COMP 3602
C# Application Development

Week Seven - Online

This Week's Learning Outcomes

Menus

ToolTip Class

Week Seven
Online

Toolbars

Timer Class

ToolTip Class

TabIndex	0
Tag	
Text	<Time>
TextAlign	TopLeft
ToolTip on tipMain	**Current System Tim**
UseCompatibleTextRe	False
UseMnemonic	True
UseWaitCursor	False
Visible	True

ToolTip on tipMain
Determines the ToolTip shown when the mouse hovers over the control.

Lives in System.Windows.Forms Namespace

Adding a ToolTip to a Form, Adds a ToolTip Property to Each Visible Component on that Form

SetToolTip Method to Change ToolTip Text

GetToolTip Method to Read ToolTip Text

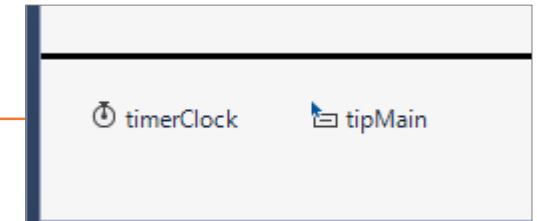See Sample Project

Details at link below:
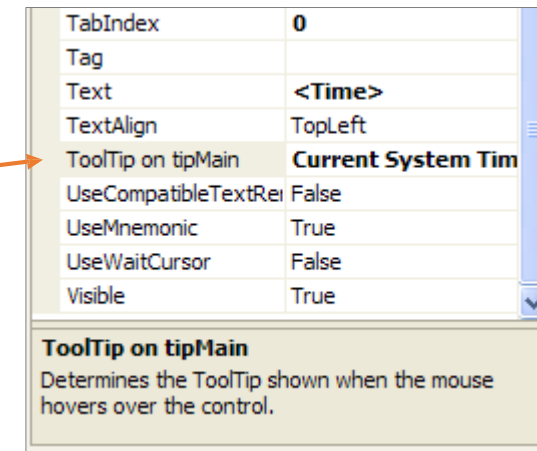
The ToolTip Text can be set or altered by calling the SetToolTip method and passing the control and the Text you want displayed

```
21          labelTimeDisplay.Text = DateTime.Now.ToString("h:mm:ss tt");
22          timerClock.Interval = 1000;
23          timerClock.Enabled = true;
24          tipMain.SetToolTip(labelTimeDisplay, "Current System Time");
25          tipMain.SetToolTip(buttonStartStop, "Stop the Display Timer");
```

[ToolTip Info on MSDN](#)

Dragging a ToolTip control on to the design surface places it in the Component Tray

⏱ timerClock   📥 tipMain

Timer Class

Lives in System.Windows.Forms Namespace

Start() Method Starts the Timer

Stop() Method Stops the Timer

Interval Property sets Timer Interval (in ms)

Fires the Tick Event Every Interval
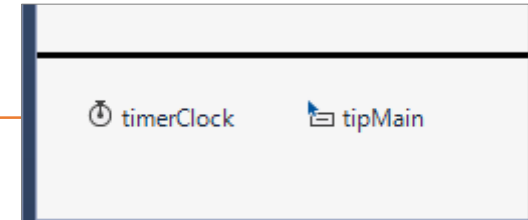
See Sample Project

Details at link below:

Timer Tick Event Handler

```
28 ┌    private void timerClock_Tick(object sender, EventArgs e)
29      {
30          labelTimeDisplay.Text = DateTime.Now.ToString("h:mm:ss tt");
31      }
32
```
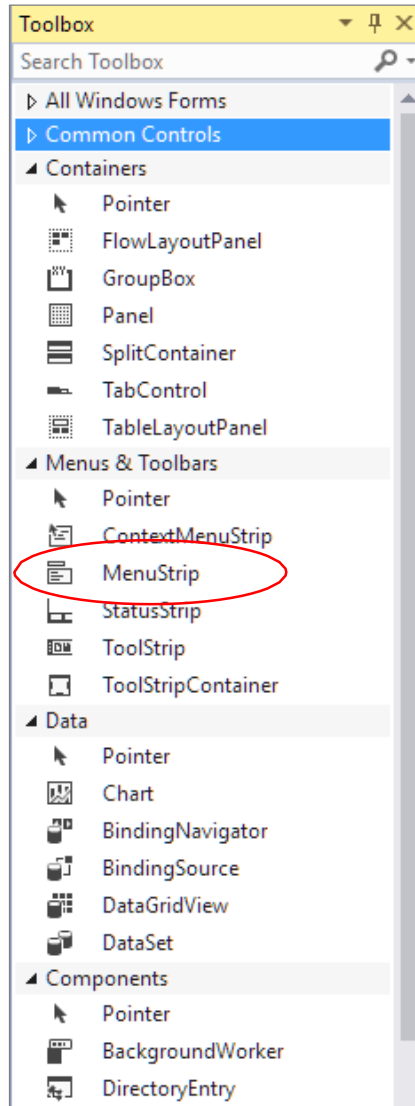
[Timer Info on MSDN](#)

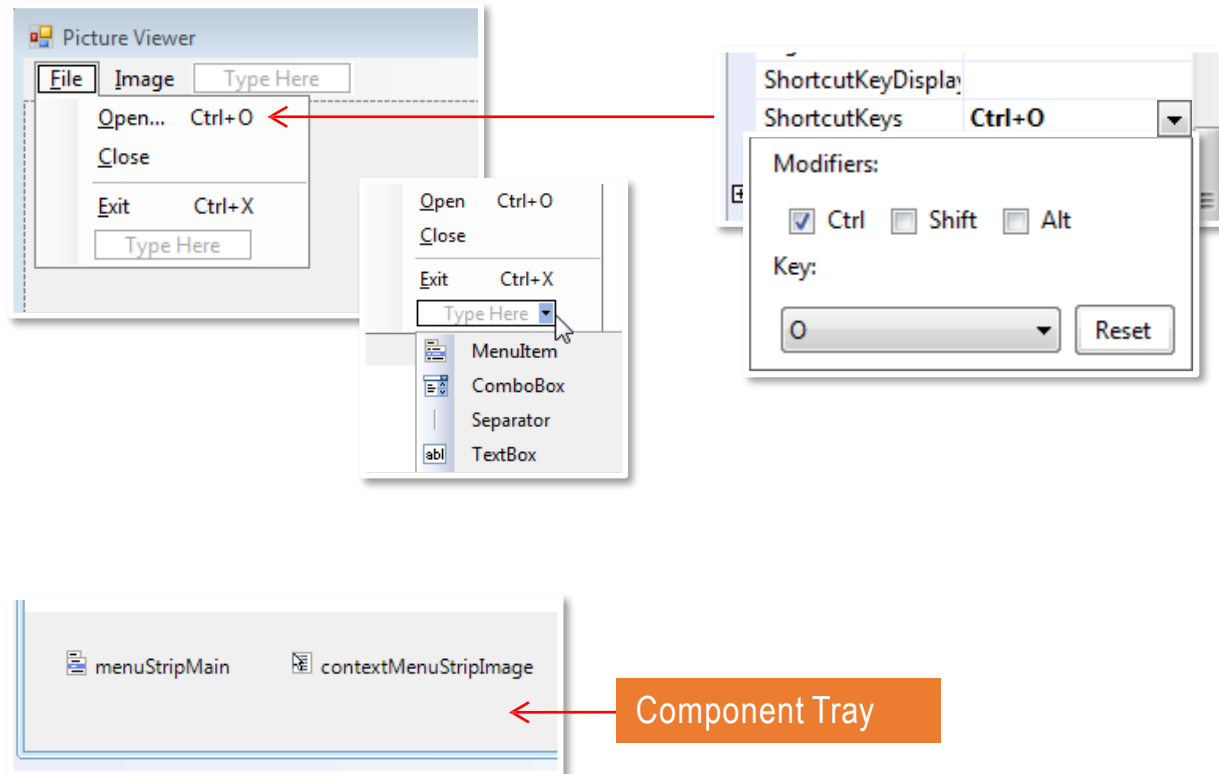Dragging a Timer control on to the design surface places it in the Component Tray

⏱ timerClock   ⊟ tipMain

MenuStrip Class

Inheritance Hierarchy

```
Object
  …
    Control
      ScrollableControl
        ToolStrip
          MenuStrip
```

Component Tray

MenuStrip Class – Adding Images
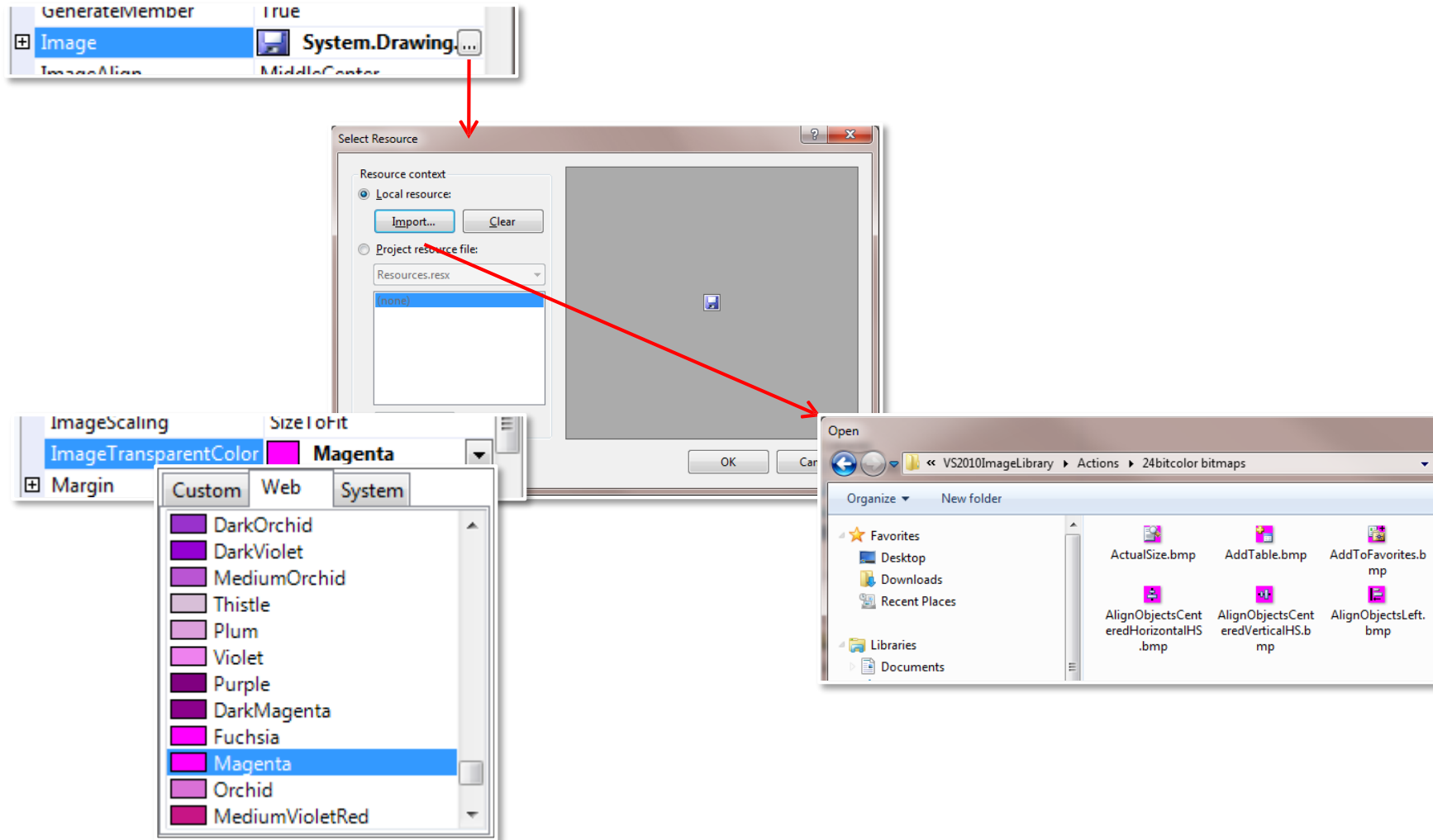
ContextMenuStrip Class

Toolbox

Search Toolbox

▷ All Windows Forms
▷ Common Controls
◢ Containers
   Pointer
   FlowLayoutPanel
   GroupBox
   Panel
   SplitContainer
   TabControl
   TableLayoutPanel
◢ Menus & Toolbars
   Pointer
   ContextMenuStrip
   MenuStrip
   StatusStrip
   ToolStrip
   ToolStripContainer
◢ Data
   Pointer
   Chart
   BindingNavigator
   BindingSource
   DataGridView
   DataSet
◢ Components
   Pointer
   BackgroundWorker
   DirectoryEntry
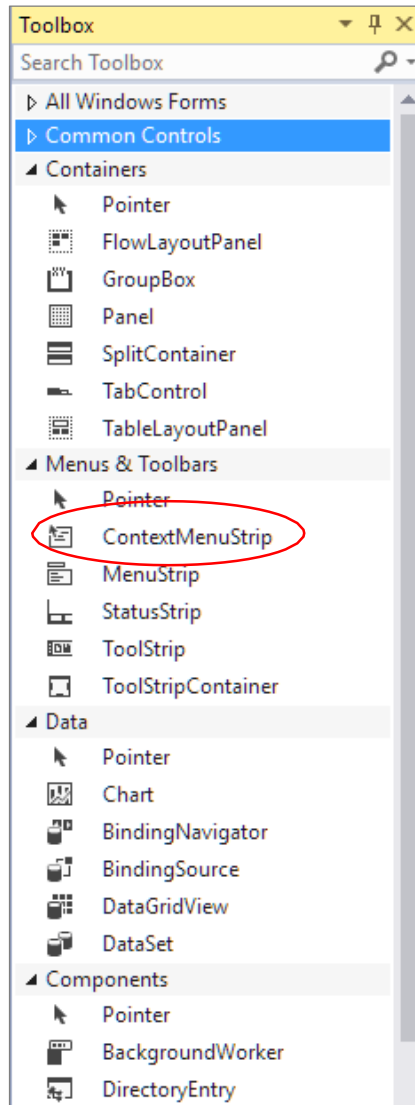
Inheritance Hierarchy

```
Object

  …
    Control
      ScrollableControl
        ToolStrip
          ToolStripDropDown
            ToolStripDropDownMenu
              ContextMenuStrip
```
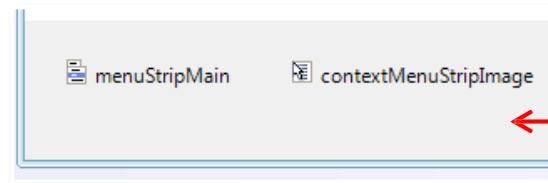

ContextMenuStrip

Flip **H**orizontally

Flip **V**ertically

Type Here

BorderStyle | None
ContextMenuStrip | **contextMenuStripIma**
Cursor

(none)
contextMenuStripImage

---

menuStripMain   contextMenuStripImage
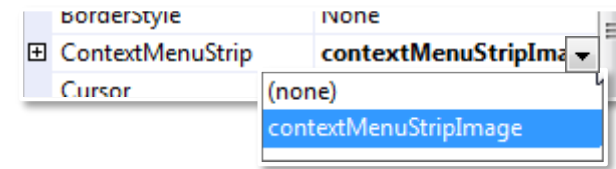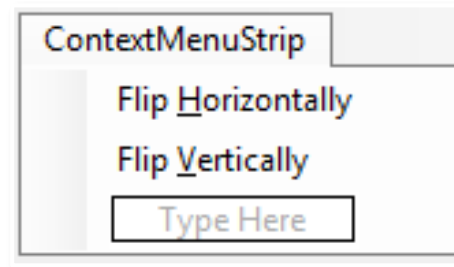
← Component Tray

ToolStrip Class
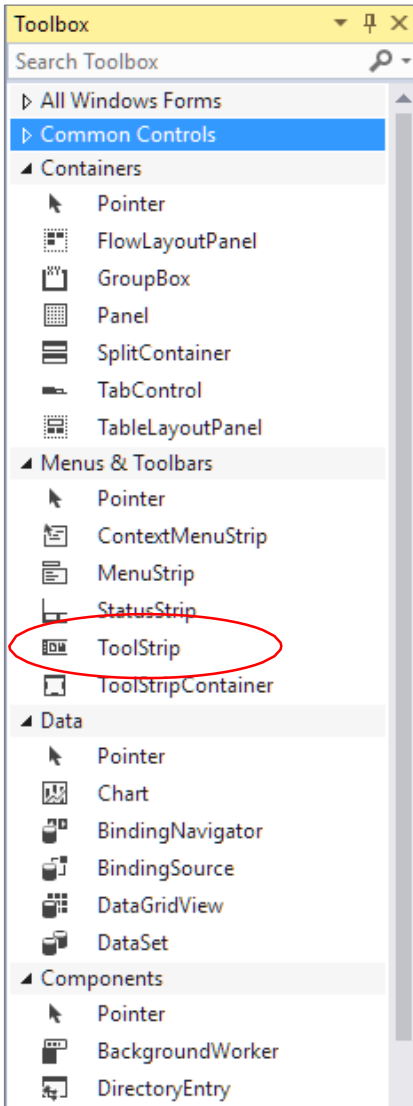
Toolbox

Search Toolbox

▷ All Windows Forms
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  Pointer
  FlowLayoutPanel
  GroupBox
  Panel
  SplitContainer
  TabControl
  TableLayoutPanel
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  MenuStrip
  StatusStrip
  ToolStrip
  ToolStripContainer
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  Pointer
  Chart
  BindingNavigator
  BindingSource
  DataGridView
  DataSet
▲ Components
  Pointer
  BackgroundWorker
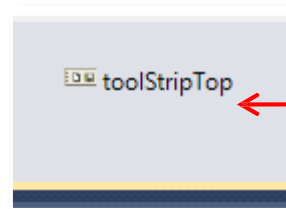 DirectoryEntry

Inheritance Hierarchy

Object

…
** Control**
**   ScrollableControl**
**   ToolStrip**
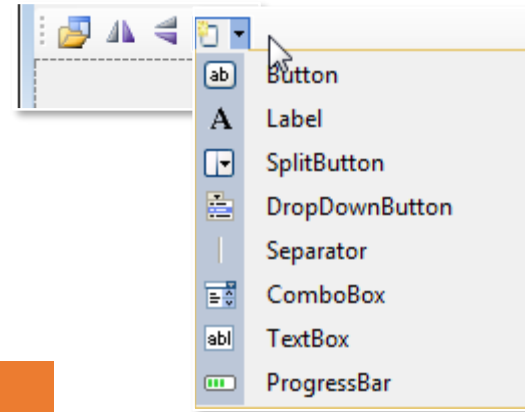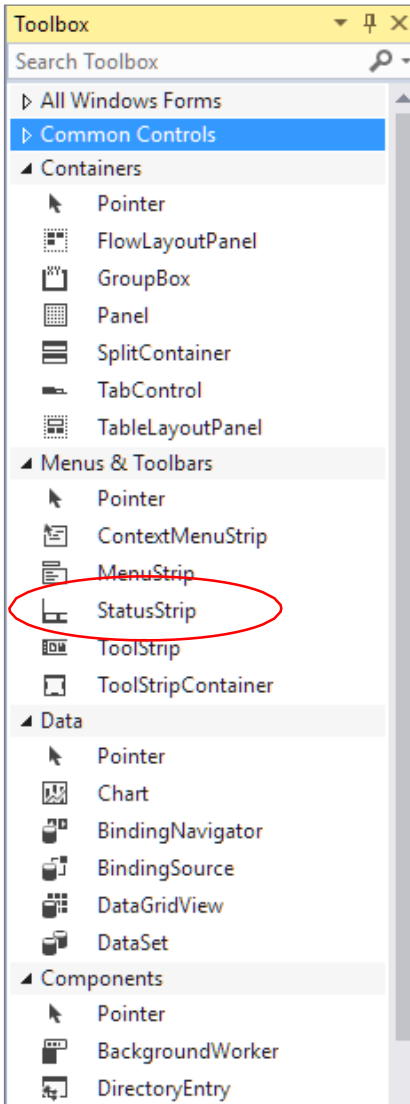
ToolStrip Designer

Click the ComboBox and select fron the list of items to build your ToolBar

Right Click on the ToolStrip and select Edit Items to set Properties on each Item

Picture Viewer

File   Image

Button
Label
SplitButton
DropDownButton
Separator
ComboBox
TextBox
ProgressBar

toolStripTop

Component Tray

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StatusStrip Class

Inheritance Hierarchy

```
Object
   …
   Control
      ScrollableControl
         ToolStrip
            StatusStrip
```
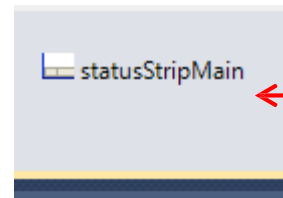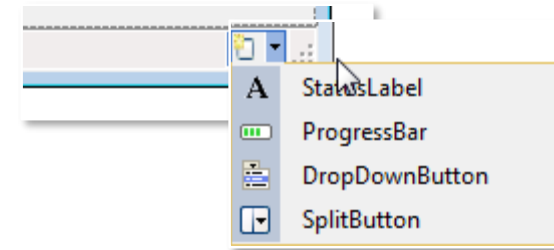
StatusStrip Designer
Click the ComboBox and select fron the list of items to build your StatusBar

Right Click on the StatusStrip and select Edit Items to set Properties on each Item

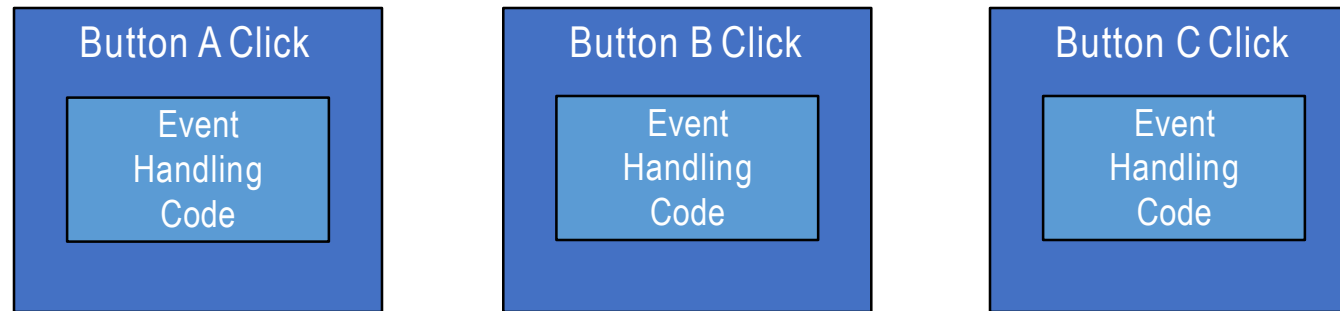Image Normal   Wednesday, February 22, 2017 12:19:21 PM

The StatusBar above contains two Labels. The left Label is of fixed width and the right Label has its Spring Property set to true to fill the remaining space

A StatusLabel
ProgressBar
DropDownButton
SplitButton

statusStripMain ← Component Tray

Toolbox

Search Toolbox

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   BindingSource
   DataGridView
   DataSet
▲ Components
   Pointer
   BackgroundWorker
   DirectoryEntry

Multiple Event Sources – Same Code

Option A – Replicate Code in Each Event Handler

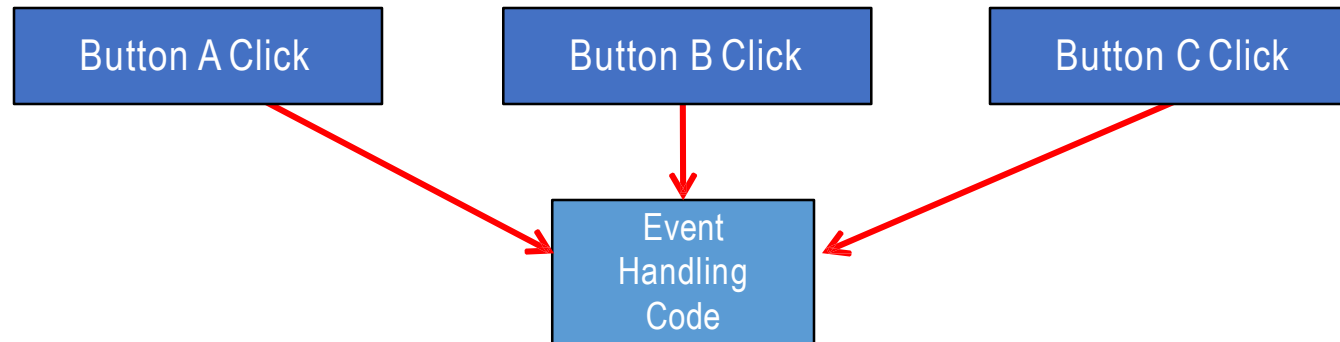| Button A Click	Button B Click	Button C Click
Event Handling Code	Event Handling Code	Event Handling Code

Results in code duplication – poor maintainability

Multiple Event Sources – Same Code

Option B – Call a Common Method from Each Event Handler

Button A Click	Button B Click	Button C Click

Event Handling Code

No code duplication – unnecessary method

Multiple Event Sources – Same Code

Option C – Link Event Handers

Button A Click

Event Handling Code

Button B Click

Button C Click
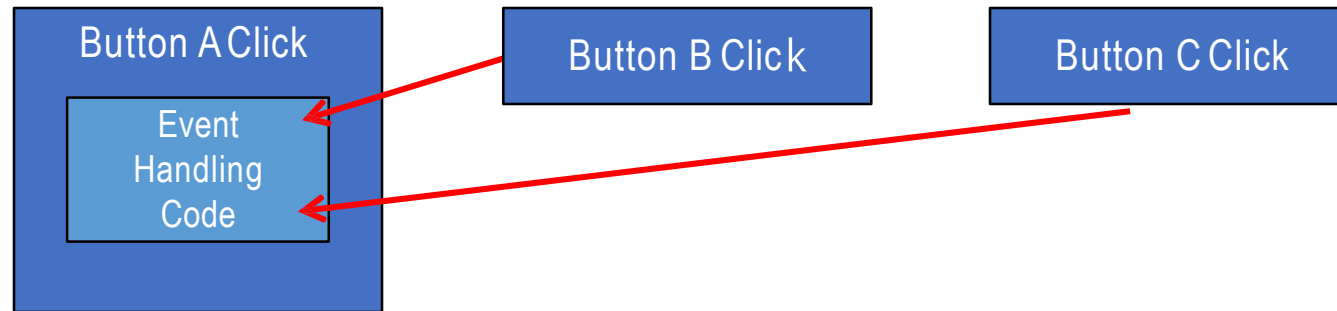
No code duplication – no unnecessary methods