

Namespace Medium_Scale_Software_Engineering_Project

Classes

[AppCanvas](#)

Represents a drawable canvas that supports basic drawing operations such as lines, shapes, and text.

[AppCommandFactory](#)

Implement CommandFactory with support for all BOOSE commands

[Form1](#)

[MethodDefinition](#)

Represents a method definition

[MyCircle](#)

MyCircle command - draws a circle with given radius, optionally filled.

[MyClear](#)

MyClear command - clears the canvas.

[MyDrawTo](#)

DrawTo command - draws a line from current position to specified (x,y) coordinates.

[MyForCommand](#)

MyForCommand class - represents a custom 'for' command.

[MyIfCommand](#)

Implements the IF command with support for else and nested if statements

[MyIntCommand](#)

Implements the INT variable declaration and assignment command

[MyMoveTo](#)

MyMoveTo command - moves the current position to specified (x,y) coordinates without drawing.

[MyPen](#)

Pen command - sets the drawing pen color using RGB values.

[MyRect](#)

MyRect command - draws a rectangle with specified width and height, optionally filled.

[MyReset](#)

MyReset command - resets the canvas and clears stored commands.

[MyTri](#)

MyTri command - draws a triangle with specified width and height.

[MyWhileCommand](#)

Implements the WHILE loop command

[MyWrite](#)

myWrite command - writes text on the canvas at the current pen position.

[Program](#)

[UnknownCommand](#)

Command that does nothing for unknown commands Prevents exceptions during parsing

[VariableStore](#)

Singleton class that replaces BOOSE internal variable handling for Int, Real, Array, and Method types with unlimited capacity.

Interfaces

[IVariableStore](#)

Abstraction for variable storage and evaluation. Implemented by VariableStore.

Class AppCanvas

Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

Represents a drawable canvas that supports basic drawing operations such as lines, shapes, and text.

```
public class AppCanvas : ICanvas
```

Inheritance

[object](#) ← AppCanvas

Implements

ICanvas

Inherited Members

[object.Equals\(object\)](#), [object.Equals\(object, object\)](#), [object.GetHashCode\(\)](#), [object.GetType\(\)](#), [object.MemberwiseClone\(\)](#), [object.ReferenceEquals\(object, object\)](#), [object.ToString\(\)](#)

Constructors

AppCanvas(int, int)

AppCanvas constructor initializes the canvas with specified width and height.

```
public AppCanvas(int width, int height)
```

Parameters

width [int](#)

height [int](#)

Properties

PenColour

Property to get or set the pen colour used for drawing on the canvas.

```
public object PenColour { get; set; }
```

Property Value

[object](#)

Xpos

Gets or sets the current X position of the pen on the canvas.

```
public int Xpos { get; set; }
```

Property Value

[int](#)

Ypos

Gets or sets the current Y position of the pen on the canvas.

```
public int Ypos { get; set; }
```

Property Value

[int](#)

Methods

Circle(int, bool)

Creates a circle at the current pen position with the specified radius.

```
public void Circle(int radius, bool filled)
```

Parameters

`radius` [int](#)

`filled` [bool](#)

Clear()

Clears the canvas by filling it with black color.

```
public void Clear()
```

DrawCursorDot()

Draws a white dot with black outline at the current pen position. This should be called separately to draw the cursor dot on top of everything.

```
public void DrawCursorDot()
```

DrawTo(int, int)

Draws a line from the current pen position to the specified (x, y) coordinates.

```
public void DrawTo(int x, int y)
```

Parameters

`x` [int](#)

`y` [int](#)

MoveTo(int, int)

Moves the pen to the specified (x, y) coordinates without drawing.

```
public void MoveTo(int x, int y)
```

Parameters

x [int](#)

y [int](#)

Rect(int, int, bool)

Renders a rectangle at the current pen position with the specified width and height.

```
public void Rect(int width, int height, bool filled)
```

Parameters

width [int](#)

height [int](#)

filled [bool](#)

Reset()

Resets the canvas to its initial state.

```
public void Reset()
```

Set(int, int)

Sets the size of the canvas to the specified width and height.

```
public void Set(int width, int height)
```

Parameters

width [int](#)

height [int](#)

SetColour(int, int, int)

Sets the current drawing colour using RGB values.

```
public void SetColour(int red, int green, int blue)
```

Parameters

red [int](#)

green [int](#)

blue [int](#)

Tri(int, int)

Draws a triangle at the current pen position with the specified width and height.

```
public void Tri(int width, int height)
```

Parameters

width [int](#)

height [int](#)

WriteText(string)

Writes the specified text at the current pen position. This is called by the "write" command in BOOSE.

```
public void WriteText(string text)
```

Parameters

text [string](#)

getBitmap()

Gets the underlying bitmap of the canvas for rendering.

```
public object getBitmap()
```

Returns

[object](#)

Class AppCommandFactory


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

Implement CommandFactory with support for all BOOSE commands

```
public class AppCommandFactory : CommandFactory, ICommandFactory
```








Inheritance

[object](#)  ← CommandFactory ← AppCommandFactory

Implements

ICommandFactory

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#) 

Constructors

AppCommandFactory()

Constructor for AppCommandFactory.

```
public AppCommandFactory()
```

AppCommandFactory(AppCanvas)

Constructor for AppCommandFactory with AppCanvas parameter.

```
public AppCommandFactory(AppCanvas canvas)
```

Parameters

canvas [AppCanvas](#)

Methods

MakeCommand(string)

Make a command, showing message boxes on errors

```
public override ICommand MakeCommand(string name)
```

Parameters

name [string](#)

Returns

ICommand

Class Form1

Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

```
public class Form1 : Form, IDropTarget, ISynchronizeInvoke, IWin32Window,
    IBindableComponent, IComponent, IDisposable, IContainerControl
```

Inheritance

[object](#) ← [MarshalByRefObject](#) ← [Component](#) ← [Control](#) ← [ScrollableControl](#) ← [ContainerControl](#) ← [Form](#) ← Form1

Implements

[IDropTarget](#), [ISynchronizeInvoke](#), [IWin32Window](#), [IBindableComponent](#), [IComponent](#), [IDisposable](#), [IContainerControl](#)

Inherited Members

[Form.SetVisibleCore\(bool\)](#), [Form.Activate\(\)](#), [Form.ActivateMdiChild\(Form\)](#), [Form.AddOwnedForm\(Form\)](#), [Form.AdjustFormScrollbars\(bool\)](#), [Form.Close\(\)](#), [Form.CreateAccessibilityInstance\(\)](#), [Form.CreateControlsInstance\(\)](#), [Form.CreateHandle\(\)](#), [Form.DefWndProc\(ref Message\)](#), [Form.ProcessMnemonic\(char\)](#), [Form.CenterToParent\(\)](#), [Form.CenterToScreen\(\)](#), [Form.LayoutMdi\(MdiLayout\)](#), [Form.OnActivated\(EventArgs\)](#), [Form.OnBackgroundImageChanged\(EventArgs\)](#), [Form.OnBackgroundImageLayoutChanged\(EventArgs\)](#), [Form.OnClosing\(CancelEventArgs\)](#), [Form.OnClosed\(EventArgs\)](#), [Form.OnFormClosing\(FormClosingEventArgs\)](#), [Form.OnFormClosed\(FormClosedEventArgs\)](#), [Form.OnCreateControl\(\)](#), [Form.OnDeactivate\(EventArgs\)](#), [Form.OnEnabledChanged\(EventArgs\)](#), [Form.OnEnter\(EventArgs\)](#), [Form.OnFontChanged\(EventArgs\)](#), [Form.OnGotFocus\(EventArgs\)](#), [Form.OnHandleCreated\(EventArgs\)](#), [Form.OnHandleDestroyed\(EventArgs\)](#), [Form.OnHelpButtonClicked\(CancelEventArgs\)](#), [Form.OnLayout\(LayoutEventArgs\)](#), [Form.OnLoad\(EventArgs\)](#), [Form.OnMaximizedBoundsChanged\(EventArgs\)](#), [Form.OnMaximumSizeChanged\(EventArgs\)](#), [Form.OnMinimumSizeChanged\(EventArgs\)](#), [Form.OnInputLanguageChanged\(InputLanguageChangedEventArgs\)](#), [Form.OnInputLanguageChanging\(InputLanguageChangingEventArgs\)](#), [Form.OnVisibleChanged\(EventArgs\)](#), [Form.OnMdiChildActivate\(EventArgs\)](#), [Form.OnMenuStart\(EventArgs\)](#), [Form.OnMenuComplete\(EventArgs\)](#), [Form.OnPaint\(PaintEventArgs\)](#), [Form.OnResize\(EventArgs\)](#), [Form.OnDpiChanged\(DpiChangedEventArgs\)](#), [Form.OnGetDpiScaledSize\(int, int, ref Size\)](#), [Form.OnRightToLeftLayoutChanged\(EventArgs\)](#), [Form.OnShown\(EventArgs\)](#),

[Form.OnTextChanged\(EventArgs\)](#), [Form.ProcessCmdKey\(ref Message, Keys\)](#),
[Form.ProcessDialogKey\(Keys\)](#), [Form.ProcessDialogChar\(char\)](#),
[Form.ProcessKeyPreview\(ref Message\)](#), [Form.ProcessTabKey\(bool\)](#),
[Form.RemoveOwnedForm\(Form\)](#), [Form.Select\(bool, bool\)](#), [Form.ScaleMinMaxSize\(float, float, bool\)](#),
[Form.GetScaledBounds\(Rectangle, SizeF, BoundsSpecified\)](#),
[Form.ScaleControl\(SizeF, BoundsSpecified\)](#), [Form.SetBoundsCore\(int, int, int, int, BoundsSpecified\)](#),
[Form.SetClientSizeCore\(int, int\)](#), [Form.SetDesktopBounds\(int, int, int, int\)](#),
[Form.SetDesktopLocation\(int, int\)](#), [Form.Show\(IWin32Window\)](#), [Form.ShowDialog\(\)](#),
[Form.ShowDialog\(IWin32Window\)](#), [Form.ToString\(\)](#), [Form.UpdateDefaultButton\(\)](#),
[Form.OnResizeBegin\(EventArgs\)](#), [Form.OnResizeEnd\(EventArgs\)](#),
[Form.OnStyleChanged\(EventArgs\)](#), [Form.ValidateChildren\(\)](#),
[Form.ValidateChildren\(ValidationConstraints\)](#), [Form.WndProc\(ref Message\)](#), [Form.AcceptButton](#),
[Form.ActiveForm](#), [Form.ActiveMdiChild](#), [Form.AllowTransparency](#), [Form.AutoScroll](#),
[Form.AutoSize](#), [Form.AutoSizeMode](#), [Form.AutoValidate](#), [Form.BackColor](#),
[Form.FormBorderStyle](#), [Form.CancelButton](#), [Form.ClientSize](#), [Form.ControlBox](#),
[Form.CreateParams](#), [Form.DefaultImeMode](#), [Form.DefaultSize](#), [Form.DesktopBounds](#),
[Form.DesktopLocation](#), [Form.DialogResult](#), [Form.HelpButton](#), [Form.Icon](#), [Form.IsMdiChild](#),
[Form.IsMdiContainer](#), [Form.IsRestrictedWindow](#), [Form.KeyPreview](#), [Form.Location](#),
[Form.MaximizedBounds](#), [Form.MaximumSize](#), [Form.MainMenuStrip](#), [Form.MinimumSize](#),
[Form.MaximizeBox](#), [Form.MdiChildren](#), [Form.MdiChildrenMinimizedAnchorBottom](#),
[Form.MdiParent](#), [Form.MinimizeBox](#), [Form.Modal](#), [Form.Opacity](#), [Form.OwnedForms](#),
[Form.Owner](#), [Form.RestoreBounds](#), [Form.RightToLeftLayout](#), [Form.ShowInTaskbar](#),
[Form.ShowIcon](#), [Form.ShowWithoutActivation](#), [Form.Size](#), [Form.SizeGripStyle](#),
[Form.StartPosition](#), [Form.Text](#), [Form.TopLevel](#), [Form.TopMost](#), [Form.TransparencyKey](#),
[Form.WindowState](#), [Form.AutoSizeChanged](#), [Form.AutoValidateChanged](#),
[Form.HelpButtonClicked](#), [Form.MaximizedBoundsChanged](#), [Form.MaximumSizeChanged](#),
[Form.MinimumSizeChanged](#), [Form.Activated](#), [Form.Deactivate](#), [Form.FormClosing](#),
[Form.FormClosed](#), [Form.Load](#), [Form.MdiChildActivate](#), [Form.MenuComplete](#), [Form.MenuStart](#),
[Form.InputLanguageChanged](#), [Form.InputLanguageChanging](#), [Form.RightToLeftLayoutChanged](#),
[Form.Shown](#), [Form.DpiChanged](#), [Form.ResizeBegin](#), [Form.ResizeEnd](#),
[ContainerControl.OnAutoValidateChanged\(EventArgs\)](#), [ContainerControl.OnMove\(EventArgs\)](#),
[ContainerControl.OnParentChanged\(EventArgs\)](#), [ContainerControl.PerformAutoScale\(\)](#),
[ContainerControl.RescaleConstantsForDpi\(int, int\)](#), [ContainerControl.Validate\(\)](#),
[ContainerControl.Validate\(bool\)](#), [ContainerControl.AutoScaleDimensions](#),
[ContainerControl.AutoScaleFactor](#), [ContainerControl.AutoScaleMode](#),
[ContainerControl.BindingContext](#), [ContainerControl.CanEnableIme](#), [ContainerControl.ActiveControl](#),
[ContainerControl.CurrentAutoScaleDimensions](#), [ContainerControl.ParentForm](#),
[ScrollableControl.ScrollStateAutoScrolling](#), [ScrollableControl.ScrollStateHScrollVisible](#),
[ScrollableControl.ScrollStateVScrollVisible](#), [ScrollableControl.ScrollStateUserHasScrolled](#),
[ScrollableControl.ScrollStateFullDrag](#), [ScrollableControl.GetScrollState\(int\)](#),

[ScrollableControl.OnMouseWheel\(MouseEventArgs\)](#) ,
[ScrollableControl.OnRightToLeftChanged\(EventArgs\)](#) ,
[ScrollableControl.OnPaintBackground\(PaintEventArgs\)](#) ,
[ScrollableControl.OnPaddingChanged\(EventArgs\)](#) , [ScrollableControl.SetDisplayRectLocation\(int, int\)](#) ,
[ScrollableControl.ScrollControlIntoView\(Control\)](#) , [ScrollableControl.ScrollToControl\(Control\)](#) ,
[ScrollableControl.OnScroll\(ScrollEventArgs\)](#) , [ScrollableControl.SetAutoScrollMargin\(int, int\)](#) ,
[ScrollableControl.SetScrollState\(int, bool\)](#) , [ScrollableControl.AutoScrollMargin](#) ,
[ScrollableControl.AutoScrollPosition](#) , [ScrollableControl.AutoScrollMinSize](#) ,
[ScrollableControl.DisplayRectangle](#) , [ScrollableControl.HScroll](#) , [ScrollableControl.HorizontalScroll](#) ,
[ScrollableControl.VScroll](#) , [ScrollableControl.VerticalScroll](#) , [ScrollableControl.Scroll](#) ,
[Control.GetAccessibilityObjectById\(int\)](#) , [Control.SetAutoSizeMode\(AutoSizeMode\)](#) ,
[Control.GetAutoSizeMode\(\)](#) , [Control.GetPreferredSize\(Size\)](#) ,
[Control.AccessibilityNotifyClients\(AccessibleEvents, int\)](#) ,
[Control.AccessibilityNotifyClients\(AccessibleEvents, int, int\)](#) , [Control.BeginInvoke\(Delegate\)](#) ,
[Control.BeginInvoke\(Action\)](#) , [Control.BeginInvoke\(Delegate, params object\[\]\)](#) ,
[Control.BringToFront\(\)](#) , [Control.Contains\(Control\)](#) , [Control.CreateGraphics\(\)](#) ,
[Control.CreateControl\(\)](#) , [Control.DestroyHandle\(\)](#) , [Control.DoDragDrop\(object, DragDropEffects\)](#) ,
[Control.DoDragDrop\(object, DragDropEffects, Bitmap, Point, bool\)](#) ,
[Control.DrawToBitmap\(Bitmap, Rectangle\)](#) , [Control.EndInvoke\(IAsyncResult\)](#) , [Control.FindForm\(\)](#) ,
[Control.GetTopLevel\(\)](#) , [Control.RaiseKeyEvent\(object, KeyEventArgs\)](#) ,
[Control.RaiseMouseEvent\(object, MouseEventArgs\)](#) , [Control.Focus\(\)](#) ,
[Control.FromChildHandle\(nint\)](#) , [Control.FromHandle\(nint\)](#) ,
[Control.GetChildAtPoint\(Point, GetChildAtPointSkip\)](#) , [Control.GetChildAtPoint\(Point\)](#) ,
[Control.GetContainerControl\(\)](#) , [Control.GetNextControl\(Control, bool\)](#) ,
[Control.GetStyle\(ControlStyles\)](#) , [Control.Hide\(\)](#) , [Control.InitLayout\(\)](#) , [Control.Invalidate\(Region\)](#) ,
[Control.Invalidate\(Region, bool\)](#) , [Control.Invalidate\(\)](#) , [Control.Invalidate\(bool\)](#) ,
[Control.Invalidate\(Rectangle\)](#) , [Control.Invalidate\(Rectangle, bool\)](#) , [Control.Invoke\(Action\)](#) ,
[Control.Invoke\(Delegate\)](#) , [Control.Invoke\(Delegate, params object\[\]\)](#) , [Control.Invoke<T>\(Func<T>\)](#) ,
[Control.InvokePaint\(Control, PaintEventArgs\)](#) ,
[Control.InvokePaintBackground\(Control, PaintEventArgs\)](#) , [Control.IsKeyLocked\(Keys\)](#) ,
[Control.IsInputChar\(char\)](#) , [Control.IsInputKey\(Keys\)](#) , [Control.IsMnemonic\(char, string\)](#) ,
[Control.LogicalToDeviceUnits\(int\)](#) , [Control.LogicalToDeviceUnits\(Size\)](#) ,
[Control.ScaleBitmapLogicalToDevice\(ref Bitmap\)](#) , [Control.NotifyInvalidate\(Rectangle\)](#) ,
[Control.InvokeOnClick\(Control, EventArgs\)](#) , [Control.OnAutoSizeChanged\(EventArgs\)](#) ,
[Control.OnBackColorChanged\(EventArgs\)](#) , [Control.OnBindingContextChanged\(EventArgs\)](#) ,
[Control.OnCausesValidationChanged\(EventArgs\)](#) , [Control.OnContextMenuStripChanged\(EventArgs\)](#) ,
[Control.OnCursorChanged\(EventArgs\)](#) , [Control.OnDataContextChanged\(EventArgs\)](#) ,
[Control.OnDockChanged\(EventArgs\)](#) , [Control.OnForeColorChanged\(EventArgs\)](#) ,
[Control.OnNotifyMessage\(Message\)](#) , [Control.OnParentBackColorChanged\(EventArgs\)](#) ,
[Control.OnParentBackgroundImageChanged\(EventArgs\)](#) ,

[Control.OnParentBindingContextChanged\(EventArgs\).☐](#) , [Control.OnParentCursorChanged\(EventArgs\).☐](#) ,
[Control.OnParentDataContextChanged\(EventArgs\).☐](#) , [Control.OnParentEnabledChanged\(EventArgs\).☐](#) ,
[Control.OnParentFontChanged\(EventArgs\).☐](#) , [Control.OnParentForeColorChanged\(EventArgs\).☐](#) ,
[Control.OnParentRightToLeftChanged\(EventArgs\).☐](#) , [Control.OnParentVisibleChanged\(EventArgs\).☐](#) ,
[Control.OnPrint\(PaintEventArgs\).☐](#) , [Control.OnTabIndexChanged\(EventArgs\).☐](#) ,
[Control.OnTabStopChanged\(EventArgs\).☐](#) , [Control.OnClick\(EventArgs\).☐](#) ,
[Control.OnClientSizeChanged\(EventArgs\).☐](#) , [Control.OnControlAdded\(ControlEventArgs\).☐](#) ,
[Control.OnControlRemoved\(ControlEventArgs\).☐](#) , [Control.OnLocationChanged\(EventArgs\).☐](#) ,
[Control.OnDoubleClick\(EventArgs\).☐](#) , [Control.OnDragEnter\(DragEventArgs\).☐](#) ,
[Control.OnDragOver\(DragEventArgs\).☐](#) , [Control.OnDragLeave\(EventArgs\).☐](#) ,
[Control.OnDragDrop\(DragEventArgs\).☐](#) , [Control.OnGiveFeedback\(GiveFeedbackEventArgs\).☐](#) ,
[Control.InvokeGotFocus\(Control, EventArgs\).☐](#) , [Control.OnHelpRequested\(HelpEventArgs\).☐](#) ,
[Control.OnInvalidated\(InvalidateEventArgs\).☐](#) , [Control.OnKeyDown\(KeyEventArgs\).☐](#) ,
[Control.OnKeyPress\(KeyPressEventArgs\).☐](#) , [Control.OnKeyUp\(KeyEventArgs\).☐](#) ,
[Control.OnLeave\(EventArgs\).☐](#) , [Control.InvokeLostFocus\(Control, EventArgs\).☐](#) ,
[Control.OnLostFocus\(EventArgs\).☐](#) , [Control.OnMarginChanged\(EventArgs\).☐](#) ,
[Control.OnMouseDoubleClick\(MouseEventArgs\).☐](#) , [Control.OnMouseClick\(MouseEventArgs\).☐](#) ,
[Control.OnMouseCaptureChanged\(EventArgs\).☐](#) , [Control.OnMouseDown\(MouseEventArgs\).☐](#) ,
[Control.OnMouseEnter\(EventArgs\).☐](#) , [Control.OnMouseLeave\(EventArgs\).☐](#) ,
[Control.OnDpiChangedBeforeParent\(EventArgs\).☐](#) , [Control.OnDpiChangedAfterParent\(EventArgs\).☐](#) ,
[Control.OnMouseHover\(EventArgs\).☐](#) , [Control.OnMouseMove\(MouseEventArgs\).☐](#) ,
[Control.OnMouseUp\(MouseEventArgs\).☐](#) ,
[Control.OnQueryContinueDrag\(QueryContinueDragEventArgs\).☐](#) ,
[Control.OnRegionChanged\(EventArgs\).☐](#) , [Control.OnPreviewKeyDown\(PreviewKeyDownEventArgs\).☐](#) ,
[Control.OnSizeChanged\(EventArgs\).☐](#) , [Control.OnChangeUICues\(UICuesEventArgs\).☐](#) ,
[Control.OnSystemColorsChanged\(EventArgs\).☐](#) , [Control.OnValidating\(CancelEventArgs\).☐](#) ,
[Control.OnValidated\(EventArgs\).☐](#) , [Control.PerformLayout\(\).☐](#) , [Control.PerformLayout\(Control, string\).☐](#) ,
[Control.PointToClient\(Point\).☐](#) , [Control.PointToScreen\(Point\).☐](#) ,
[Control.PreProcessMessage\(ref Message\).☐](#) , [Control.PreProcessControlMessage\(ref Message\).☐](#) ,
[Control.ProcessKeyEventArgs\(ref Message\).☐](#) , [Control.ProcessKeyMessage\(ref Message\).☐](#) ,
[Control.RaiseDragEvent\(object, DragEventArgs\).☐](#) , [Control.RaisePaintEvent\(object, PaintEventArgs\).☐](#) ,
[Control.RecreateHandle\(\).☐](#) , [Control.RectangleToClient\(Rectangle\).☐](#) ,
[Control.RectangleToScreen\(Rectangle\).☐](#) , [Control.ReflectMessage\(nint, ref Message\).☐](#) ,
[Control.Refresh\(\).☐](#) , [Control.ResetMouseEventArgs\(\).☐](#) , [Control.ResetText\(\).☐](#) , [Control.ResumeLayout\(\).☐](#) ,
[Control.ResumeLayout\(bool\).☐](#) , [Control.Scale\(SizeF\).☐](#) , [Control.Select\(\).☐](#) ,
[Control.SelectNextControl\(Control, bool, bool, bool, bool\).☐](#) , [Control.SendToBack\(\).☐](#) ,
[Control.SetBounds\(int, int, int, int\).☐](#) , [Control.SetBounds\(int, int, int, int, BoundsSpecified\).☐](#) ,
[Control.SizeFromClientSize\(Size\).☐](#) , [Control.SetStyle\(ControlStyles, bool\).☐](#) , [Control.SetTopLevel\(bool\).☐](#) ,
[Control.RtlTranslateAlignment\(HorizontalAlignment\).☐](#) ,
[Control.RtlTranslateAlignment\(LeftRightAlignment\).☐](#) ,

[Control.RtlTranslateAlignment\(ContentAlignment\)](#),
[Control.RtlTranslateHorizontal\(HorizontalAlignment\)](#),
[Control.RtlTranslateLeftRight\(LeftRightAlignment\)](#), [Control.RtlTranslateContent\(ContentAlignment\)](#),
[Control.Show\(\)](#), [Control.SuspendLayout\(\)](#), [Control.Update\(\)](#), [Control.UpdateBounds\(\)](#),
[Control.UpdateBounds\(int, int, int, int\)](#), [Control.UpdateBounds\(int, int, int, int, int, int\)](#),
[Control.UpdateZOrder\(\)](#), [Control.UpdateStyles\(\)](#), [Control.OnImeModeChanged\(EventArgs\)](#),
[Control.AccessibilityObject](#), [Control.AccessibleDefaultActionDescription](#),
[Control.AccessibleDescription](#), [Control.AccessibleName](#), [Control.AccessibleRole](#),
[Control.AllowDrop](#), [Control.Anchor](#), [Control.AutoScrollOffset](#), [Control.LayoutEngine](#),
[Control.DataContext](#), [Control.BackgroundImage](#), [Control.BackgroundImageLayout](#),
[Control.Bottom](#), [Control.Bounds](#), [Control.CanFocus](#), [Control.CanRaiseEvents](#),
[Control.CanSelect](#), [Control.Capture](#), [Control.CausesValidation](#),
[Control.CheckForIllegalCrossThreadCalls](#), [Control.ClientRectangle](#), [Control.CompanyName](#),
[Control.ContainsFocus](#), [Control.ContextMenuStrip](#), [Control.Controls](#), [Control.Created](#),
[Control.Cursor](#), [Control.DataBindings](#), [Control.DefaultBackColor](#), [Control.DefaultCursor](#),
[Control.DefaultFont](#), [Control.DefaultForeColor](#), [Control.DefaultMargin](#),
[Control.DefaultMaximumSize](#), [Control.DefaultMinimumSize](#), [Control.DefaultPadding](#),
[Control.DeviceDpi](#), [Control.IsDisposed](#), [Control.Disposing](#), [Control.Dock](#),
[Control.DoubleBuffered](#), [Control.Enabled](#), [Control.Focused](#), [Control.Font](#), [Control.FontHeight](#),
[Control.ForeColor](#), [Control.Handle](#), [Control.HasChildren](#), [Control.Height](#),
[Control.IsHandleCreated](#), [Control.InvokeRequired](#), [Control.IsAccessible](#),
[Control.IsAncestorSiteInDesignMode](#), [Control.IsMirrored](#), [Control.Left](#), [Control.Margin](#),
[Control.ModifierKeys](#), [Control.MouseButtons](#), [Control.MousePosition](#), [Control.Name](#),
[Control.Parent](#), [Control.ProductName](#), [Control.ProductVersion](#), [Control.RecreatingHandle](#),
[Control.Region](#), [Control.RenderRightToLeft](#), [Control.ResizeRedraw](#), [Control.Right](#),
[Control.RightToLeft](#), [Control.ScaleChildren](#), [Control.Site](#), [Control.TabIndex](#), [Control.TabStop](#),
[Control.Tag](#), [Control.Top](#), [Control.TopLevelControl](#), [Control.ShowKeyboardCues](#),
[Control.ShowFocusCues](#), [Control.UseWaitCursor](#), [Control.Visible](#), [Control.Width](#),
[Control.PreferredSize](#), [Control.Padding](#), [Control.ImeMode](#), [Control.ImeModeBase](#),
[Control.PropagatingImeMode](#), [Control.BackColorChanged](#), [Control.BackgroundImageChanged](#),
[Control.BackgroundImageLayoutChanged](#), [Control.BindingContextChanged](#),
[Control.CausesValidationChanged](#), [Control.ClientSizeChanged](#), [Control.ContextMenuStripChanged](#),
[Control.CursorChanged](#), [Control.DockChanged](#), [Control.EnabledChanged](#), [Control.FontChanged](#),
[Control.ForeColorChanged](#), [Control.LocationChanged](#), [Control.MarginChanged](#),
[Control.RegionChanged](#), [Control.RightToLeftChanged](#), [Control.SizeChanged](#),
[Control.TabIndexChanged](#), [Control.TabStopChanged](#), [Control.TextChanged](#),
[Control.VisibleChanged](#), [Control.Click](#), [Control.ControlAdded](#), [Control.ControlRemoved](#),
[Control.DataContextChanged](#), [Control.DragDrop](#), [Control.DragEnter](#), [Control.DragOver](#),
[Control.DragLeave](#), [Control.GiveFeedback](#), [Control.HandleCreated](#), [Control.HandleDestroyed](#),
[Control.HelpRequested](#), [Control.Invalidated](#), [Control.PaddingChanged](#), [Control.Paint](#),

[Control.QueryContinueDrag](#), [Control.QueryAccessibilityHelp](#), [Control.DoubleClick](#), [Control.Enter](#), [Control.GotFocus](#), [Control.KeyDown](#), [Control.KeyPress](#), [Control.KeyUp](#), [Control.Layout](#), [Control.Leave](#), [Control.LostFocus](#), [Control.MouseClick](#), [Control.MouseDoubleClick](#), [Control.MouseCaptureChanged](#), [Control.MouseDown](#), [Control.MouseEnter](#), [Control.MouseLeave](#), [Control.DpiChangedBeforeParent](#), [Control.DpiChangedAfterParent](#), [Control.MouseHover](#), [Control.MouseMove](#), [Control.MouseUp](#), [Control.MouseWheel](#), [Control.Move](#), [Control.PreviewKeyDown](#), [Control.Resize](#), [Control.ChangeUICues](#), [Control.StyleChanged](#), [Control.SystemColorsChanged](#), [Control.Validating](#), [Control.Validated](#), [Control.ParentChanged](#), [Control.ImeModeChanged](#), [Component.Dispose\(\)](#), [Component.GetService\(Type\)](#), [Component.Container](#), [Component.DesignMode](#), [Component.Events](#), [Component.Disposed](#), [MarshalByRefObject.GetLifetimeService\(\)](#), [MarshalByRefObject.InitializeLifetimeService\(\)](#), [MarshalByRefObject.MemberwiseClone\(bool\)](#), [object.Equals\(object\)](#), [object.Equals\(object, object\)](#), [object.GetHashCode\(\)](#), [object.GetType\(\)](#), [object.MemberwiseClone\(\)](#), [object.ReferenceEquals\(object, object\)](#)

Constructors

Form1()

```
public Form1()
```

Methods

Dispose(bool)

Clean up any resources being used.

```
protected override void Dispose(bool disposing)
```

Parameters

disposing [bool](#)

true if managed resources should be disposed; otherwise, false.

Interface IVariableStore

Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

Abstraction for variable storage and evaluation. Implemented by VariableStore.

```
public interface IVariableStore
```

Properties

CurrentMethod

Current method name being executed.

```
string CurrentMethod { get; }
```

Property Value

[string](#)

Methods

Clear()

Clears all variables and methods from the store.

```
void Clear()
```

DefineMethod(string, MethodDefinition)

Defines a new method.

```
void DefineMethod(string name, MethodDefinition definition)
```

Parameters

name [string](#)

definition [MethodDefinition](#)

EnterMethod(string)

Enters a method context for tracking current method.

```
void EnterMethod(string methodName)
```

Parameters

methodName [string](#)

EvaluateExpression(string)

Evaluates an expression string and returns the result.

```
object EvaluateExpression(string expression)
```

Parameters

expression [string](#)

Returns

[object](#)

ExitMethod()

Exits the current method context.

```
void ExitMethod()
```

GetMethod(string)

Gets a method definition by name.

```
MethodDefinition GetMethod(string name)
```

Parameters

name [string](#)

Returns

[MethodDefinition](#)

GetVariable(string)

Gets a variable by name, searching from the current scope outward.

```
object GetVariable(string name)
```

Parameters

name [string](#)

Returns

[object](#)

MethodExists(string)

Method existence check.

```
bool MethodExists(string name)
```

Parameters

name [string](#)

Returns

[bool](#)

PopScope()

Pops the current variable scope from the stack.

```
void PopScope()
```

PushScope()

Pushes a new variable scope onto the stack.

```
void PushScope()
```

SetVariable(string, object, string)

Sets a variable in the current scope.

```
void SetVariable(string name, object value, string type = null)
```

Parameters

name [string](#)

value [object](#)

type [string](#)

VariableExists(string)

Verifies if a variable exists in any scope.

```
bool VariableExists(string name)
```

Parameters

name [string](#)

Returns

[bool](#)

Class MethodDefinition

Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll








Represents a method definition

```
public class MethodDefinition
```

Inheritance

[object](#)  ← MethodDefinition

Inherited Members

[object.Equals\(object\)](#)  , [object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  ,
[object.MemberwiseClone\(\)](#)  , [object.ReferenceEquals\(object, object\)](#)  , [object.ToString\(\)](#) 

Constructors

MethodDefinition()

```
public MethodDefinition()
```

Properties

Body

```
public List<string> Body { get; set; }
```

Property Value

[List](#)  < [string](#)  >

Name

```
public string Name { get; set; }
```

Property Value

[string](#)

Parameters

```
public List<string> Parameters { get; set; }
```

Property Value

[List](#) <[string](#)>

ReturnType

```
public string ReturnType { get; set; }
```

Property Value

[string](#)

Methods

ParseSignature()

```
public (string ShortName, List<(string Type, string Name)> Parameters) ParseSignature()
```

Returns

([string](#) [ShortName](#), [List](#) <([string](#) [Type](#), [string](#) [Name](#))> [Parameters](#))

Class MyCircle

Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

MyCircle command - draws a circle with given radius, optionally filled.

```
public class MyCircle : CommandOneParameter, ICommand
```









Inheritance

[object](#)  ← Command ← CanvasCommand ← CommandOneParameter ← MyCircle

Implements

ICommand

Inherited Members

CommandOneParameter.param1 , CommandOneParameter.param1unprocessed , CanvasCommand.yPos , CanvasCommand.xPos , CanvasCommand.canvas , CanvasCommand.Canvas , Command.IsDouble , Command.program , Command.parameterList , Command.parameters , Command.paramsint , [Command.Set\(StoredProgram,string\)](#)  , Command.Compile() , [Command.ProcessParameters\(string\)](#)  , Command.ToString() , Command.Program , Command.Name , Command.ParameterList , Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  , [object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  , [object.ReferenceEquals\(object, object\)](#) 

Constructors

MyCircle()

MyCircle constructor

```
public MyCircle()
```

MyCircle(Canvas, int)

MyCircle constructor with canvas and radius


```
public MyCircle(Canvas c, int radius)
```

Parameters

c Canvas

radius [int](#)

Methods

CheckParameters(string[])

Check parameters for MyCircle command

```
public override void CheckParameters(string[] parameterList)
```

Parameters

parameterList [string](#)[]

Exceptions

CommandException

Execute()

Execute the MyCircle command

```
public override void Execute()
```

Exceptions

CanvasException

Class MyClear


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

MyClear command - clears the canvas.

```
public class MyClear : Command, ICommand
```









Inheritance

[object](#)  ← Command ← MyClear

Implements

ICommand

Inherited Members

Command.IsDouble , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#)  , Command.Compile() ,
[Command.ProcessParameters\(string\)](#)  , Command.ToString() , Command.Program , Command.Name ,
Command.ParameterList , Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  ,
[object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Constructors

MyClear(AppCanvas)

MyClear constructor

```
public MyClear(AppCanvas canvas)
```

Parameters

canvas [AppCanvas](#)

Methods

CheckParameters(string[])

CheckParameters for MyClear command

```
public override void CheckParameters(string[] parameter)
```

Parameters

parameter [string](#)[]

Exceptions

[NotImplementedException](#)

Execute()

Execute the MyClear command

```
public override void Execute()
```

Class MyDrawTo


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

DrawTo command - draws a line from current position to specified (x,y) coordinates.

```
public class MyDrawTo : CommandTwoParameters, ICommand
```









Inheritance

[object](#)  ← Command ← CanvasCommand ← CommandOneParameter ← CommandTwoParameters ← MyDrawTo

Implements

ICommand

Inherited Members

CommandTwoParameters.param2 , CommandTwoParameters.param2unprocessed ,
CommandOneParameter.param1 , CommandOneParameter.param1unprocessed , CanvasCommand.yPos ,
CanvasCommand.xPos , CanvasCommand.canvas , CanvasCommand.Canvas , Command.IsDouble ,
Command.program , Command.parameterList , Command.parameters , Command.paramsint ,
[Command.Set\(StoredProgram,string\)](#)  , Command.Compile() , [Command.ProcessParameters\(string\)](#)  ,
Command.ToString() , Command.Program , Command.Name , Command.ParameterList ,
Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  , [object.Equals\(object, object\)](#)  ,
[object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Constructors

MyDrawTo()

MyDrawTo constructor

```
public MyDrawTo()
```

MyDrawTo(Canvas, int, int)

MyDrawTo constructor with canvas and coordinates

```
public MyDrawTo(Canvas c, int x, int y)
```

Parameters

c Canvas

x [int](#)

y [int](#)

Methods

CheckParameters(string[])

CheckParameters for MyDrawTo command

```
public override void CheckParameters(string[] parameterList)
```

Parameters

parameterList [string](#)[]

Execute()

Execute the MyDrawTo command

```
public override void Execute()
```

Exceptions

CanvasException

Class MyForCommand


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

MyForCommand class - represents a custom 'for' command.

```
public class MyForCommand : Command, ICommand
```









Inheritance

[object](#)  ← Command ← MyForCommand

Implements

ICommand

Inherited Members

Command.IsDouble , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#)  , Command.Compile() ,
[Command.ProcessParameters\(string\)](#)  , Command.ToString() , Command.Program , Command.Name ,
Command.ParameterList , Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  ,
[object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Methods

CheckParameters(string[])

CheckParameters for MyForCommand

```
public override void CheckParameters(string[] parameters)
```

Parameters

parameters [string](#)  []

Execute()

Execute the MyForCommand

```
public override void Execute()
```

Class MyIfCommand


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

Implements the IF command with support for else and nested if statements

```
public class MyIfCommand : Command, ICommand
```









Inheritance

[object](#)  ← Command ← MyIfCommand

Implements

ICommand

Inherited Members

Command.IsDouble , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#)  , Command.Compile() ,
[Command.ProcessParameters\(string\)](#)  , Command.ToString() , Command.Program , Command.Name ,
Command.ParameterList , Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  ,
[object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Constructors

MyIfCommand()

MyIfCommand constructor

```
public MyIfCommand()
```

Methods

AddToElseBlock(string)

Add command to the ELSE block


```
public void AddToElseBlock(string command)
```

Parameters

command [string](#)

AddToIfBlock(string)

Add command to the IF block

```
public void AddToIfBlock(string command)
```

Parameters

command [string](#)

CheckParameters(string[])

CheckParameters for MyIfCommand

```
public override void CheckParameters(string[] parameters)
```

Parameters

parameters [string](#) []

Exceptions

CommandException

Execute()

Execute the MyIfCommand

```
public override void Execute()
```

SetHasElse(bool)

Set whether the IF command has an ELSE block

```
public void SetHasElse(bool hasElse)
```

Parameters

hasElse [bool](#)

Class MyIntCommand


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

Implements the INT variable declaration and assignment command

```
public class MyIntCommand : Command, ICommand
```









Inheritance

[object](#)  ← Command ← MyIntCommand

Implements

ICommand

Inherited Members

Command.IsDouble , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#)  , Command.Compile() ,
[Command.ProcessParameters\(string\)](#)  , Command.ToString() , Command.Program , Command.Name ,
Command.ParameterList , Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  ,
[object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Constructors

MyIntCommand()

MyIntCommand constructor

```
public MyIntCommand()
```

Methods

CheckParameters(string[])

CheckParameters for INT command

```
public override void CheckParameters(string[] parameters)
```

Parameters

parameters [string](#)[]

Exceptions

CommandException

Execute()

Execute the INT command

```
public override void Execute()
```

Exceptions

[Exception](#)

Class MyMoveTo


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

MyMoveTo command - moves the current position to specified (x,y) coordinates without drawing.

```
public class MyMoveTo : CommandTwoParameters, ICommand
```









Inheritance

[object](#)  ← Command ← CanvasCommand ← CommandOneParameter ← CommandTwoParameters ← MyMoveTo

Implements

ICommand

Inherited Members

CommandTwoParameters.param2 , CommandTwoParameters.param2unprocessed ,
CommandOneParameter.param1 , CommandOneParameter.param1unprocessed , CanvasCommand.yPos ,
CanvasCommand.xPos , CanvasCommand.canvas , CanvasCommand.Canvas , Command.IsDouble ,
Command.program , Command.parameterList , Command.parameters , Command.paramsint ,
[Command.Set\(StoredProgram,string\)](#)  , Command.Compile() , [Command.ProcessParameters\(string\)](#)  ,
Command.ToString() , Command.Program , Command.Name , Command.ParameterList ,
Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  , [object.Equals\(object,object\)](#)  ,
[object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object,object\)](#) 

Constructors

MyMoveTo()

MyMoveTo constructor

```
public MyMoveTo()
```

MyMoveTo(Canvas, int, int)

MyMoveTo constructor with canvas and coordinates

```
public MyMoveTo(Canvas c, int x, int y)
```

Parameters

c Canvas

x [int](#)

y [int](#)

Methods

CheckParameters(string[])

CheckParameters for MyMoveTo command

```
public override void CheckParameters(string[] parameterList)
```

Parameters

parameterList [string](#)[]

Execute()

Execute the MyMoveTo command

```
public override void Execute()
```

Exceptions

CanvasException

Class MyPen


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

Pen command - sets the drawing pen color using RGB values.

```
public class MyPen : CommandThreeParameters, ICommand
```









Inheritance

[object](#)  ← Command ← CanvasCommand ← CommandOneParameter ← CommandTwoParameters ← CommandThreeParameters ← MyPen

Implements

ICommand

Inherited Members

CommandThreeParameters.param3 , CommandThreeParameters.param3unprocessed ,
CommandTwoParameters.param2 , CommandTwoParameters.param2unprocessed ,
CommandOneParameter.param1 , CommandOneParameter.param1unprocessed , CanvasCommand.yPos ,
CanvasCommand.xPos , CanvasCommand.canvas , CanvasCommand.Canvas , Command.IsDouble ,
Command.program , Command.parameterList , Command.parameters , Command.paramsint ,
[Command.Set\(StoredProgram, string\)](#)  , Command.Compile() , [Command.ProcessParameters\(string\)](#)  ,
Command.ToString() , Command.Program , Command.Name , Command.ParameterList ,
Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  , [object.Equals\(object, object\)](#)  ,
[object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Constructors

MyPen()

MyPen constructor

```
public MyPen()
```

MyPen(Canvas, int, int, int)

MyPen constructor with canvas and RGB values

```
public MyPen(Canvas c, int r, int g, int b)
```

Parameters

c Canvas

r [int](#)

g [int](#)

b [int](#)

Methods

CheckParameters(string[])

CheckParameters for MyPen command

```
public override void CheckParameters(string[] parameterList)
```

Parameters

parameterList [string](#)[]

Exceptions

CommandException

Execute()

Execute the MyPen command

```
public override void Execute()
```


Exceptions

CanvasException

Class MyRect


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

MyRect command - draws a rectangle with specified width and height, optionally filled.

```
public class MyRect : CommandTwoParameters, ICommand
```









Inheritance

[object](#)  ← Command ← CanvasCommand ← CommandOneParameter ← CommandTwoParameters ← MyRect

Implements

ICommand

Inherited Members

CommandTwoParameters.param2 , CommandTwoParameters.param2unprocessed ,
CommandOneParameter.param1 , CommandOneParameter.param1unprocessed , CanvasCommand.yPos ,
CanvasCommand.xPos , CanvasCommand.canvas , CanvasCommand.Canvas , Command.IsDouble ,
Command.program , Command.parameterList , Command.parameters , Command.paramsint ,
[Command.Set\(StoredProgram,string\)](#)  , Command.Compile() , [Command.ProcessParameters\(string\)](#)  ,
Command.ToString() , Command.Program , Command.Name , Command.ParameterList ,
Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  , [object.Equals\(object, object\)](#)  ,
[object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Constructors

MyRect()

MyRect constructor

```
public MyRect()
```

MyRect(Canvas, int, int, bool)

MyRect constructor with canvas, width, height, and filled option

```
public MyRect(Canvas c, int width, int height, bool filled)
```

Parameters

c Canvas

width [int](#)

height [int](#)

filled [bool](#)

Methods

CheckParameters(string[])

CheckParameters for MyRect command

```
public override void CheckParameters(string[] parameterList)
```

Parameters

parameterList [string](#)[]

Exceptions

CommandException

Execute()

Execute the MyRect command

```
public override void Execute()
```

Exceptions

Class MyReset


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

MyReset command - resets the canvas and clears stored commands.

```
public class MyReset : Command, ICommand
```









Inheritance

[object](#)  ← Command ← MyReset

Implements

ICommand

Inherited Members

Command.IsDouble , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#)  , Command.Compile() ,
[Command.ProcessParameters\(string\)](#)  , Command.ToString() , Command.Program , Command.Name ,
Command.ParameterList , Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  ,
[object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Constructors

MyReset(AppCanvas, StoredProgram)

MyReset constructor

```
public MyReset(AppCanvas canvas, StoredProgram prog)
```

Parameters

canvas [AppCanvas](#)

prog StoredProgram

Methods

CheckParameters(string[])

CheckParameters for MyReset command

```
public override void CheckParameters(string[] parameter)
```

Parameters

parameter [string](#)[]

Exceptions

CommandException

Execute()

Execute the MyReset command

```
public override void Execute()
```

Class MyTri


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

MyTri command - draws a triangle with specified width and height.

```
public class MyTri : CommandTwoParameters, ICommand
```









Inheritance

[object](#)  ← Command ← CanvasCommand ← CommandOneParameter ← CommandTwoParameters ← MyTri

Implements

ICommand

Inherited Members

CommandTwoParameters.param2 , CommandTwoParameters.param2unprocessed ,
CommandOneParameter.param1 , CommandOneParameter.param1unprocessed , CanvasCommand.yPos ,
CanvasCommand.xPos , CanvasCommand.canvas , CanvasCommand.Canvas , Command.IsDouble ,
Command.program , Command.parameterList , Command.parameters , Command.paramsint ,
[Command.Set\(StoredProgram,string\)](#)  , Command.Compile() , [Command.ProcessParameters\(string\)](#)  ,
Command.ToString() , Command.Program , Command.Name , Command.ParameterList ,
Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  , [object.Equals\(object, object\)](#)  ,
[object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Constructors

MyTri()

MyTri constructor

```
public MyTri()
```

Methods

CheckParameters(string[])

CheckParameters for MyTri command

```
public override void CheckParameters(string[] parameterList)
```

Parameters

parameterList [string](#)[]

Execute()

Execute the MyTri command

```
public override void Execute()
```

Exceptions

CanvasException

Class MyWhileCommand


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

Implements the WHILE loop command

```
public class MyWhileCommand : Command, ICommand
```









Inheritance

[object](#)  ← Command ← MyWhileCommand

Implements

ICommand

Inherited Members

Command.IsDouble , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#)  , Command.Compile() ,
[Command.ProcessParameters\(string\)](#)  , Command.ToString() , Command.Program , Command.Name ,
Command.ParameterList , Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  ,
[object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Constructors

MyWhileCommand()

MyWhileCommand constructor

```
public MyWhileCommand()
```

Methods

AddToLoopBlock(string)

Add a command to the loop block

```
public void AddToLoopBlock(string command)
```

Parameters

command [string](#)

CheckParameters(string[])

CheckParameters for WHILE command

```
public override void CheckParameters(string[] parameters)
```

Parameters

parameters [string](#)[]

Exceptions

CommandException

Execute()

Execute the WHILE command

```
public override void Execute()
```

Class MyWrite


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

myWrite command - writes text on the canvas at the current pen position.

```
public class MyWrite : Command, ICommand
```









Inheritance

[object](#)  ← Command ← MyWrite

Implements

ICommand

Inherited Members

Command.IsDouble , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#)  , Command.Compile() ,
[Command.ProcessParameters\(string\)](#)  , Command.ToString() , Command.Program , Command.Name ,
Command.ParameterList , Command.Parameters , Command.Paramsint , [object.Equals\(object\)](#)  ,
[object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#) 

Constructors

MyWrite(ICanvas)

MyWrite constructor

```
public MyWrite(ICanvas canvas)
```

Parameters

canvas ICanvas

Methods

CheckParameters(string[])

CheckParameters for Write command

```
public override void CheckParameters(string[] parameters)
```

Parameters

parameters [string](#)[]

Exceptions

CommandException

Execute()

Execute the Write command

```
public override void Execute()
```

Exceptions

[Exception](#)

Class Program

Namespace: [Medium Scale Software Engineering Project](#)








Assembly: Medium Scale Software Engineering Project.dll

```
public static class Program
```

Inheritance

[object](#)  ← Program

Inherited Members

[object.Equals\(object\)](#)  , [object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  ,
[object.MemberwiseClone\(\)](#)  , [object.ReferenceEquals\(object, object\)](#)  , [object.ToString\(\)](#) 

Class UnknownCommand

Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

Command that does nothing for unknown commands Prevents exceptions during parsing

```
public class UnknownCommand : ICommand
```

Inheritance

[object](#) ← UnknownCommand

Implements

ICommand

Inherited Members

[object.Equals\(object\)](#), [object.Equals\(object, object\)](#), [object.GetHashCode\(\)](#), [object.GetType\(\)](#), [object.MemberwiseClone\(\)](#), [object.ReferenceEquals\(object, object\)](#), [object.ToString\(\)](#)

Properties

Canvas

Canvas property required by ICommand interface.

```
public Canvas Canvas { get; set; }
```

Property Value

Canvas

Methods

CheckParameters(string[])

CheckParameters method required by ICommand interface.

```
public void CheckParameters(string[] parameters)
```

Parameters

parameters [string](#)[]

Compile()

Compile method required by ICommand interface.

```
public void Compile()
```

Exceptions

[NotImplementedException](#)

Execute()

Execute method that does nothing.

```
public void Execute()
```

Set(StoredProgram, string)

Set method required by ICommand interface.

```
public void Set(StoredProgram Program, string Params)
```

Parameters

Program StoredProgram

Params [string](#)

Exceptions

Class VariableStore


Namespace: [Medium Scale Software Engineering Project](#)

Assembly: Medium Scale Software Engineering Project.dll

Singleton class that replaces BOOSE internal variable handling for Int, Real, Array, and Method types with unlimited capacity.

```
public sealed class VariableStore : IVariableStore
```

Inheritance

[object](#)  ← VariableStore

Implements

[IVariableStore](#)

Inherited Members

[object.Equals\(object\)](#)  , [object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  ,
[object.ReferenceEquals\(object, object\)](#)  , [object.ToString\(\)](#) 

Properties

CurrentMethod

Current method name being executed.

```
public string CurrentMethod { get; }
```

Property Value

[string](#) 

Instance

Get the singleton instance.

```
public static VariableStore Instance { get; }
```

Property Value

[VariableStore](#)

Methods

Clear()

Clears all variables and methods from the store.

```
public void Clear()
```

DefineMethod(string, MethodDefinition)

Defines a new method.

```
public void DefineMethod(string name, MethodDefinition definition)
```

Parameters

name [string](#)

definition [MethodDefinition](#)

EnterMethod(string)

Enters a method context for tracking current method.

```
public void EnterMethod(string methodName)
```

Parameters

methodName [string](#)

EvaluateExpression(string)

Evaluates an expression string and returns the result.

```
public object EvaluateExpression(string expression)
```

Parameters

expression [string](#)

Returns

[object](#)

ExitMethod()

Exits the current method context.

```
public void ExitMethod()
```

GetMethod(string)

Gets a method definition by name.

```
public MethodDefinition GetMethod(string name)
```

Parameters

name [string](#)

Returns

[MethodDefinition](#)

GetVariable(string)

Gets a variable by name, searching from the current scope outward.

```
public object GetVariable(string name)
```

Parameters

name [string](#)

Returns

[object](#)

MethodExists(string)

Method existence check.

```
public bool MethodExists(string name)
```

Parameters

name [string](#)

Returns

[bool](#)

PopScope()

Pops the current variable scope from the stack.

```
public void PopScope()
```

PushScope()

Pushes a new variable scope onto the stack.

```
public void PushScope()
```

SetVariable(string, object, string)

Sets a variable in the current scope.

```
public void SetVariable(string name, object value, string type = null)
```

Parameters

name [string](#)

value [object](#)

type [string](#)

VariableExists(string)

Verifies if a variable exists in any scope.

```
public bool VariableExists(string name)
```

Parameters

name [string](#)

Returns

[bool](#)