

# Namespace BOOSEapp

## Classes

### [AppCanvas](#)

Provides an implementation of the BOOSE.ICanvas interface for drawing shapes and text. This class manages all drawing operations using a [Graphics](#) object backed by a bitmap surface.

### [AppCircle](#)

This class rewrites the Circle command for the BOOSE application. It extends the BOOSE.Command OneParameter class to handle drawing circles centred at the current cursor position with a specified radius.

### [AppCommandFactory](#)

Factory class for creating application-specific BOOSE commands. Inherits from BOOSE.Command Factory and overrides the [MakeCommand\(string\)](#) method to return application-specific implementations of commands such as Circle, Rectangle, and MoveTo.

### [AppMoveTo](#)

This class rewrites the MoveTo command for the BOOSE application. It extends the BOOSE.Command TwoParameters class to handle moving the cursor position to the specified x and y coordinates.

### [AppRectangle](#)

This class rewrites the Rectangle command for the BOOSE application. It extends the BOOSE. CommandOneParameter class to handle drawing rectangles at the current cursor position with a specified width and height.

### [Form](#)

Represents the main form of the BOOSE application, handling the UI, connecting the canvas, parser, and command factory, and managing program execution.

# Class AppCanvas

Namespace: [BOOSEapp](#)

Assembly: BOOSEapp.dll

Provides an implementation of the BOOSE.ICanvas interface for drawing shapes and text. This class manages all drawing operations using a [Graphics](#) object backed by a bitmap surface.

```
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)

Initializes a new instance of the [AppCanvas](#) class with the specified dimensions.

```
public AppCanvas(int xsize, int ysize)
```

## Parameters

**xsize** [int](#)

The width of the canvas, in pixels.

**ysize** [int](#)

The height of the canvas, in pixels.

# Properties

## PenColour

Gets or sets the current pen colour.

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

### Property Value

[object](#)

### Remarks

The value must be a [Color](#) object.

## Xpos

Gets or sets the current X position of the drawing cursor, in pixels.

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

### Property Value

[int](#)

## Ypos

Gets or sets the current Y position of the drawing cursor, in pixels.

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

### Property Value

[int](#)

# Methods

## Circle(int, bool)

Draws a circle at current cursor position with specified radius.

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

### Parameters

**radius** [int](#)

Radius of circle.

**filled** [bool](#)

If True circle is drawn filled, outline if False.

### Exceptions

CanvasException

Throws if radius is less than or equal to zero or if any drawing error occurs.

## Clear()

Fill the background in the default colour (white).

```
public void Clear()
```

### Exceptions

CanvasException

Wraps any exceptions thrown during drawing operations.

## DrawTo(int, int)

Draw a line using the current pen from the last drawing position to the specified position and move the cursor position to the provided (x,y).

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

## Parameters

x [int](#)

Specified X position.

y [int](#)

Specified Y position.

## Exceptions

CanvasException

Throws if the coordinates are out of canvas range or if any drawing error occurs.

## MoveTo(int, int)

Move the X and Y of the cursor position.

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

## Parameters

x [int](#)

Specified X position.

y [int](#)

Specified Y position.

## Exceptions

CanvasException

Throws if new position is out of canvas range.

## Rect(int, int, bool)

Draw a rectangle at cursor position of width and height.

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

Parameters

width [int](#)

height [int](#)

filled [bool](#)

Exceptions

CanvasException

Throws if width or height are less than or equal to zero or if any drawing error occurs.

## Reset()

Reset drawing cursor to (0,0) and reset pen to default colour (black).

```
public void Reset()
```

## Set(int, int)

Set output display size. This method should create whatever drawing display you intend to use of the size specified.

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

Parameters

**width** [int](#)

Specified width.

**height** [int](#)

Specified height.

## Exceptions

CanvasException

Wraps any exceptions thrown during drawing operations.

## SetColour(int, int, int)

Set the pen colour using rgb values.

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

## Parameters

**red** [int](#)

**green** [int](#)

**blue** [int](#)

## Exceptions

CanvasException

Wraps any exceptions thrown during drawing operations.

## Tri(int, int)

Draw a triangle in the bounding rectangle.

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

## Parameters

`width int`

Specified bounding width.

`height int`

Specified bounding height.

## Exceptions

[NotImplementedException](#)

Throws if called as not implemented.

## WriteText(string)

Draws text on the output window at the cursor position.

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

## Parameters

`text string`

## Exceptions

`CanvasException`

Wraps any exceptions thrown during drawing operations.

## getBitmap()

Get the drawing Object of whatever native type. Returned an Object so it can be cast to native type. Use this to get native drawing type so that it can be displayed or output.

```
public object getBitmap()
```

Returns

[object](#)

The current object used for drawing.

Exceptions

CanvasException

Throws if canvas bitmap is null.

# Class AppCircle

Namespace: [BOOSEapp](#)

Assembly: BOOSEapp.dll

This class rewrites the Circle command for the BOOSE application. It extends the BOOSE.CommandOneParameter class to handle drawing circles centred at the current cursor position with a specified radius.

```
public class AppCircle : CommandOneParameter, ICommand
```

## Inheritance

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

## 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

## AppCircle()

Blank constructor for factory instantiation.

```
public AppCircle()
```

## AppCircle(Canvas, int)

Initializes a new instance of the [AppCircle](#) class that draws a circle on the specified canvas with the given radius.

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

## Parameters

c Canvas

The BOOSE.Canvas on which the circle will be drawn.

radius [int](#)

The radius of the circle in pixels.

## Methods

**CheckParameters(string[])**

Ensures that exactly one parameter (the radius) is provided for the circle command.

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

## Parameters

parameterList [string](#)[]

An array containing parameters passed to the command.

## Exceptions

CommandException

Thrown if the 'circle' command does not receive exactly one parameter.

**Execute()**

Executes the command to draw a circle on the canvas.

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

## Exceptions

### CommandException

Throws if a non-integer is passed.

# Class AppCommandFactory

Namespace: [BOOSEapp](#)

Assembly: BOOSEapp.dll

Factory class for creating application-specific BOOSE commands. Inherits from BOOSE.CommandFactory and overrides the [MakeCommand\(string\)](#) method to return application-specific implementations of commands such as Circle, Rectangle, and MoveTo.

```
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\(\)](#)

## Methods

### MakeCommand(string)

Creates a command object corresponding to the specified command type string. Overrides the base factory method to return application-specific command implementations.

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

## Parameters

commandType [string](#)

A string representing the type of command to create (e.g., "circle", "rect", "moveto").

## Returns

## ICommand

An BOOSE.ICommand object corresponding to the specified command type. If the command type is not recognized, the base [MakeCommand\(string\)](#) is called.

# Class AppMoveTo

Namespace: [BOOSEapp](#)

Assembly: BOOSEapp.dll

This class rewrites the MoveTo command for the BOOSE application. It extends the BOOSE.CommandTwoParameters class to handle moving the cursor position to the specified x and y coordinates.

```
public class AppMoveTo : CommandTwoParameters, ICommand
```

## Inheritance

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

## 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

### AppMoveTo()

Blank constructor for factory instantiation.

```
public AppMoveTo()
```

## AppMoveTo(Canvas, int, int)

Initializes a new instance of the [AppMoveTo](#) class that moves cursor position to the specified x and y coordinates of the canvas.

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

### Parameters

c Canvas

The BOOSE.Canvas on which the cursor position is updated.

x [int](#)

The x coordinate the cursor is updated to, in pixels.

y [int](#)

The y coordinate the cursor is updated to, in pixels.

## Methods

### CheckParameters(string[])

Ensures that exactly two parameters (x and y) are provided for the moveto command.

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

### Parameters

parameterList [string](#)[]

An array containing parameters passed to the command.

### Exceptions

CommandException

Thrown if the 'moveto' command does not receive exactly one parameter.

## Execute()

Executes the command to update the cursor position on the canvas.

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

## Exceptions

CommandException

Thrown if a non-integer is passed.

# Class AppRectangle

Namespace: [BOOSEapp](#)

Assembly: BOOSEapp.dll

This class rewrites the Rectangle command for the BOOSE application. It extends the BOOSE.Command OneParameter class to handle drawing rectangles at the current cursor position with a specified width and height.

```
public class AppRectangle : CommandTwoParameters, ICommand
```

## Inheritance

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

## 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

### AppRectangle()

Blank constructor for factory instantiation.

```
public AppRectangle()
```

## AppRectangle(Canvas, int, int)

Initializes a new instance of the [AppRectangle](#) class that draws a rectangle on the specified canvas with the given width and height.

```
public AppRectangle(Canvas c, int width, int height)
```

### Parameters

c Canvas

The BOOSE.Canvas on which the rectangle will be drawn.

width int ↴

The width of the rectangle in pixels.

height int ↴

The height of the rectangle in pixels.

## Methods

### CheckParameters(string[])

Ensures that exactly two parameters (width, height) are provided for the rectangle command.

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

### Parameters

parameterList string[] ↴

An array containing parameters passed to the command.

### Exceptions

CommandException

Thrown if the 'rect' command does not receive exactly two parameters.

## Execute()

Executes the command to draw a rectangle on the canvas.

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

## Exceptions

CommandException

Thrown if a non-integer is passed.

# Class Form

Namespace: [BOOSEapp](#)

Assembly: BOOSEapp.dll

Represents the main form of the BOOSE application, handling the UI, connecting the canvas, parser, and command factory, and managing program execution.

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

## Inheritance

```
object ↗ ← MarshalByRefObject ↗ ← Component ↗ ← Control ↗ ← ScrollableControl ↗ ←  
ContainerControl ↗ ← Form ↗ ← Form
```

## 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.ScaleMinAxisSize\(float, float, bool\)](#) ,  
[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.PerformLayout\(\)](#) , [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.IsAnyInputChar\(char\)](#) , [Control.IsAnyInputKey\(Keys\)](#) , [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.OnInvalidate\(InvalidateEventArgs\)](#) , [Control.OnKeyDown\(KeyEventEventArgs\)](#) ,  
[Control.OnKeyPress\(KeyPressEventEventArgs\)](#) , [Control.OnKeyUp\(KeyEventEventArgs\)](#) ,  
[Control.OnLeave\(EventArgs\)](#) , [Control.InvokeLostFocus\(Control, EventArgs\)](#) ,  
[Control.OnLostFocus\(EventArgs\)](#) , [Control.OnMarginChanged\(EventArgs\)](#) ,  
[Control.OnMouseDoubleClick\(MouseEventArgs\)](#) , [Control.OnMouseClicked\(MouseEventArgs\)](#) ,  
[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\(Control, bool, bool, bool\)](#) , [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.Accessible](#) ,  
[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

### Form()

Initializes the main form of the BOOSE application. Sets up UI components and initializes the canvas, parser, program, and command factory.

```
public Form()
```

## 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.

# Namespace UnitTests

## Classes

### [AppCanvasTests](#)

Test class for AppCanvas methods, ensuring pen position is correct after various commands.

# Class AppCanvasTests

Namespace: [UnitTests](#)

Assembly: UnitTests.dll

Test class for AppCanvas methods, ensuring pen position is correct after various commands.

```
[TestClass]
public sealed class AppCanvasTests
```

Inheritance

[object](#) ← AppCanvasTests

Inherited Members

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

## Methods

### DrawTo\_CheckPenIsInExpectedPosition()

Test method to verify that after executing DrawTo(50, 50), the pen is at the expected position (50, 50).

```
[TestMethod]
public void DrawTo_CheckPenIsInExpectedPosition()
```

### MoveTo\_CheckPenIsInExpectedPosition()

Test method to verify that after executing MoveTo(50, 50), the pen is at the expected position (50, 50).

```
[TestMethod]
public void MoveTo_CheckPenIsInExpectedPosition()
```

### MultilineProgram\_CheckPenIsInExpectedPosition()

Test method to verify that after executing a series of MoveTo and DrawTo commands, the pen is at the expected final position (50, 50).

```
[TestMethod]  
public void MultilineProgram_CheckPenIsInExpectedPosition()
```