

Namespace ASE_Assignment

Classes

[AppCanvas](#)

Class that implements ICanvas Interface. This class handles all the drawing on the system.

[AppCommandArray](#)

A Command that extends BOOSE Array Command to prevent Object Creation Restriction Exception from occurring.

[AppCommandCall](#)

Comand to call a previously defined method.

[AppCommandElse](#)

A Command that extends BOOSE 'Else' Command to prevent Object Creation Restriction Exception from occurring.

[AppCommandEnd](#)

End command for If/While/For/Method/AppCommandMethod Commands.

End checks Boose types for the ciorresponding command
(If/While/For/Method/AppCommandMethod).

[AppCommandFactory](#)

A Factory that extends CommandFactory which creates Command Objects and overrides MakeCommand() method to Create additional commands.

[AppCommandFor](#)

A Command that extends BOOSE 'For' Command to prevent Object Creation Restriction Exception from occurring.

[AppCommandIf](#)

A Command that extends BOOSE If Command to prevent Object Creation Restriction Exception from occurring.

[AppCommandInt](#)

A Command that extends BOOSE Int Command to prevent Object Creation Restriction Exception from occurring.

[AppCommandMethod](#)

A Command that Replaces 'Method' Command To Prevents Limited Object Creation and Restriction Exceptions from occurring - Method Had Hardcoded Creation Limit Restriction. Extends BOOSE CompoundCommand (As CorrespondingCommand Attribute of CompoundCommand Class is Needed).

[AppCommandReal](#)

A Command that extends BOOSE Real Command to prevent Object Creation Restriction Exception from occurring.

[AppCommandWhile](#)

A Command that extends BOOSE While Command to prevent Object Creation Restriction Exception from occurring.

[AppParser](#)

A Class that Parse BOOSE Commands - Uses CommandFactory to Create Appropriate Command Objects - Insert appropriate parameters and StoredProgram reference into Command Objects and Compiles them. - Has No restriction

[AppStoredProgram](#)

A Class that extends StoredProgram to Remove Execution Limit Restriction and Implements new Program Stack and Method ArrayList

[AppTriangle](#)

A Command Class that Draws a Triangle on the output window.

[AppWrite](#)

A Command Class that Writes string on the output window.

[Form1](#)

Auto Generated Partial Class of Windows Form

Class AppCanvas

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

Class that implements ICanvas Interface. This class handles all the drawing on the system.

```
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\(\)](#)

Properties

PenColour

Set pen color penColour Getter/Setter - property

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

Property Value

[object](#)

Xpos

X position of next drawing operation. xPos Getter/Setter - property

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

Property Value

[int ↗](#)

Ypos

Y position of next drawing operation. xPos Getter/Setter - property

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

Property Value

[int ↗](#)

Methods

Circle(int, bool)

Draw a circle at cursor position of radius.

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

Parameters

radius [int ↗](#)

Circle Radius

filled [bool ↗](#)

Exceptions

CanvasException

Raised if the specified radius is invalid. e.g. -10, -20, etc..

Clear()

Clears The Bitmap - Fills the background in the default colour.

```
public void Clear()
```

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 specified position.

```
public void DrawTo(int toX, int toY)
```

Parameters

toX [int](#)

Specified X position.

toY [int](#)

Specified Y position.

Exceptions

CanvasException

Raised if the specified position is beyond the canvas's boundary.

GetAppCanvasSingletonInstance()

gets Singlenton Instance of AppCanvas

```
public static AppCanvas GetAppCanvasSingletonInstance()
```

Returns

[AppCanvas](#)

MoveTo(int, int)

Move cursor to a specified position for the next drawing operation. Updates Xpos and Ypos.

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

Parameters

x [int](#)

Specified X position

y [int](#)

Specified Y position

Exceptions

CanvasException

Raised if the specified position is beyond the canvas's boundary.

Rect(int, int, bool)

Draw a rectangle at the current cursor position of width and height.

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

Parameters

width [int](#)

height [int](#)

filled [bool](#)

Exceptions

CanvasException

Raised if the specified width or height are invalid. e.g. -10, -20, etc...

Reset()

Reset drawing cursor to 0,0 and reset pen to default.

```
public void Reset()
```

Set(int, int)

Sets Canvas Size. Resets xPos,yPos, pen color. Assignes the new resized bitmap Canvas to Current graphical context

```
public void Set(int xSize, int ySize)
```

Parameters

xSize [int](#)

canvas width - x axis

ySize [int](#)

canvas height - y axis

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

Raised if the any of the specified rgb value are above 255

Tri(int, int)

Draw Triangle on the current cursor position - as the midpoint of the triangle width.

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

Parameters

width [int](#)

Triangle width

height [int](#)

Triangle height

WriteText(string)

Draws text on the output window at the cursor position

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

Parameters

text [string](#)

getBitmap()

Get the current Bitmap used by the canvas.

```
public object getBitmap()
```

Returns

object

Object

Class AppCommandArray

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Command that extends BOOSE Array Command to prevent Object Creation Restriction Exception from occurring.

```
public class AppCommandArray : Array, ICommand
```

Inheritance

[object](#) ← Command ← Evaluation ← Array ← AppCommandArray

Implements

ICommand

Inherited Members

Array.PEEK , Array.POKE , Array.type , Array.rows , Array.columns , Array.valueInt , Array.valueReal ,
Array.intArray , Array.realArray , Array.pokeValue , Array.peekVar , Array.rowS , Array.columnS , Array.row ,
Array.column , Array.ArrayRestrictions() , Array.ReduceRestrictionCounter() , Array.Compile() ,
[Array.CheckParameters\(string\[\]\)](#) , Array.Execute() , [Array.ProcessArrayParametersCompile\(bool\)](#) ,
[Array.ProcessArrayParametersExecute\(bool\)](#) , [Array.SetIntArray\(int, int, int\)](#) ,
[Array.SetRealArray\(double, int, int\)](#) , [Array.GetIntArray\(int, int\)](#) , [Array.GetRealArray\(int, int\)](#) ,
Array.Rows , Array.Columns , Evaluation.expression , Evaluation.evaluatedExpression ,
Evaluation.varName , Evaluation.value , [Evaluation.ProcessExpression\(string\)](#) , Evaluation.Expression ,
Evaluation.VarName , Evaluation.Value , Evaluation.Local , Command.program , Command.parameterList ,
Command.parameters , Command.paramsint , [Command.Set\(StoredProgram, string\)](#) ,
[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

AppCommandArray()

```
public AppCommandArray()
```

Class AppCommandCall

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

Comand to call a previously defined method.

```
public class AppCommandCall : Call, ICommand
```

Inheritance

[object](#) ← Command ← Evaluation ← Boolean ← ConditionalCommand ← CompoundCommand ← Call ← AppCommandCall

Implements

ICommand

Inherited Members

Call.methodName , Call.Compile() , CompoundCommand.ReduceRestrictions() ,
[CompoundCommand.CheckParameters\(string\[\]\)](#) , CompoundCommand.CorrespondingCommand ,
ConditionalCommand.endLineNumber , ConditionalCommand.EndLineNumber ,
ConditionalCommand.Condition , ConditionalCommand.LineNumber , ConditionalCommand.CondType ,
ConditionalCommand.ReturnLineNumber , Boolean.BoolValue , Evaluation.expression ,
Evaluation.evaluatedExpression , Evaluation.varName , Evaluation.value ,
[Evaluation.ProcessExpression\(string\)](#) , Evaluation.Expression , Evaluation.VarName , Evaluation.Value ,
Evaluation.Local , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#) , [Command.ProcessParameters\(string\)](#) ,
Command.ToString() , Command.Program , Command.Name , Command.ParameterList ,
Command.Parameters , Command.Parmsint , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) ,
[object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) ,
[object.ReferenceEquals\(object, object\)](#)

Constructors

AppCommandCall()

Calls CompoundCommand.ReduceRestrictions() to prevent CompoundCommand Restriction Exception from occurring.

```
public AppCommandCall()
```

Methods

Execute()

Updates the specified method's local variables according to the actual parameters

Updates the specified Method's return line number

Jumps to the specified method's linenumber.

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

Exceptions

CommandEvent

Restrictions()

Overrides BOOSE.Boolean.Restriction. - Does not let the Restriction Exception to occure.

```
public override void Restrictions()
```

Class AppCommandElse

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Command that extends BOOSE 'Else' Command to prevent Object Creation Restriction Exception from occurring.

```
public class AppCommandElse : Else, ICommand
```

Inheritance

[object](#) ← Command ← Evaluation ← Boolean ← ConditionalCommand ← CompoundCommand ← Else ← AppCommandElse

Implements

ICommand

Inherited Members

[Else.CheckParameters\(string\[\]\)](#) , Else.Compile() , Else.Execute() , Else.CorrectingEnd ,
CompoundCommand.ReduceRestrictions() , CompoundCommand.CorrectingCommand ,
ConditionalCommand.endLineNumber , ConditionalCommand.EndLineNumber ,
ConditionalCommand.Condition , ConditionalCommand.LineNumber , ConditionalCommand.CondType ,
ConditionalCommand.ReturnLineNumber , Boolean.BoolValue , Evaluation.expression ,
Evaluation.evaluatedExpression , Evaluation.varName , Evaluation.value ,
[Evaluation.ProcessExpression\(string\)](#) , Evaluation.Expression , Evaluation.VarName , Evaluation.Value ,
Evaluation.Local , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#) , [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

Restrictions()

Overrides BOOSE.Boolean.Restriction. - Does not let the Restriction Exception to occur.

```
public override void Restrictions()
```

Class AppCommandEnd

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

End command for If/While/For/Method/AppCommandMethod Commands.

End checks Boose types for the ciorresponding command (If/While/For/Method/AppCommandMethod).

```
public class AppCommandEnd : End, ICommand
```

Inheritance

[object](#) ← Command ← Evaluation ← Boolean ← ConditionalCommand ← CompoundCommand ← End ← AppCommandEnd

Implements

ICommand

Inherited Members

End.Compile() , CompoundCommand.ReduceRestrictions() ,
[CompoundCommand.CheckParameters\(string\[\]\)](#) , CompoundCommand.CorrectingCommand ,
ConditionalCommand.endLineNumber , ConditionalCommand.EndLineNumber ,
ConditionalCommand.Condition , ConditionalCommand.LineNumber , ConditionalCommand.CondType ,
ConditionalCommand.ReturnLineNumber , Boolean.BoolValue , Evaluation.expression ,
Evaluation.evaluatedExpression , Evaluation.varName , Evaluation.value ,
[Evaluation.ProcessExpression\(string\)](#) , Evaluation.Expression , Evaluation.VarName , Evaluation.Value ,
Evaluation.Local , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#) , [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

Execute()

Calls Bases Execute Method.

Additionally if the corresponding Command pop-ed from the stack is an AppCommandMethod Command, Updates PC to the corresponding Command's return line Number (Caller - line number)

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

Restrictions()

Overrides BOOSE.Boolean.Restriction. - Does not let the Restriction Exception to occure.

```
public override void Restrictions()
```

Class AppCommandFactory

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Factory that extends CommandFactory which creates Command Objects and overrides MakeCommand() method to Create additional 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()

```
public AppCommandFactory()
```

Methods

MakeCommand(string)

Creates and Returns a Command Object of the specified type via the String passed.

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

Parameters

`commandType` [string](#)

Type of Command Object

Returns

ICommand

ICommand Implemented Object - Command Object

Class AppCommandFor

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Command that extends BOOSE 'For' Command to prevent Object Creation Restriction Exception from occurring.

```
public class AppCommandFor : For, ICommand
```

Inheritance

[object](#) ← Command ← Evaluation ← Boolean ← ConditionalCommand ← For ← AppCommandFor

Implements

ICommand

Inherited Members

For.Compile() , For.Execute() , For.LoopControlV , For.From , For.To , For.Step ,
ConditionalCommand.endLineNumber , ConditionalCommand.EndLineNumber ,
ConditionalCommand.Condition , ConditionalCommand.LineNumber , ConditionalCommand.CondType ,
ConditionalCommand.ReturnLineNumber , Boolean.BoolValue , Evaluation.expression ,
Evaluation.evaluatedExpression , Evaluation.varName , Evaluation.value ,
[Evaluation.CheckParameters\(string\[\]\)](#) , [Evaluation.ProcessExpression\(string\)](#) , Evaluation.Expression ,
Evaluation.VarName , Evaluation.Value , Evaluation.Local , Command.program , Command.parameterList ,
Command.parameters , Command.paramsint , [Command.Set\(StoredProgram, string\)](#) ,
[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

Restrictions()

Overrides BOOSE.Boolean.Restriction. - Does not let the Restriction Exception to occure.

```
public override void Restrictions()
```

Class AppCommandIf

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Command that extends BOOSE If Command to prevent Object Creation Restriction Exception from occurring.

```
public class AppCommandIf : If, ICommand
```

Inheritance

[object](#) ← Command ← Evaluation ← Boolean ← ConditionalCommand ← CompoundCommand ← If ← AppCommandIf

Implements

ICommand

Inherited Members

CompoundCommand.ReduceRestrictions() , [CompoundCommand.CheckParameters\(string\[\]\)](#) ,
CompoundCommand.Compile() , CompoundCommand.CorrectingCommand ,
ConditionalCommand.endLineNumber , ConditionalCommand.Execute() ,
ConditionalCommand.EndLineNumber , ConditionalCommand.Condition ,
ConditionalCommand.LineNumber , ConditionalCommand.CondType ,
ConditionalCommand.ReturnLineNumber , Boolean.BoolValue , Evaluation.expression ,
Evaluation.evaluatedExpression , Evaluation.varName , Evaluation.value ,
[Evaluation.ProcessExpression\(string\)](#) , Evaluation.Expression , Evaluation.VarName , Evaluation.Value ,
Evaluation.Local , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#) , [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

AppCommandIf()

Calls CompoundCommand.ReduceRestrictions() to prevent CompoundCommand Restriction Exception from occurring.

```
public AppCommandIf()
```

Methods

Restrictions()

Overrides BOOSE.Boolean.Restriction. - Does not let the Restriction Exception to occure.

```
public override void Restrictions()
```

Class AppCommandInt

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Command that extends BOOSE Int Command to prevent Object Creation Restriction Exception from occurring.

```
public class AppCommandInt : Int, ICommand
```

Inheritance

[object](#) ← Command ← Evaluation ← Int ← AppCommandInt

Implements

ICommand

Inherited Members

Int.Compile() , Int.Execute() , Evaluation.expression , Evaluation.evaluatedExpression ,
Evaluation.varName , Evaluation.value , [Evaluation.CheckParameters\(string\[\]\)](#) ,
[Evaluation.ProcessExpression\(string\)](#) , Evaluation.Expression , Evaluation.VarName , Evaluation.Value ,
Evaluation.Local , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#) , [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

Restrictions()

Overrides BOOSE.Int.Restriction. - Does not let the Restriction Exception to occur.

```
public override void Restrictions()
```

Class AppCommandMethod

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Command that Replaces 'Method' Command To Prevents Limited Object Creation and Restriction Exceptions from occurring - Method Had Hardcoded Creation Limit Restriction. Extends BOOSE CompoundCommand (As CorrespondingCommand Attribute of CompoundCommand Class is Needed).

```
public class AppCommandMethod : CompoundCommand, ICommand
```

Inheritance

[object](#) ← Command ← Evaluation ← Boolean ← ConditionalCommand ← CompoundCommand ← AppCommandMethod

Implements

ICommand

Inherited Members

CompoundCommand.ReduceRestrictions() , CompoundCommand.CorrectingCommand ,
ConditionalCommand.endLineNumber , ConditionalCommand.EndLineNumber ,
ConditionalCommand.Condition , ConditionalCommand.LineNumber , ConditionalCommand.CondType ,
ConditionalCommand.ReturnLineNumber , Boolean.BoolValue , Evaluation.expression ,
Evaluation.evaluatedExpression , Evaluation.varName , Evaluation.value ,
[Evaluation.ProcessExpression\(string\)](#) , Evaluation.Expression , Evaluation.VarName , Evaluation.Value ,
Evaluation.Local , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#) , [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

AppCommandMethod()

Calls CompoundCommand.ReduceRestrictions() to prevent CompoundCommand Restriction Exception from occurring.

```
public AppCommandMethod()
```

Properties

LocalVariables

Property

```
public string[] LocalVariables { get; }
```

Property Value

[string](#)[]

MethodName

Property

```
public string MethodName { get; }
```

Property Value

[string](#)

Type

Property

```
public string Type { get; }
```

Property Value

[string](#)

Methods

CheckParameters(string[])

Overrides CompoundCommand.CheckParameter - Skips Parameter Check.

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

Parameters

parameter `string[]`

Compile()

Configures the AppMethod Command: Assign line number, Pushes into the new stack, Assigns Method Name and Return Type, Assigns Methods localVariables (Formal Parameters) Types and Names.

```
public override void Compile()
```

Exceptions

CommandException

Execute()

Updates PC(Program Counter) to the Method's End line Number and Adds itself to the New App Method ArrayList.

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

Restrictions()

Overrides BOOSE.Boolean.Restriction. - Does not let the Restriction Exception to occure.

```
public override void Restrictions()
```

Class AppCommandReal

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Command that extends BOOSE Real Command to prevent Object Creation Restriction Exception from occurring.

```
public class AppCommandReal : Real, ICommand
```

Inheritance

[object](#) ← Command ← Evaluation ← Real ← AppCommandReal

Implements

ICommand

Inherited Members

Real.Compile() , Real.Execute() , Real.Value , Evaluation.expression , Evaluation.evaluatedExpression , Evaluation.varName , Evaluation.value , [Evaluation.CheckParameters\(string\[\]\)](#) , [Evaluation.ProcessExpression\(string\)](#) , Evaluation.Expression , Evaluation.VarName , Evaluation.Local , Command.program , Command.parameterList , Command.parameters , Command.paramsint , [Command.Set\(StoredProgram, string\)](#) , [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

Restrictions()

Overrides BOOSE.Real.Restriction. - Does not let the Restriction Exception to occure.

```
public override void Restrictions()
```

Class AppCommandWhile

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Command that extends BOOSE While Command to prevent Object Creation Restriction Exception from occurring.

```
public class AppCommandWhile : While, ICommand
```

Inheritance

[object](#) ← Command ← Evaluation ← Boolean ← ConditionalCommand ← CompoundCommand ← While ← AppCommandWhile

Implements

ICommand

Inherited Members

CompoundCommand.ReduceRestrictions() , [CompoundCommand.CheckParameters\(string\[\]\)](#) ,
CompoundCommand.Compile() , CompoundCommand.CorrespondingCommand ,
ConditionalCommand.endLineNumber , ConditionalCommand.Execute() ,
ConditionalCommand.EndLineNumber , ConditionalCommand.Condition ,
ConditionalCommand.LineNumber , ConditionalCommand.CondType ,
ConditionalCommand.ReturnLineNumber , Boolean.BoolValue , Evaluation.expression ,
Evaluation.evaluatedExpression , Evaluation.varName , Evaluation.value ,
[Evaluation.ProcessExpression\(string\)](#) , Evaluation.Expression , Evaluation.VarName , Evaluation.Value ,
Evaluation.Local , Command.program , Command.parameterList , Command.parameters ,
Command.paramsint , [Command.Set\(StoredProgram, string\)](#) , [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

AppCommandWhile()

Calls CompoundCommand.ReduceRestrictions() to prevent CompoundCommand Restriction Exception from occurring.

```
public AppCommandWhile()
```

Methods

Restrictions()

Overrides BOOSE.Boolean.Restriction. - Does not let the Restriction Exception to occure.

```
public override void Restrictions()
```

Class AppParser

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Class that Parse BOOSE Commands - Uses CommandFactory to Create Appropriate Command Objects -
Insert appropriate parameters and StoredProgram reference into Command Objects and Compiles them. -
Has No restriction

```
public class AppParser : IParser
```

Inheritance

[object](#) ← AppParser

Implements

IParser

Inherited Members

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

Constructors

AppParser(CommandFactory, StoredProgram)

```
public AppParser(CommandFactory Factory, StoredProgram Program)
```

Parameters

Factory CommandFactory

Program StoredProgram

Methods

ParseCommand(string)

Takes a line of BOOSE command and attempt to parse it. The command is split from its parameters. It determines if the given command line is BOOSE command or a Variable that needs to be defined or updated - if neither throws error.

The Command Factory is then called to make the Command object.

Inserts the given Command Parameter and StoredProgram Reference into the returned Command Object then the Command's Compile() method is called to compile it which is then returned.

```
public virtual ICommand ParseCommand(string Line)
```

Parameters

Line [string](#)

line of BOOSE command

Returns

ICommand

Compiled ICommand implemented Object

Exceptions

ParserException

In case given Command/Variable does not exist

ParseProgram(string)

Processes the whole program line by line and ParseCommand() is called for each line.

```
public virtual void ParseProgram(string program)
```

Parameters

program [string](#)

Progam Code

Exceptions

ParserException

Class AppStoredProgram

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Class that extends StoredProgram to Remove Execution Limit Restriction and Implements new Program Stack and Method ArrayList

```
public class AppStoredProgram : StoredProgram, IList, ICollection, IEnumerable,  
ICloneable, IStoredProgram
```

Inheritance

[object](#) ← [ArrayList](#) ← [StoredProgram](#) ← [AppStoredProgram](#)

Implements

[IList](#), [ICollection](#), [IEnumerable](#), [ICloneable](#), [IStoredProgram](#)

Inherited Members

[StoredProgram.SyntaxOk](#), [StoredProgram.AddMethod\(Method\)](#), [StoredProgram.GetMethod\(string\)](#),
[StoredProgram.AddVariable\(Evaluation\)](#), [StoredProgram.GetVariable\(string\)](#),
[StoredProgram.GetVariable\(int\)](#), [StoredProgram.FindVariable\(Evaluation\)](#),
[StoredProgram.FindVariable\(string\)](#), [StoredProgram.VariableExists\(string\)](#),
[StoredProgram.GetVarValue\(string\)](#), [StoredProgram.UpdateVariable\(string, int\)](#),
[StoredProgram.UpdateVariable\(string, double\)](#), [StoredProgram.UpdateVariable\(string, bool\)](#),
[StoredProgram.DeleteVariable\(string\)](#), [StoredProgram.IsExpression\(string\)](#),
[StoredProgram.EvaluateExpressionWithString\(string\)](#), [StoredProgram.EvaluateExpression\(string\)](#),
[StoredProgram.Add\(Command\)](#), [StoredProgram.NextCommand\(\)](#), [StoredProgram.Commandsleft\(\)](#),
[StoredProgram.PC](#), [ArrayList.Adapter\(IList\)](#), [ArrayList.Add\(object\)](#),
[ArrayList.AddRange\(ICollection\)](#), [ArrayList.BinarySearch\(int, int, object, IComparer\)](#),
[ArrayList.BinarySearch\(object\)](#), [ArrayList.BinarySearch\(object, IComparer\)](#), [ArrayList.Clear\(\)](#),
[ArrayList.Clone\(\)](#), [ArrayList.Contains\(object\)](#), [ArrayList.CopyTo\(Array\)](#),
[ArrayList.CopyTo\(Array, int\)](#), [ArrayList.CopyTo\(int, Array, int, int\)](#), [ArrayList.FixedSize\(ArrayList\)](#),
[ArrayList.FixedSize\(IList\)](#), [ArrayList.GetEnumerator\(\)](#), [ArrayList.GetEnumerator\(int, int\)](#),
[ArrayList.GetRange\(int, int\)](#), [ArrayList.IndexOf\(object\)](#), [ArrayList.IndexOf\(object, int\)](#),
[ArrayList.IndexOf\(object, int, int\)](#), [ArrayList.Insert\(int, object\)](#),
[ArrayList.InsertRange\(int, ICollection\)](#), [ArrayList.LastIndexOf\(object\)](#),
[ArrayList.LastIndexOf\(object, int\)](#), [ArrayList.LastIndexOf\(object, int, int\)](#),
[ArrayList.ReadOnly\(ArrayList\)](#), [ArrayList.ReadOnly\(IList\)](#), [ArrayList.Remove\(object\)](#),
[ArrayList.RemoveAt\(int\)](#), [ArrayList.RemoveRange\(int, int\)](#), [ArrayList.Repeat\(object, int\)](#),
[ArrayList.Reverse\(\)](#), [ArrayList.Reverse\(int, int\)](#), [ArrayList.SetRange\(int, ICollection\)](#),

[ArrayList.Sort\(\)](#) , [ArrayList.Sort\(IComparer\)](#) , [ArrayList.Sort\(int, int, IComparer\)](#) ,
[ArrayList.Synchronized\(ArrayList\)](#) , [ArrayList.Synchronized\(IList\)](#) , [ArrayList.ToArray\(\)](#) ,
[ArrayList.ToArray\(Type\)](#) , [ArrayList.TrimToSize\(\)](#) , [ArrayList.Capacity](#) , [ArrayList.Count](#) ,
[ArrayList.FixedSize](#) , [ArrayList.ReadOnly](#) , [ArrayList.Synchronized](#) , [ArrayList.this\[int\]](#) ,
[ArrayList.SyncRoot](#) , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) ,
[object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) ,
[object.ToString\(\)](#)

Constructors

AppStoredProgram(ICanvas)

```
public AppStoredProgram(ICanvas canvas)
```

Parameters

canvas ICanvas

Methods

AddAppMethod(CompoundCommand)

Add Method Commands into the new methodList (ArrayList)

```
public void AddAppMethod(CompoundCommand M)
```

Parameters

M CompoundCommand

GetAppMethod(string)

Get Method Commands from the new methodList (ArrayList)

```
public CompoundCommand GetAppMethod(string methodName)
```

Parameters

methodName [string](#)

Returns

CompoundCommand

Exceptions

StoredProgramException

GetMethodIndex(CompoundCommand)

Get Method Index by Method object

```
public int GetMethodIndex(CompoundCommand M)
```

Parameters

M CompoundCommand

Returns

[int](#)

GetMethodIndex(string)

Get Method index by Method Name

```
public int GetMethodIndex(string methodName)
```

Parameters

methodName [string](#)

Returns

Pop()

Pop ConditionalCommands from the new programStack

```
public override ConditionalCommand Pop()
```

Returns

ConditionalCommand

ConditionalCommand

Exceptions

StoredProgramException

Push(ConditionalCommand)

Push ConditionalCommands into the new programStack

```
public override void Push(ConditionalCommand Com)
```

Parameters

Com ConditionalCommand

Exceptions

StoredProgramException

ResetProgram()

Resets and Clears the StoredProgram

```
public override void ResetProgram()
```

Run()

Executes all the Compiled Commands in the StoredProgram Command ArrayList - According to the Program Counter
No Execution Limit

```
public override void Run()
```

Exceptions

StoredProgramException

Command Execution Error

Class AppTriangle

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Command Class that Draws a Triangle on the output window.

```
public class AppTriangle : CommandTwoParameters, ICommand
```

Inheritance

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

Implements

ICommand

Inherited Members

CommandTwoParameters.param2 , CommandTwoParameters.param2unprocessed ,
[CommandTwoParameters.CheckParameters\(string\[\]\)](#) , CommandOneParameter.param1 ,
CommandOneParameter.param1unprocessed , CanvasCommand.yPos , CanvasCommand.xPos ,
CanvasCommand.canvas , CanvasCommand.Canvas , 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

AppTriangle()

```
public AppTriangle()
```

AppTriangle(Canvas, int, int)

```
public AppTriangle(Canvas iCanvas, int x, int y)
```

Parameters

iCanvas Canvas

reference to an iCanvas Implemented Class Instance

x [int](#)

xPos

y [int](#)

yPos

Methods

Execute()

Draws a Triangle on the referenced iCanvas Implemented Class Instance's bitmap - where the current cursor position is.

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

Class AppWrite

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

A Command Class that Writes string on the output window.

```
public class AppWrite : CommandOneParameter, ICommand
```

Inheritance

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

Implements

ICommand

Inherited Members

CommandOneParameter.param1 , CommandOneParameter.param1unprocessed ,
[CommandOneParameter.CheckParameters\(string\[\]\)](#) , CanvasCommand.yPos , CanvasCommand.xPos ,
CanvasCommand.canvas , CanvasCommand.Canvas , 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

AppWrite()

```
public AppWrite()
```

AppWrite(ICanvas)

```
public AppWrite(ICanvas iCanvas)
```

Parameters

iCanvas ICanvas

reference to an iCanvas Implemented Class Instance

Methods

Execute()

Writes string on the referenced iCanvas Implemented Class Instance's bitmap - where the current cursor position is.

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

Class Form1

Namespace: [ASE Assignment](#)

Assembly: ASE_Assignment.dll

Auto Generated Partial Class of Windows Form

```
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.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.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.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.CurrentAutoSizeDimensions](#) ,
[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.DrawToBitmap\(Bitmap, Rectangle\)](#) , [Control.EndInvoke\(IAsyncResult\)](#) , [Control.FindForm\(\)](#) ,
[Control.GetTopLevel\(\)](#) , [Control.RaiseKeyEvent\(object, KeyEventArgs\)](#) ,
[Control.RaiseMouseEvent\(object, MouseEventArgs\)](#) , [Control.Focus\(\)](#) ,
[Control.FromChildHandle\(IntPtr\)](#) , [Control.FromHandle\(IntPtr\)](#) ,
[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.OnDockChanged\(EventArgs\)](#) ,
[Control.OnForeColorChanged\(EventArgs\)](#) , [Control.OnNotifyMessage\(Message\)](#) ,
[Control.OnParentBackColorChanged\(EventArgs\)](#) ,
[Control.OnParentBackgroundImageChanged\(EventArgs\)](#) ,

[Control.OnParentBindingContextChanged\(EventArgs\)](#) , [Control.OnParentCursorChanged\(EventArgs\)](#) ,
[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.OnGotFocus\(EventArgs\)](#) , [Control.OnHelpRequested\(HelpEventArgs\)](#) ,
[Control.OnInvalidate\(EventArgs\)](#) , [Control.OnKeyDown\(KeyEventEventArgs\)](#) ,
[Control.OnKeyPress\(KeyEventEventArgs\)](#) , [Control.OnKeyUp\(KeyEventEventArgs\)](#) ,
[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.OnMove\(EventArgs\)](#) ,
[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\(IntPtr, ref Message\)](#) ,
[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.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.Dispose](#) , [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.DragDrop](#) , [Control.DragEnter](#) ,
[Control.DragOver](#) , [Control.DragLeave](#) , [Control.GiveFeedback](#) , [Control.HandleCreated](#) ,
[Control.HandleDestroyed](#) , [Control.HelpRequested](#) , [Control.Invalidate](#) ,
[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.

Namespace ASE_Assignment_Test

Classes

[TestAppCanvas](#)

Tests For AppCanvas Class

[TestAppCommandArray](#)

Tests For AppCommandArray Class - Tests Object Creation

[TestAppCommandCall](#)

Tests For AppCommandCall Class - Tests Object Creation

[TestAppCommandElse](#)

Tests For AppCommandElse Class - Tests Object Creation

[TestAppCommandEnd](#)

Tests For AppCommandEnd Class - Tests Object Creation

[TestAppCommandFactory](#)

Tests For AppCommandFactor Class - Tests Commands

[TestAppCommandFor](#)

Tests For AppCommandFor Class - Tests Object Creation

[TestAppCommandIf](#)

Tests For AppCommandIf Class - Tests Object Creation

[TestAppCommandInt](#)

Tests For AppCommandInt Class - Tests Object Creation

[TestAppCommandMethod](#)

Tests For AppCommandMethod Class - Tests Object Creation

[TestAppCommandReal](#)

Tests For AppCommandReal Class - Tests Object Creation

[TestAppCommandWhile](#)

Tests For AppCommandWhile Class - Tests Object Creation

[TestAppParser](#)

Tests For AppParser Class - Tests Object Creation and Parser Limit

[TestAppStoredProgram](#)

Tests For AppStoredProgram Class

Class TestAppCanvas

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCanvas Class

```
[TestClass]
public class TestAppCanvas
```

Inheritance

[object](#) ← TestAppCanvas

Inherited Members

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

Methods

TestCircle()

Test Circle method if an exception is raised if invalid values are inserted

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

TestDrawTo()

Test DrawTo method if the variables storing pen position are correct

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

TestMoveTo()

Test MoveTo Method if the variables storing pen position are correct

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

Class TestAppCommandArray

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandArray Class - Tests Object Creation

```
[TestClass]
public class TestAppCommandArray
```

Inheritance

[object](#) ← TestAppCommandArray

Inherited Members

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

Methods

TestAppCommandArray_ObjectCreationLimit()

Unit test to check if Array Command Object Creation Restiction is removed.

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

Class TestAppCommandCall

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandCall Class - Tests Object Creation

```
[TestClass]  
public class TestAppCommandCall
```

Inheritance

[object](#) ← TestAppCommandCall

Inherited Members

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

Methods

TestAppCommandCall_ObjectCreationLimit()

Unit test to check if "Call" Command Object Creation Restiction is removed.

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

Class TestAppCommandElse

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandElse Class - Tests Object Creation

```
[TestClass]  
public class TestAppCommandElse
```

Inheritance

[object](#) ← TestAppCommandElse

Inherited Members

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

Methods

TestAppCommandElse_ObjectCreationLimit()

Unit test to check if "Else" Command Object Creation Restiction is removed.

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

Class TestAppCommandEnd

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandEnd Class - Tests Object Creation

```
[TestClass]
public class TestAppCommandEnd
```

Inheritance

[object](#) ← TestAppCommandEnd

Inherited Members

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

Methods

TestAppCommandEnd_ObjectCreationLimit()

Unit test to check if "End" Command Object Creation Restiction is removed.

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

Class TestAppCommandFactory

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandFactor Class - Tests Commands

```
[TestClass]
public class TestAppCommandFactory
```

Inheritance

[object](#) ← TestAppCommandFactory

Inherited Members

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

Methods

TestMakeCommand_CircleException()

Test Circle command - if an exception is raised if invalid values are inserted

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

TestMakeCommand_DrawTo()

Unit Test for drawTo command (variables storing pen position are correct)

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

TestMakeCommand_MoveTo()

Unit Test for moveto command (variables storing pen position are correct)

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

TestMakeCommand_MultilineProgram()

Unit Test for a multiline program. (variables storing pen position are correct)

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

Class TestAppCommandFor

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandFor Class - Tests Object Creation

```
[TestClass]
public class TestAppCommandFor
```

Inheritance

[object](#) ← TestAppCommandFor

Inherited Members

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

Methods

TestAppCommandFor_ObjectCreationLimit()

Unit test to check if "For" Command Object Creation Restiction is removed.

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

Class TestAppCommandIf

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandIf Class - Tests Object Creation

```
[TestClass]
public class TestAppCommandIf
```

Inheritance

[object](#) ← TestAppCommandIf

Inherited Members

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

Methods

TestAppCommandIf_ObjectCreationLimit()

Unit test to check if "If" Command Object Creation Restiction is removed.

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

Class TestAppCommandInt

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandInt Class - Tests Object Creation

```
[TestClass]
public class TestAppCommandInt
```

Inheritance

[object](#) ← TestAppCommandInt

Inherited Members

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

Methods

TestAppCommandInt_ObjectCreationLimit()

Unit test to check if int Command Object Creation Restiction is removed.

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

Class TestAppCommandMethod

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandMethod Class - Tests Object Creation

```
[TestClass]
public class TestAppCommandMethod
```

Inheritance

[object](#) ← TestAppCommandMethod

Inherited Members

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

Methods

TestAppCommandMethod_ObjectCreationLimit()

Unit test to check if "Method" Command Object Creation limit Restiction is removed.

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

Class TestAppCommandReal

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandReal Class - Tests Object Creation

```
[TestClass]  
public class TestAppCommandReal
```

Inheritance

[object](#) ← TestAppCommandReal

Inherited Members

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

Methods

TestAppCommandReal_ObjectCreationLimit()

Unit test to check if Real Command Object Creation Restiction is removed.

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

Class TestAppCommandWhile

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppCommandWhile Class - Tests Object Creation

```
[TestClass]
public class TestAppCommandWhile
```

Inheritance

[object](#) ← TestAppCommandWhile

Inherited Members

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

Methods

TestAppCommandWhile_ObjectCreationLimit()

Unit test to check if "While" Command Object Creation Restiction is removed.

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

Class TestAppParser

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppParser Class - Tests Object Creation and Parser Limit

```
[TestClass]
public class TestAppParser
```

Inheritance

[object](#) ← TestAppParser

Inherited Members

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

Methods

TestAppParser_ParseLimit()

Unit test to show Parser Has no Parse Limit. - Original Parser Limit is 20.

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

Class TestAppStoredProgram

Namespace: [ASE Assignment Test](#)

Assembly: ASE_Assignment_Test.dll

Tests For AppStoredProgram Class

```
[TestClass]  
public class TestAppStoredProgram
```

Inheritance

[object](#) ← TestAppStoredProgram

Inherited Members

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

Methods

TestAppStoreProgram_ExecutionLimit()

Unit test to show AppStoredProgram Has no Execution Limit. - Original Execution Limit is 50.

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

Namespace BOOSE_Web_Version

Classes

[Program](#)

Class Program

Namespace: [BOOSE Web Version](#)

Assembly: BOOSE_Web_Version.dll

```
public 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\(\)](#)

Methods

Main(string[])

```
public static void Main(string[] args)
```

Parameters

args [string](#)[]

Namespace BOOSE_Web_Version.Controllers

Classes

[HomeController](#)

Auto Generated HomeController

Class HomeController

Namespace: [BOOSE Web Version.Controllers](#)

Assembly: BOOSE_Web_Version.dll

Auto Generated HomeController

```
public class HomeController : Controller, IActionFilter, IAsyncActionFilter,  
IFilterMetadata, IDisposable
```

Inheritance

[object](#) ← [ControllerBase](#) ← [Controller](#) ← HomeController

Implements

[IActionFilter](#), [IAsyncActionFilter](#), [IFilterMetadata](#), [IDisposable](#)

Inherited Members

[Controller.View\(\)](#), [Controller.View\(string\)](#), [Controller.View\(object\)](#),
[Controller.View\(string, object\)](#), [Controller.PartialView\(\)](#), [Controller.PartialView\(string\)](#),
[Controller.PartialView\(object\)](#), [Controller.PartialView\(string, object\)](#),
[Controller.ViewComponent\(string\)](#), [Controller.ViewComponent\(Type\)](#),
[Controller.ViewComponent\(string, object\)](#), [Controller.ViewComponent\(Type, object\)](#),
[Controller.Json\(object\)](#), [Controller.Json\(object, object\)](#),
[Controller.OnActionExecuting\(ActionExecutingContext\)](#),
[Controller.OnActionExecuted\(ActionExecutedContext\)](#),
[Controller.OnActionExecutionAsync\(ActionExecutingContext, ActionExecutionDelegate\)](#),
[Controller.Dispose\(\)](#), [Controller.Dispose\(bool\)](#), [Controller.ViewData](#), [Controller.TempData](#),
[Controller.ViewBag](#), [ControllerBase.StatusCode\(int\)](#), [ControllerBase.StatusCode\(int, object\)](#),
[ControllerBase.Content\(string\)](#), [ControllerBase.Content\(string, string\)](#),
[ControllerBase.Content\(string, string, Encoding\)](#),
[ControllerBase.Content\(string, MediaTypeHeaderValue\)](#), [ControllerBase.NoContent\(\)](#),
[ControllerBase.Ok\(\)](#), [ControllerBase.Ok\(object\)](#), [ControllerBase.Redirect\(string\)](#),
[ControllerBase.RedirectPermanent\(string\)](#), [ControllerBase.RedirectPreserveMethod\(string\)](#),
[ControllerBase.RedirectPermanentPreserveMethod\(string\)](#), [ControllerBase.LocalRedirect\(string\)](#),
[ControllerBase.LocalRedirectPermanent\(string\)](#), [ControllerBase.LocalRedirectPreserveMethod\(string\)](#),
[ControllerBase.LocalRedirectPermanentPreserveMethod\(string\)](#), [ControllerBase.RedirectToAction\(\)](#),
[ControllerBase.RedirectToAction\(string\)](#), [ControllerBase.RedirectToAction\(string, object\)](#),
[ControllerBase.RedirectToAction\(string, string\)](#),
[ControllerBase.RedirectToAction\(string, string, object\)](#),
[ControllerBase.RedirectToAction\(string, string, string\)](#),

[ControllerBase.RedirectToAction\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToActionPreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, string, string\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, string, object\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToActionPermanentPreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToRoute\(string\)](#) , [ControllerBase.RedirectToRoute\(object\)](#) ,
 [ControllerBase.RedirectToRoute\(string, object\)](#) , [ControllerBase.RedirectToRoute\(string, string\)](#) ,
 [ControllerBase.RedirectToRoute\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanentPreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToPage\(string\)](#) , [ControllerBase.RedirectToPage\(string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string\)](#) , [ControllerBase.RedirectToPage\(string, string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPage\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePermanentPreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.File\(byte\[\], string\)](#) , [ControllerBase.File\(byte\[\], string, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string\)](#) , [ControllerBase.File\(byte\[\], string, string, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(Stream, string\)](#) , [ControllerBase.File\(Stream, string, bool\)](#) ,
 [ControllerBase.File\(Stream, string, string\)](#) , [ControllerBase.File\(Stream, string, string, bool\)](#) ,
 [ControllerBase.File\(Stream, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.File\(Stream, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(Stream, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,

[ControllerBase.File\(Stream, string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(Stream, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(string, string\)](#) , [ControllerBase.File\(string, string, bool\)](#) ,
 [ControllerBase.File\(string, string, string\)](#) , [ControllerBase.File\(string, string, string, bool\)](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(string, string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(string, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string\)](#) , [ControllerBase.PhysicalFile\(string, string, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.Unauthorized\(\)](#) , [ControllerBase.Unauthorized\(object\)](#) , [ControllerBase.NotFound\(\)](#) ,
 [ControllerBase.NotFound\(object\)](#) , [ControllerBase.BadRequest\(\)](#) ,
 [ControllerBase.BadRequest\(object\)](#) , [ControllerBase.BadRequest\(ModelStateDictionary\)](#) ,
 [ControllerBase.UnprocessableEntity\(\)](#) , [ControllerBase.UnprocessableEntity\(object\)](#) ,
 [ControllerBase.UnprocessableEntity\(ModelStateDictionary\)](#) , [ControllerBase.Conflict\(\)](#) ,
 [ControllerBase.Conflict\(object\)](#) , [ControllerBase.Conflict\(ModelStateDictionary\)](#) ,
 [ControllerBase.Problem\(string, string, int?, string, string\)](#) ,
 [ControllerBase.ValidationProblem\(ValidationProblemDetails\)](#) ,
 [ControllerBase.ValidationProblem\(ModelStateDictionary\)](#) , [ControllerBase.ValidationProblem\(\)](#) ,
 [ControllerBase.ValidationProblem\(string, string, int?, string, string, ModelStateDictionary\)](#) ,
 [ControllerBase.Created\(string, object\)](#) , [ControllerBase.Created\(Uri, object\)](#) ,
 [ControllerBase.CreatedAtAction\(string, object\)](#) ,
 [ControllerBase.CreatedAtAction\(string, object, object\)](#) ,
 [ControllerBase.CreatedAtAction\(string, string, object, object\)](#) ,
 [ControllerBase.CreatedAtRoute\(string, object\)](#) , [ControllerBase.CreatedAtRoute\(object, object\)](#) ,
 [ControllerBase.CreatedAtRoute\(string, object, object\)](#) , [ControllerBase.Accepted\(\)](#) ,
 [ControllerBase.Accepted\(object\)](#) , [ControllerBase.Accepted\(Uri\)](#) , [ControllerBase.Accepted\(string\)](#) ,
 [ControllerBase.Accepted\(string, object\)](#) , [ControllerBase.Accepted\(Uri, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string\)](#) , [ControllerBase.AcceptedAtAction\(string, string\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, string, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, object, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, string, object, object\)](#) ,
 [ControllerBase.AcceptedAtRoute\(object\)](#) , [ControllerBase.AcceptedAtRoute\(string\)](#) ,
 [ControllerBase.AcceptedAtRoute\(string, object\)](#) , [ControllerBase.AcceptedAtRoute\(object, object\)](#) ,

[ControllerBase.AcceptedAtRoute\(string, object, object\)](#) , [ControllerBase.Challenge\(\)](#) ,
 [ControllerBase.Challenge\(params string\[\]\)](#) , [ControllerBase.Challenge\(AuthenticationProperties\)](#) ,
 [ControllerBase.Challenge\(AuthenticationProperties, params string\[\]\)](#) , [ControllerBase.Forbid\(\)](#) ,
 [ControllerBase.Forbid\(params string\[\]\)](#) , [ControllerBase.Forbid\(AuthenticationProperties\)](#) ,
 [ControllerBase.Forbid\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal\)](#) , [ControllerBase.SignIn\(ClaimsPrincipal, string\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties, string\)](#) , [ControllerBase.SignOut\(\)](#) ,
 [ControllerBase.SignOut\(AuthenticationProperties\)](#) , [ControllerBase.SignOut\(params string\[\]\)](#) ,
 [ControllerBase.SignOut\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryValidateModel\(object\)](#) , [ControllerBase.TryValidateModel\(object, string\)](#) ,
 [ControllerBase.HttpContext](#) , [ControllerBase.Request](#) , [ControllerBase.Response](#) ,
 [ControllerBase.RouteData](#) , [ControllerBase.ModelState](#) , [ControllerBase.ControllerContext](#) ,
 [ControllerBase.MetadataProvider](#) , [ControllerBase.ModelBinderFactory](#) , [ControllerBase.Url](#) ,
 [ControllerBase.ObjectValidator](#) , [ControllerBase.ProblemDetailsFactory](#) , [ControllerBase.User](#) ,
 [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
 [object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

HomeController(ILocator<HomeController>)

```
public HomeController(ILocator<HomeController> logger)
```

Parameters

```
logger ILogger<HomeController>
```

Methods

BOOSEWebVersion()

Calls the BOOSE_WebVersion view

```
public IActionResult BOOSEWebVersion()
```

Returns

[IActionResult](#)

BOOSE_WebVersion_RunButtonAction(CodeTextModel)

Controller Action that Runs the input text and Saves Output as image.

```
public IActionResult BOOSE_WebVersion_RunButtonAction(CodeTextModel CTM)
```

Parameters

CTM [CodeTextModel](#)

CodeTextModel Object passed by the view

Returns

[IActionResult](#)

Error()

```
[ResponseCache(Duration = 0, Location = ResponseCacheLocation.None, NoStore = true)]  
public IActionResult Error()
```

Returns

[IActionResult](#)

Index()

returns Index View

```
public IActionResult Index()
```

Returns

[IActionResult](#)

Privacy()

returns Privacy View

```
public IActionResult Privacy()
```

Returns

[IActionResult](#)

Namespace BOOSE_Web_Version.Models

Classes

[CodeTextModel](#)

Model that holds BOOSE Code

[ErrorViewModel](#)

Class CodeTextModel

Namespace: [BOOSE Web Version.Models](#)

Assembly: BOOSE_Web_Version.dll

Model that holds BOOSE Code

```
public class CodeTextModel
```

Inheritance

[object](#) ← CodeTextModel

Inherited Members

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

Fields

codeText

```
public string codeText
```

Field Value

[string](#)

Properties

CodeText

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

Property Value

[string](#)

Class ErrorViewModel

Namespace: [BOOSE_Web_Version.Models](#)

Assembly: BOOSE_Web_Version.dll

```
public class ErrorViewModel
```

Inheritance

[object](#) ← ErrorViewModel

Inherited Members

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

Properties

RequestId

```
public string? RequestId { get; set; }
```

Property Value

[string](#)

ShowRequestId

```
public bool ShowRequestId { get; }
```

Property Value

[bool](#)