VIII. Windows Forms – UserControl, Drawing, Drag and Drop, Printing

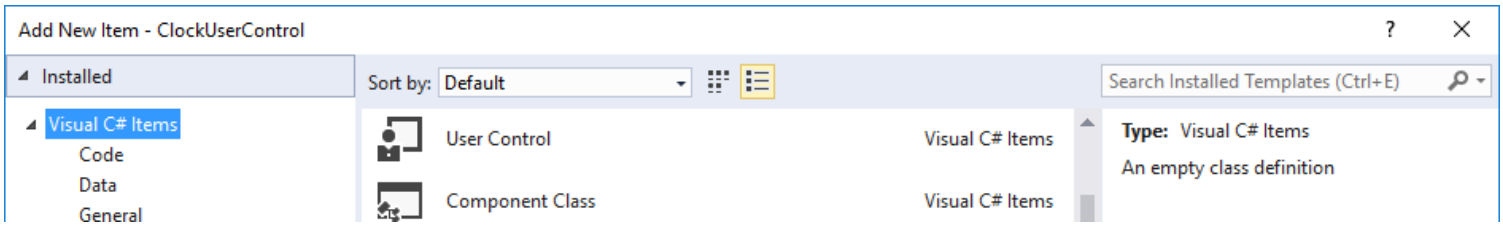
Contents

1. UserControl

Activity

C# Sample code available at http://online.ase.ro – "PieChartGraphicsSample" Sample

1. Add a new UserControl and name it "PieChartGraphicsSample"



2. Add a new class "PieChartCategory", defined as follows

```
internal class PieChartCategory
{
	public string Description { get; set; }

	public float Percentage { get; set; }

	public Color Color { get; set; }

	public PieChartCategory(string description, float percent, Color color)
	{
		Description = description;
		Percentage = percent;
		Color = color;
	}
}
```

2. Drawing

Activity

3. Modify the "MainForm" class as follows

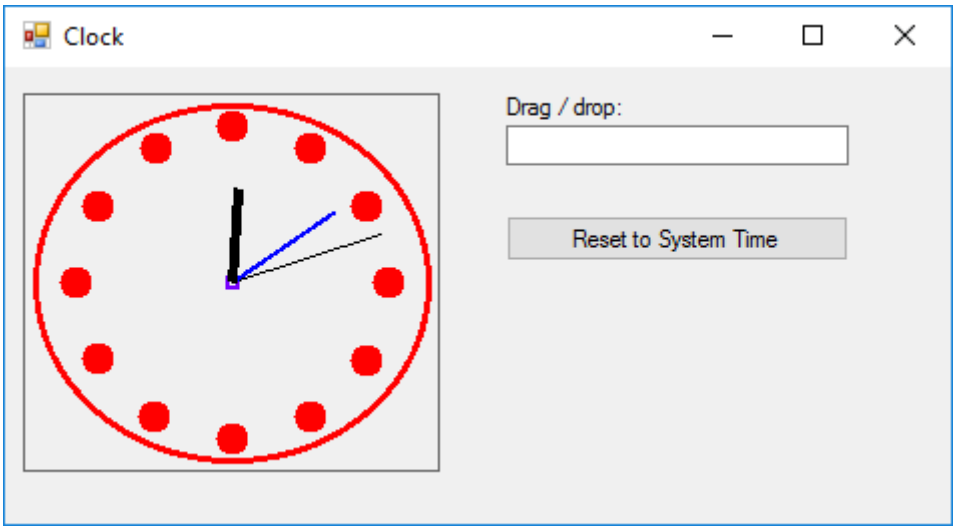
```
public partial class MainForm : Form
{
	#region Attributes
```

```
        private readonly PieChartCategory[] _pieCategories;
        #endregion

        public MainForm()
        {
                InitializeComponent();

                _pieCategories = new[]
                {
                        new PieChartCategory("Gold", 20, Color.Red),
                        new PieChartCategory("Stocks", 15, Color.Blue),
                        new PieChartCategory("Bonds", 35, Color.Magenta),
                        new PieChartCategory("ETFs", 15, Color.YellowGreen),
                        new PieChartCategory("Options", (float) 7.5, Color.Tomato),
                        new PieChartCategory("Cash", (float) 7.5, Color.Beige)
                };
        }

        private void MainForm_Paint(object sender, PaintEventArgs e)
        {
                float percent1 = 0;
                float percent2 = 0;
                float radius = 75;
                int xCenter = 90, yCenter = 150;

                Graphics myGraphics = e.Graphics;

                float x = xCenter - radius;
                float y = yCenter - radius;
                float width = radius*2;
                float height = radius*2;

                for (int i = 0; i < _pieCategories.Length; i++)
                {

                        if (i >= 1)
                                percent1 += _pieCategories[i - 1].Percentage;

                        percent2 += _pieCategories[i].Percentage;

                        float angle1 = percent1/100*360;
                        float angle2 = percent2/100*360;

                        Brush b = new SolidBrush(_pieCategories[i].Color);

                        myGraphics.FillPie(b, x, y, width, height, angle1, angle2 - angle1);
                }

                Pen pen = new Pen(Color.Black);

                myGraphics.DrawEllipse(pen, x, y, width, height);

                float xpos = x + width + 20;
                float ypos = y - 25;

                for (int i = 0; i < _pieCategories.Length; i++)
                {
                        Brush b = new SolidBrush(_pieCategories[i].Color);

                        myGraphics.FillRectangle(b, xpos, ypos, 30, 30);
                        myGraphics.DrawRectangle(pen, xpos, ypos, 30, 30);
```

```
                    Brush b2 = new SolidBrush(Color.Black);

                    myGraphics.DrawString(_pieCategories[i].Description + ": " +
_pieCategories[i].Percentage + "%", Font, b2,
                          xpos + 35, ypos + 12);

                    ypos += 35;
                }

                myGraphics.Dispose();
            }
}
```

Activity

C# Sample code available at http://online.ase.ro – "ClockUserControlSample" Sample



4. Drag and Drop

5. Printing