Event:
  - Click
  - MouseHover
  - MouseLeave

Radio Button & Check Box

Radio button

- Radio button is used to select any one option at time.
- These buttons are working in a group.
- GroupBox control is used to group the related controls together.
- If we select a radio button from the group, the other buttons can’t be select from the same group.

RadioButton : Properties & Event

- RadioButton Properties:
  - Text
  - AutoCheck
  - Visible
  - Font
  - Size
  - Checked
  - BackColor
- RadioButton Event:
  - Click
  - CheckedChanged
  - MouseClick
  - GotFocus
  - MouseHover

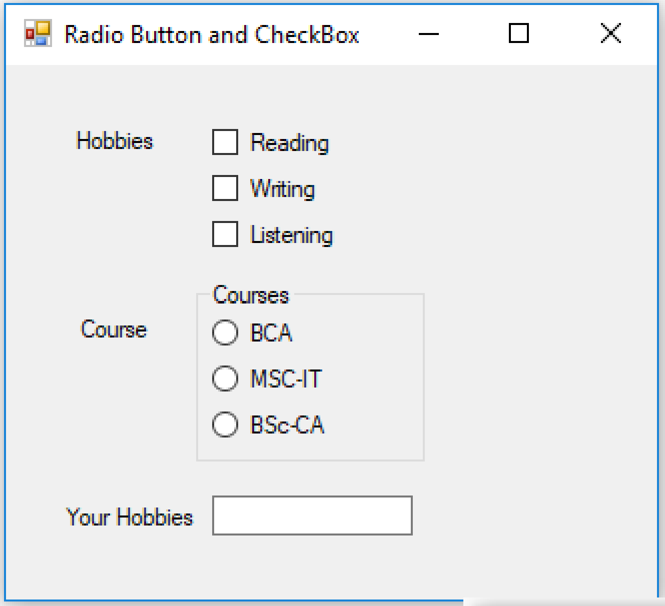
CheckBox

- Checkbox is used to set yes/no or true/false options.
- User can select multiple option at a time.
- When we select a checkbox, a right mark appears in it, indicating that the box is selected.
- The image and text both can be displayed in the CheckBox control.

CheckBox : Properties & Event

- CheckBox Properties:
  - Text
  - AutoCheck
  - Checked
  - Visible
  - Enabled
  - BackColor
  - Font
  - ForeColor
  - TextAlign
- CheckBox Event:
  - CheckedChanged
  - MouseClick
  - GotFocus
  - MouseHover
  - Click

Example:-

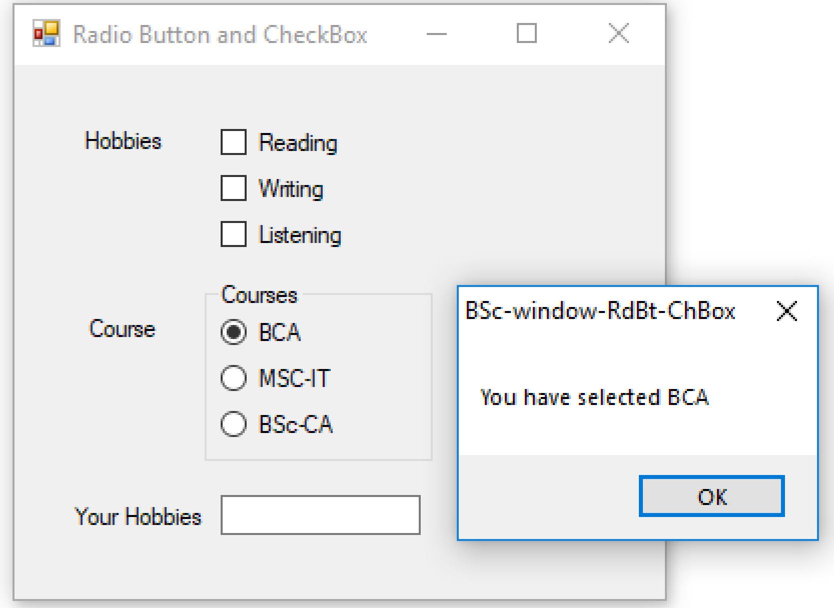


Radio Button and CheckBox

Hobbies
☐ Reading
☐ Writing
☐ Listening

Course
Courses
○ BCA
○ MSC-IT
○ BSc-CA

Your Hobbies



Radio Button and CheckBox

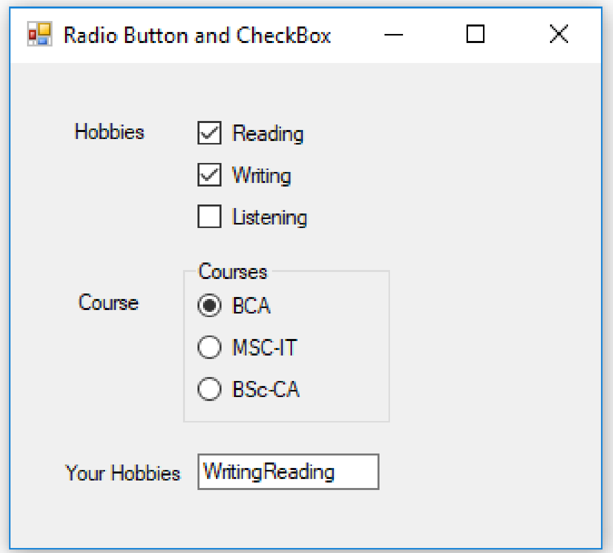
Hobbies
☐ Reading
☐ Writing
☐ Listening

Course
Courses
● BCA
○ MSC-IT
○ BSc-CA

Your Hobbies

BSc-window-RdBt-ChBox

You have selected BCA

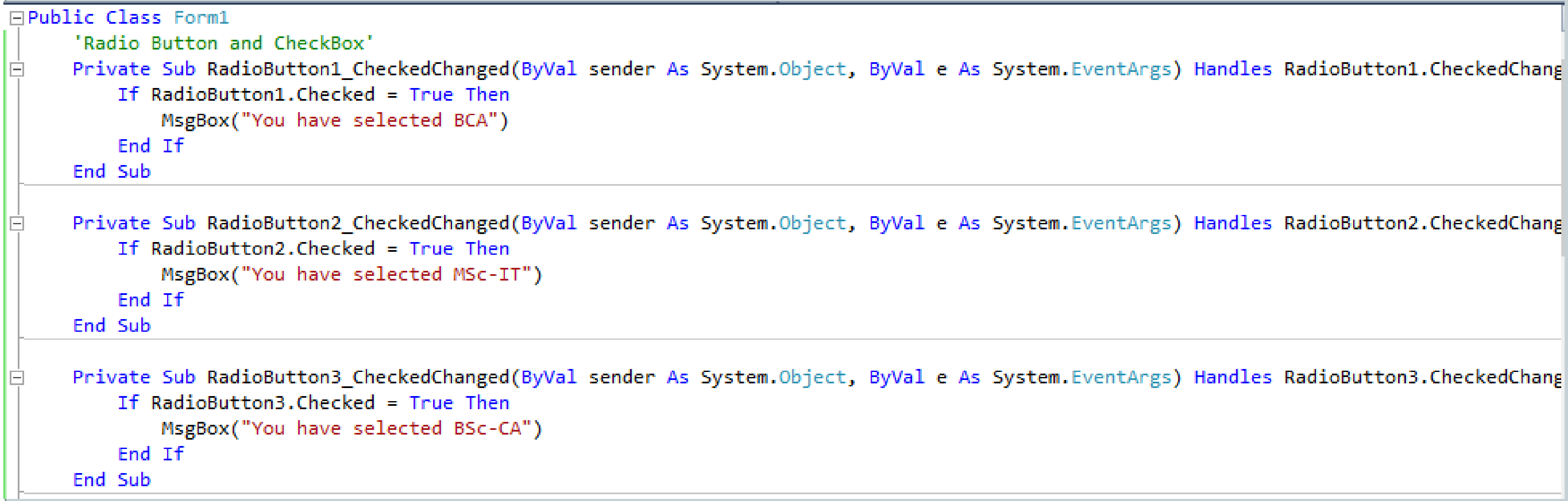


Radio Button and CheckBox

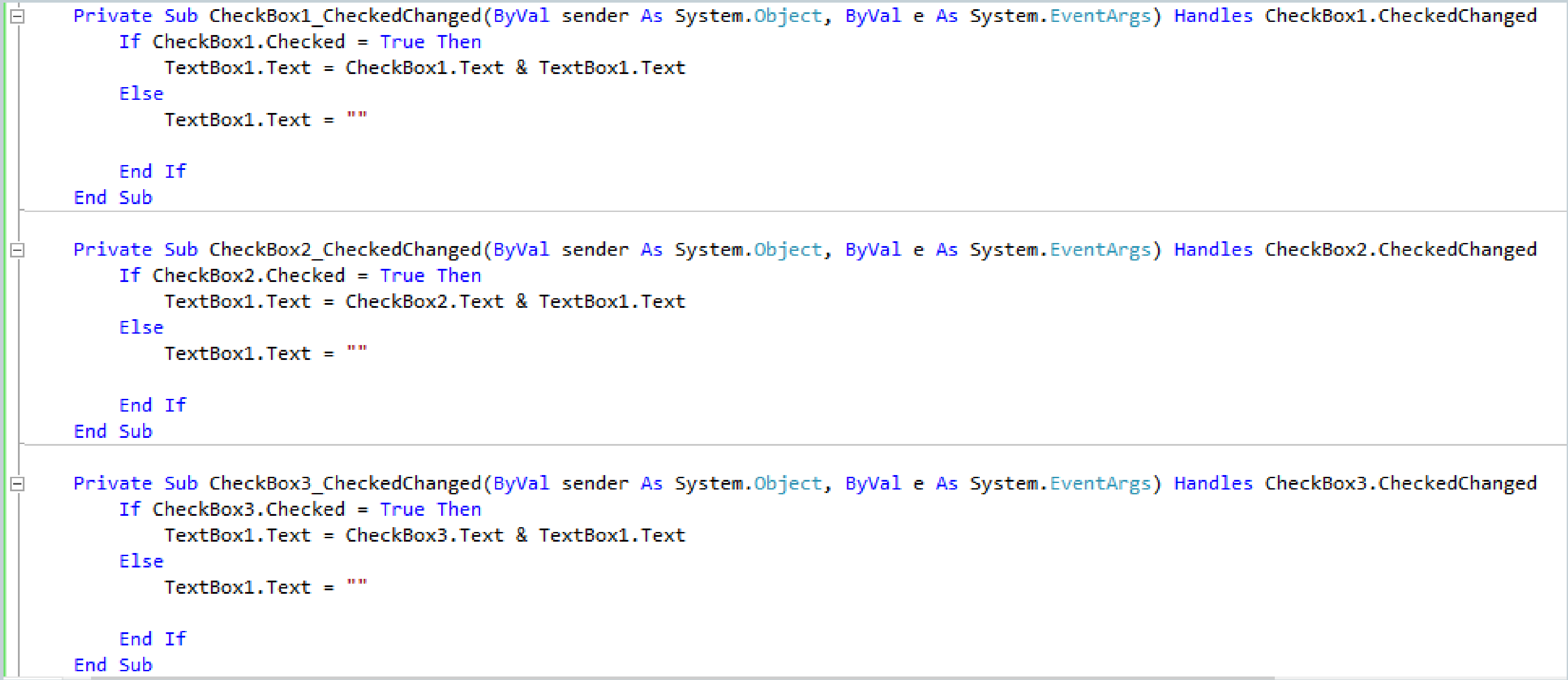
Hobbies
☑ Reading
☑ Writing
☐ Listening

Course
Courses
● BCA
○ MSC-IT
○ BSc-CA

Your Hobbies: WritingReading



```
Public Class Form1
    'Radio Button and CheckBox'
    Private Sub RadioButton1_CheckedChanged(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles RadioButton1.CheckedChang
        If RadioButton1.Checked = True Then
            MsgBox("You have selected BCA")
        End If
    End Sub

    Private Sub RadioButton2_CheckedChanged(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles RadioButton2.CheckedChang
        If RadioButton2.Checked = True Then
            MsgBox("You have selected MSc-IT")
        End If
    End Sub

    Private Sub RadioButton3_CheckedChanged(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles RadioButton3.CheckedChang
        If RadioButton3.Checked = True Then
            MsgBox("You have selected BSc-CA")
        End If
    End Sub
```



```
Private Sub CheckBox1_CheckedChanged(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles CheckBox1.CheckedChanged
    If CheckBox1.Checked = True Then
        TextBox1.Text = CheckBox1.Text & TextBox1.Text
    Else
        TextBox1.Text = ""

    End If
End Sub

Private Sub CheckBox2_CheckedChanged(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles CheckBox2.CheckedChanged
    If CheckBox2.Checked = True Then
        TextBox1.Text = CheckBox2.Text & TextBox1.Text
    Else
        TextBox1.Text = ""

    End If
End Sub

Private Sub CheckBox3_CheckedChanged(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles CheckBox3.CheckedChanged
    If CheckBox3.Checked = True Then
        TextBox1.Text = CheckBox3.Text & TextBox1.Text
    Else
        TextBox1.Text = ""

    End If
End Sub
```

List Box & Combo Box

ListBox

- Display list of items to user.
- User can select one or more items from list box.
- Scroll bar appears automatically if the list has too many items.
- User can add items to control using Design Time or Run Time.

ListBox : Properties & Events

- ListBox Properties:
  - SelectionMode
  - Sorted
  - SelectedIndex
  - SelectedItem
  - MultiColumn
  - Items
  - Add
- ListBox Event:
  - SelectedIndexChanged
  - SelectedValueChanged
  - Click
  - MouseClick
  - MouseHover
  - MouseLeave

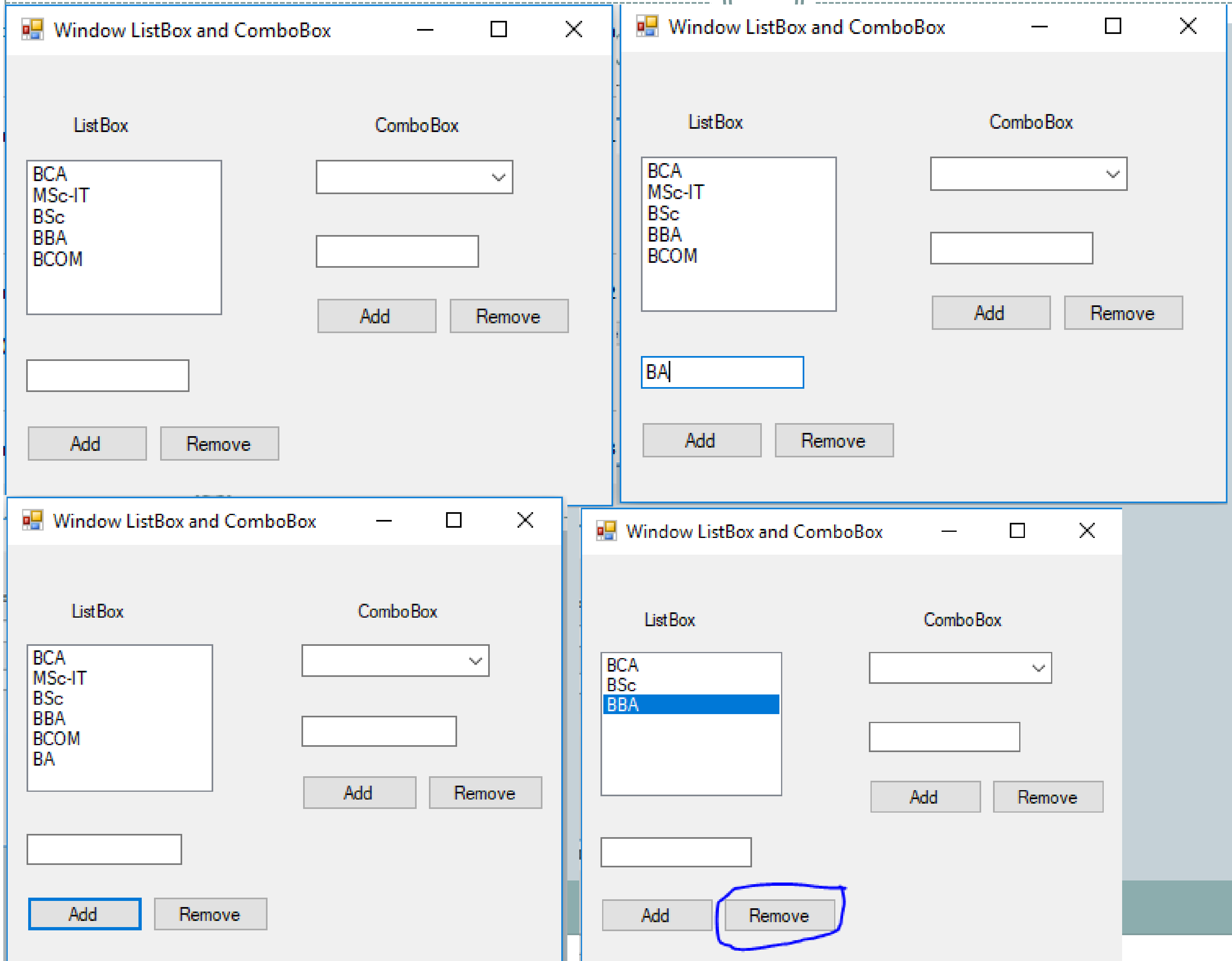
ComboBox

- It is used to display a drop down list of items.
- It is combination of a textbox in which user enters an item & drop down list from which user selects an item.

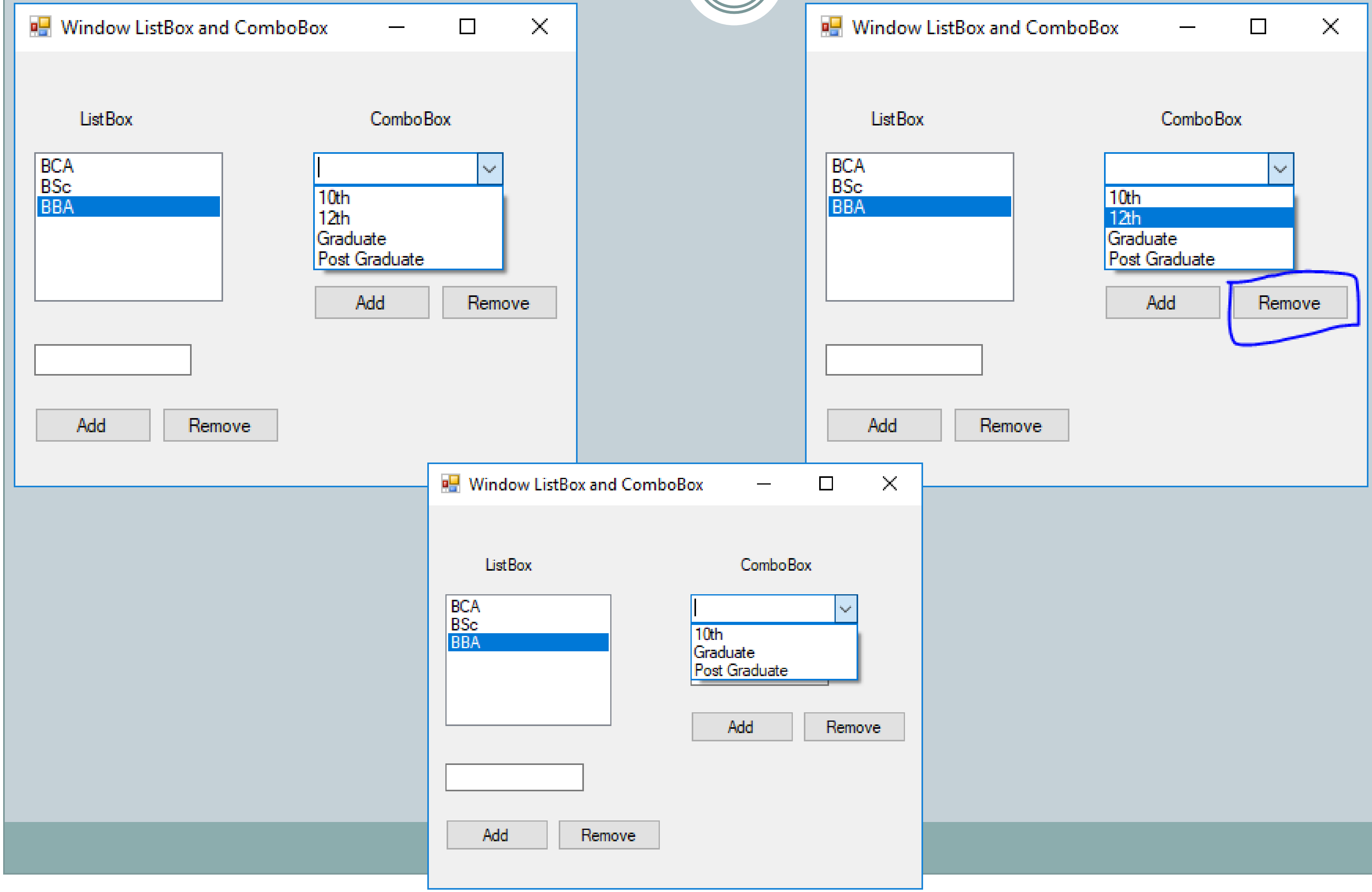
ComboBox : Properties & Events

- ComboBox Properties:
  - Sorted
  - MaxLength
  - SelectedIndex
  - SelectedItem
  - Items
  - Text
  - Add
- ComboBox Event:
  - SelectedIndexChanged
  - Click
  - MouseClick
  - MouseHover
  - MouseLeave

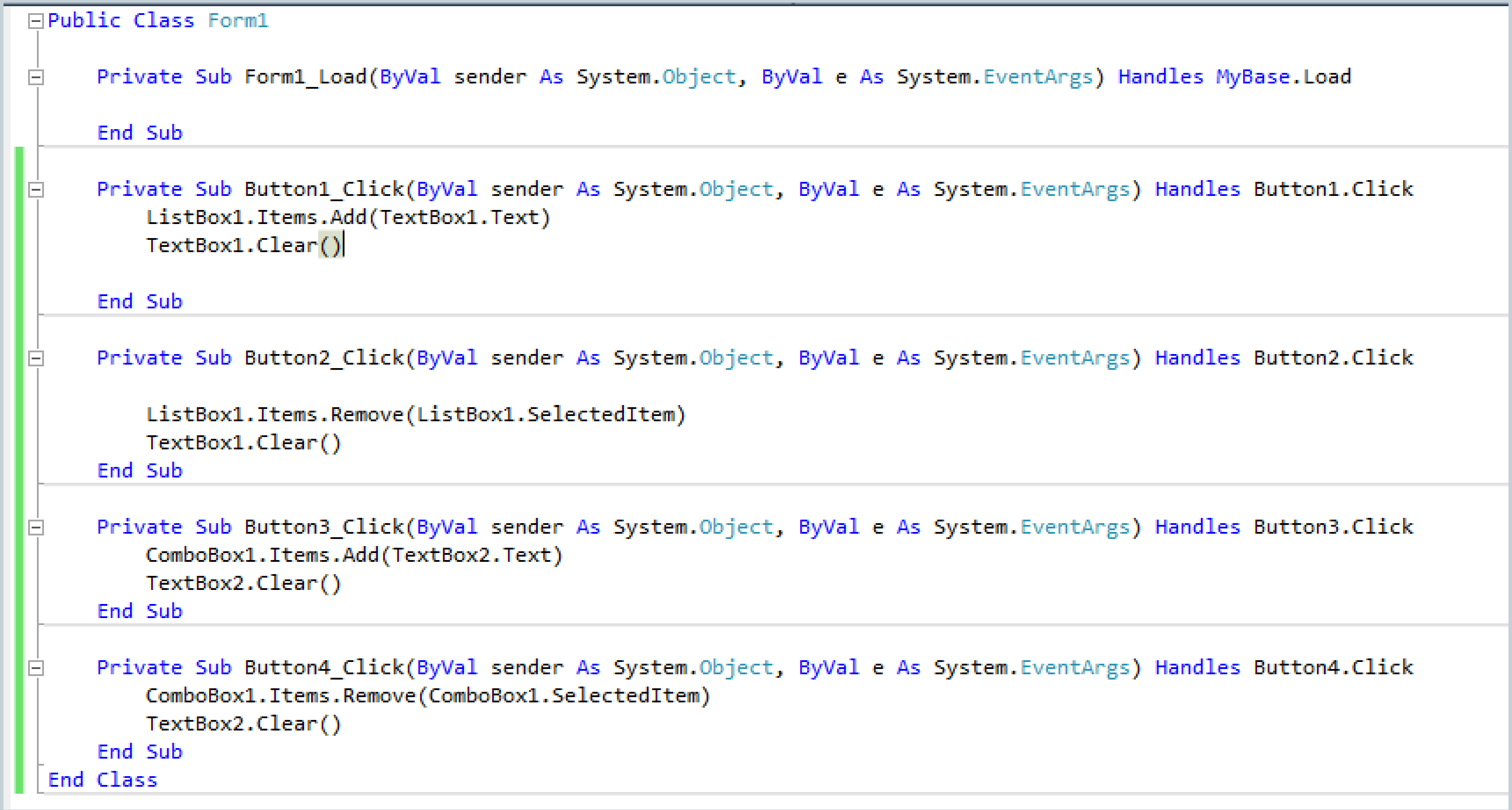
Example:-ListBox



ComboBox


Window ListBox and ComboBox
ListBox
ComboBox
BCA
BSc
BBA
10th
12th
Graduate
Post Graduate
Add
Remove
Add
Remove
Window ListBox and ComboBox
ListBox
ComboBox
BCA
BSc
BBA
10th
12th
Graduate
Post Graduate
Add
Remove
Add
Remove
Window ListBox and ComboBox
ListBox
ComboBox
BCA
BSc
BBA
10th
Graduate
Post Graduate
Add
Remove
Add
Remove

Example



```
Public Class Form1

    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load

    End Sub

    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
        ListBox1.Items.Add(TextBox1.Text)
        TextBox1.Clear()

    End Sub

    Private Sub Button2_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button2.Click

        ListBox1.Items.Remove(ListBox1.SelectedItem)
        TextBox1.Clear()
    End Sub

    Private Sub Button3_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button3.Click
        ComboBox1.Items.Add(TextBox2.Text)
        TextBox2.Clear()
    End Sub

    Private Sub Button4_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button4.Click
        ComboBox1.Items.Remove(ComboBox1.SelectedItem)
        TextBox2.Clear()
    End Sub
End Class
```

Picture Box & Timer Control

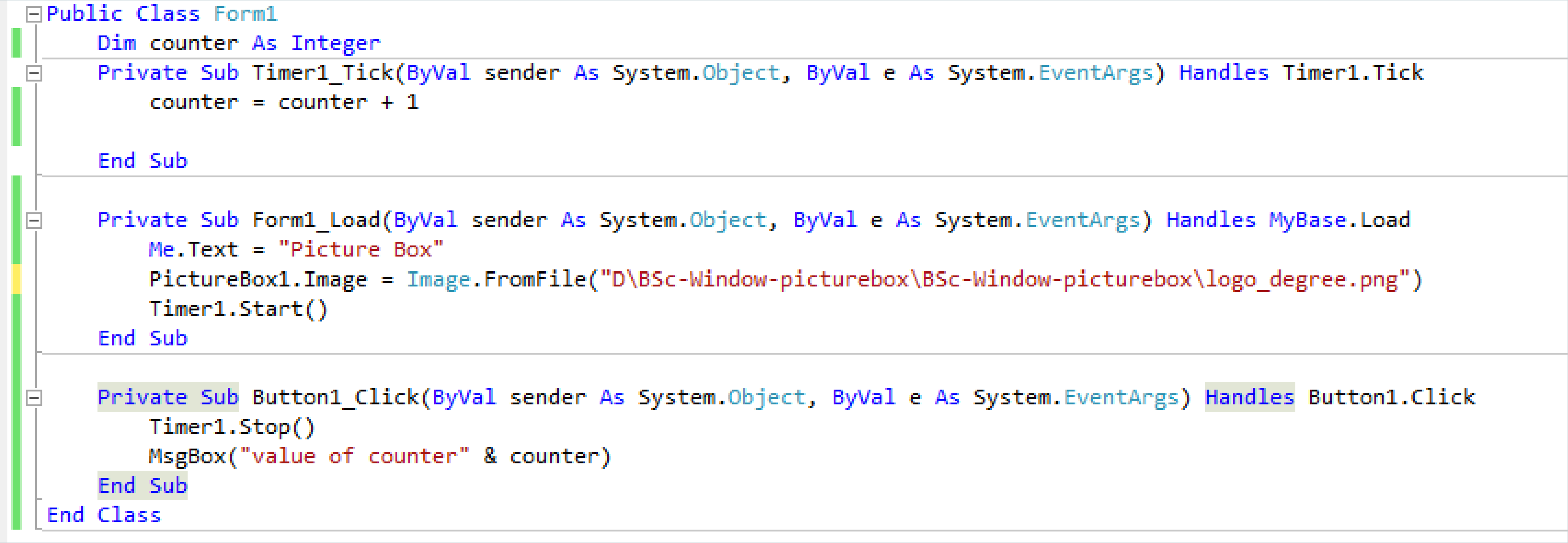
PictureBox

- Used to display images, handling images, editing images.
- Image can be added at Run Time as well as at Design Time.
- PictureBox Properties & Methods:
  - Image
  - BorderStyle
  - SizeMode
  - Load
  - Visible
  - Size
  - Enabled
- PictureBox Event:
  - MouseDown
  - Click
  - DoubleClick
  - MouseClick
  - MouseHover
  - GotFocus

Timer Control

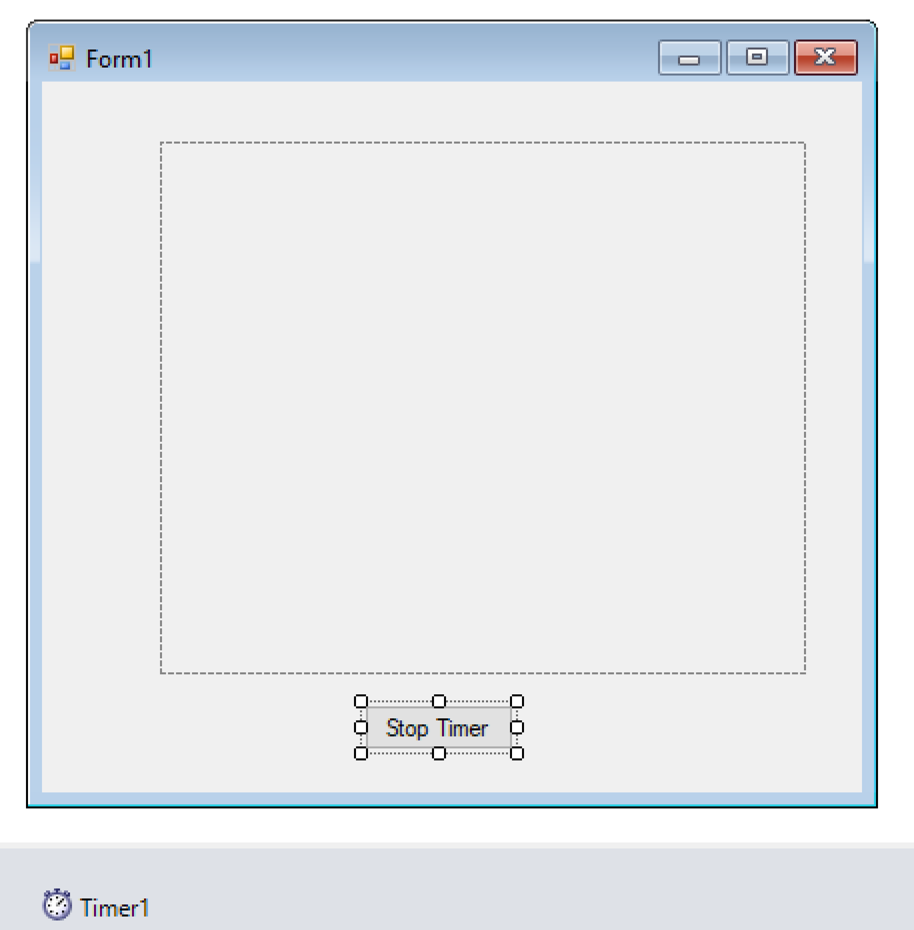
- Used to create periodic events.
- This control is not visible at Run Time.
- It work behind the scenes.
- TimerControl Properties & Events:
  - Enable
  - Interval
  - Start
  - Stop
  - Visible
  - Enabled
- TimerControl Event:
  - Tick

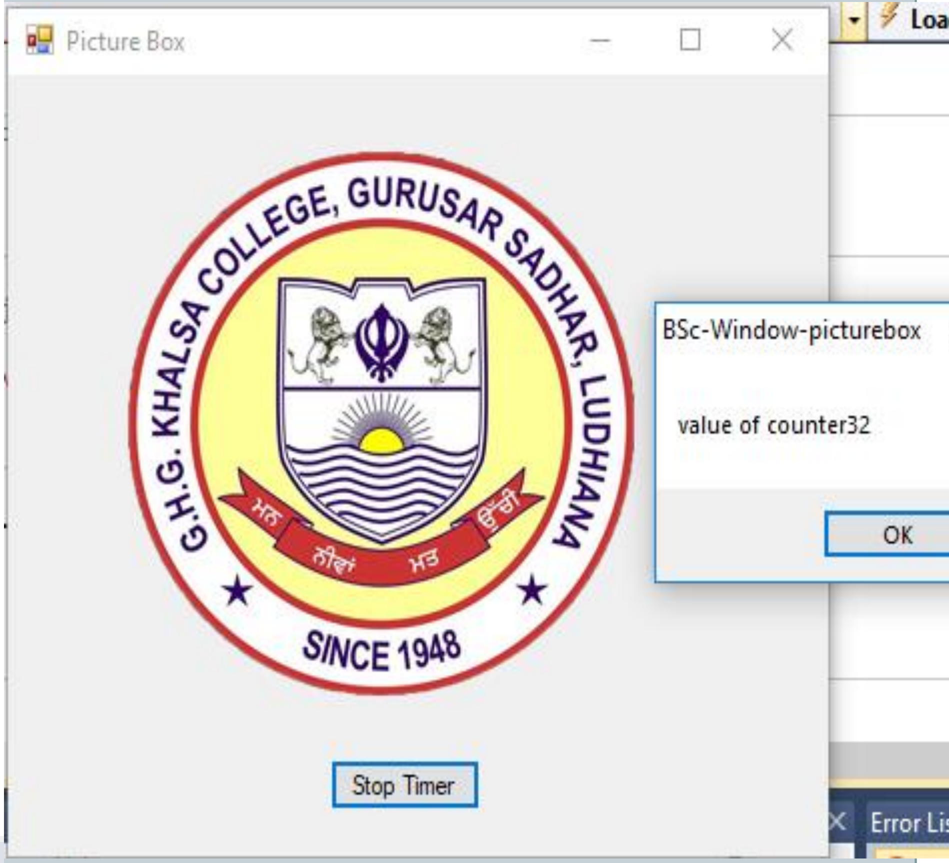
Example:-



```
Public Class Form1
    Dim counter As Integer
    Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Timer1.Tick
        counter = counter + 1

    End Sub

    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
        Me.Text = "Picture Box"
        PictureBox1.Image = Image.FromFile("D\BSc-Window-picturebox\BSc-Window-picturebox\logo_degree.png")
        Timer1.Start()
    End Sub

    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
        Timer1.Stop()
        MsgBox("value of counter" & counter)
    End Sub
End Class
```

Example:-





value of counter32