

Mufasa

1.0.0.0

Generated by Doxygen 1.8.8

Wed Oct 22 2014 05:52:08

Contents

1	Namespace Index	1
1.1	Packages	1
2	Hierarchical Index	3
2.1	Class Hierarchy	3
3	Class Index	5
3.1	Class List	5
4	Namespace Documentation	7
4.1	Package Mufasa	7
4.2	Package Mufasa.BackEnd	7
4.3	Package Mufasa.BackEnd.Designer	7
4.4	Package Mufasa.BackEnd.Exceptions	7
4.5	Package Mufasa.Pages	8
4.6	Package Mufasa.Pages.Settings	8
4.7	Package XamlGeneratedNamespace	8
5	Class Documentation	9
5.1	Mufasa.Pages.Settings>About Class Reference	9
5.1.1	Detailed Description	9
5.1.2	Member Function Documentation	9
5.1.2.1	InitializeComponent	9
5.1.2.2	InitializeComponent	9
5.2	Mufasa.App Class Reference	10
5.2.1	Detailed Description	10
5.2.2	Member Function Documentation	10
5.2.2.1	InitializeComponent	10
5.2.2.2	InitializeComponent	10
5.2.2.3	Main	10
5.2.2.4	Main	10
5.3	Mufasa.Pages.Settings.Appearance Class Reference	11
5.3.1	Detailed Description	11

5.3.2	Member Function Documentation	11
5.3.2.1	InitializeComponent	11
5.3.2.2	InitializeComponent	11
5.4	Mufasa.Pages.Settings.AppearanceViewModel Class Reference	11
5.4.1	Detailed Description	12
5.5	Mufasa.BackEnd.Designer.Construct Class Reference	12
5.5.1	Detailed Description	12
5.5.2	Constructor & Destructor Documentation	13
5.5.2.1	Construct	13
5.5.2.2	Construct	13
5.5.3	Member Function Documentation	13
5.5.3.1	SaveAsBio	13
5.5.4	Property Documentation	13
5.5.4.1	Overlaps	13
5.5.4.2	Settings	13
5.6	Mufasa.Pages.Design Class Reference	13
5.6.1	Detailed Description	14
5.6.2	Member Function Documentation	14
5.6.2.1	InitializeComponent	14
5.6.2.2	InitializeComponent	14
5.7	Mufasa.BackEnd.Designer.Designer Class Reference	14
5.7.1	Detailed Description	14
5.7.2	Constructor & Destructor Documentation	15
5.7.2.1	Designer	15
5.7.3	Member Function Documentation	15
5.7.3.1	AddBrickFromRegistry	15
5.7.3.2	AddConstructionFragment	15
5.7.3.3	AddFragment	15
5.7.4	Property Documentation	15
5.7.4.1	ConstructionList	15
5.7.4.2	FragmentDict	15
5.7.4.3	Settings	15
5.8	Mufasa.BackEnd.Designer.DesignerSettings Class Reference	16
5.8.1	Detailed Description	16
5.8.2	Constructor & Destructor Documentation	16
5.8.2.1	DesignerSettings	16
5.8.3	Property Documentation	16
5.8.3.1	MaxGeneSpecificLen	16
5.8.3.2	MaxOverlapLen	16
5.8.3.3	MinGeneSpecificLen	16

5.8.3.4	MinOverlapLen	16
5.8.3.5	ReactionVolume	16
5.8.3.6	TargetOverlapTm	17
5.8.3.7	TargetPrimerTm	17
5.9	Mufasa.BackEnd.Designer.Fragment Class Reference	17
5.9.1	Detailed Description	18
5.9.2	Constructor & Destructor Documentation	18
5.9.2.1	Fragment	18
5.9.2.2	Fragment	18
5.9.2.3	Fragment	18
5.9.3	Member Function Documentation	18
5.9.3.1	GetReverseComplementString	18
5.9.3.2	GetString	18
5.9.4	Property Documentation	18
5.9.4.1	Concentration	18
5.9.4.2	IsVector	18
5.9.4.3	Length	19
5.9.4.4	Name	19
5.9.4.5	Sequence	19
5.9.4.6	Source	19
5.9.4.7	Volume	19
5.10	Mufasa.BackEnd.Exceptions.FragmentNamingException Class Reference	19
5.10.1	Detailed Description	19
5.10.2	Constructor & Destructor Documentation	19
5.10.2.1	FragmentNamingException	19
5.10.2.2	FragmentNamingException	20
5.11	Mufasa.Pages.FragmentViewModel Class Reference	20
5.11.1	Detailed Description	21
5.11.2	Constructor & Destructor Documentation	21
5.11.2.1	FragmentViewModel	21
5.11.2.2	FragmentViewModel	21
5.11.3	Member Function Documentation	21
5.11.3.1	OnPropertyChanged	21
5.11.4	Property Documentation	21
5.11.4.1	Concentration	21
5.11.4.2	IsVector	21
5.11.4.3	Length	21
5.11.4.4	Model	21
5.11.4.5	Name	21
5.11.4.6	Sequence	22

5.11.4.7	Source	22
5.11.4.8	Volume	22
5.11.5	Event Documentation	22
5.11.5.1	PropertyChanged	22
5.12	XamlGeneratedNamespace.GeneratedInternalTypeHelper Class Reference	22
5.12.1	Detailed Description	23
5.12.2	Member Function Documentation	23
5.12.2.1	AddEventHandler	23
5.12.2.2	AddEventHandler	23
5.12.2.3	CreateDelegate	23
5.12.2.4	CreateDelegate	23
5.12.2.5	CreateInstance	23
5.12.2.6	CreateInstance	23
5.12.2.7	GetPropertyValue	23
5.12.2.8	GetPropertyValue	24
5.12.2.9	SetPropertyValue	24
5.12.2.10	SetPropertyValue	24
5.13	Mufasa.MainWindow Class Reference	24
5.13.1	Detailed Description	24
5.13.2	Member Function Documentation	24
5.13.2.1	InitializeComponent	24
5.13.2.2	InitializeComponent	25
5.14	Mufasa.BackEnd.Designer.Overlap Class Reference	25
5.14.1	Detailed Description	25
5.14.2	Constructor & Destructor Documentation	25
5.14.2.1	Overlap	25
5.14.2.2	Overlap	26
5.14.3	Member Function Documentation	26
5.14.3.1	Dequeue	26
5.14.3.2	GetSimpleMeltingTemperature	26
5.14.3.3	Pop	26
5.14.3.4	ToString	26
5.14.4	Property Documentation	27
5.14.4.1	GeneSpecific	27
5.14.4.2	Overlapping	27
5.14.4.3	PrimerTemperature	27
5.14.4.4	SequenceString	27
5.14.4.5	Temperature	27
5.15	Mufasa.Pages.Reaction Class Reference	27
5.15.1	Detailed Description	28

5.15.2	Member Function Documentation	28
5.15.2.1	InitializeComponent	28
5.15.2.2	InitializeComponent	28
5.16	Mufasa.BackEnd.Exceptions.SequenceCountException Class Reference	28
5.16.1	Detailed Description	28
5.16.2	Constructor & Destructor Documentation	28
5.16.2.1	SequenceCountException	28
5.16.2.2	SequenceCountException	28
5.17	Mufasa.BackEnd.Exceptions.SequenceLengthException Class Reference	29
5.17.1	Detailed Description	29
5.17.2	Constructor & Destructor Documentation	29
5.17.2.1	SequenceLengthException	29
5.17.2.2	SequenceLengthException	29
5.17.2.3	SequenceLengthException	30
5.17.3	Property Documentation	30
5.17.3.1	Sequence	30
5.18	Mufasa.Pages.SettingsPage Class Reference	30
5.18.1	Detailed Description	30
5.18.2	Member Function Documentation	30
5.18.2.1	InitializeComponent	30
5.18.2.2	InitializeComponent	31
5.19	Mufasa.Pages.VolumeConverter Class Reference	31
5.19.1	Detailed Description	31
5.19.2	Member Function Documentation	31
5.19.2.1	Convert	31
5.19.2.2	ConvertBack	31

Chapter 1

Namespace Index

1.1 Packages

Here are the packages with brief descriptions (if available):

Mufasa	7
Mufasa.BackEnd	7
Mufasa.BackEnd.Designer	7
Mufasa.BackEnd.Exceptions	7
Mufasa.Pages	8
Mufasa.Pages.Settings	8
XamlGeneratedNamespace	8

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Application	
Mufasa.App	10
Mufasa.App	10
Mufasa.App	10
Mufasa.BackEnd.Designer.Designer	14
Mufasa.BackEnd.Designer.DesignerSettings	16
Exception	
Mufasa.BackEnd.Exceptions.FragmentNamingException	19
Mufasa.BackEnd.Exceptions.SequenceCountException	28
Mufasa.BackEnd.Exceptions.SequenceLengthException	29
Mufasa.BackEnd.Designer.Fragment	17
Mufasa.BackEnd.Designer.Construct	12
Mufasa.BackEnd.Designer.Overlap	25
Mufasa.Pages.FragmentViewModel	20
IComponentConnector	
Mufasa.MainWindow	24
Mufasa.MainWindow	24
Mufasa.Pages.Design	13
Mufasa.Pages.Design	13
Mufasa.Pages.Reaction	27
Mufasa.Pages.Reaction	27
Mufasa.Pages.Settings.About	9
Mufasa.Pages.Settings.About	9
Mufasa.Pages.Settings.Appearance	11
Mufasa.Pages.Settings.Appearance	11
Mufasa.Pages.SettingsPage	30
Mufasa.Pages.SettingsPage	30
IMultiValueConverter	
Mufasa.Pages.VolumeConverter	31
InternalTypeHelper	
XamlGeneratedNamespace.GeneratedInternalTypeHelper	22
XamlGeneratedNamespace.GeneratedInternalTypeHelper	22
ModernWindow	
Mufasa.MainWindow	24
Mufasa.MainWindow	24
Mufasa.MainWindow	24
NotifyPropertyChanged	
Mufasa.Pages.Settings.AppearanceViewModel	11

UserControl

Mufasa.Pages.Design	13
Mufasa.Pages.Design	13
Mufasa.Pages.Design	13
Mufasa.Pages.Reaction	27
Mufasa.Pages.Reaction	27
Mufasa.Pages.Reaction	27
Mufasa.Pages.Settings.About	9
Mufasa.Pages.Settings.About	9
Mufasa.Pages.Settings.About	9
Mufasa.Pages.Settings.Appearance	11
Mufasa.Pages.Settings.Appearance	11
Mufasa.Pages.Settings.Appearance	11
Mufasa.Pages.SettingsPage	30
Mufasa.Pages.SettingsPage	30

UserControl

Mufasa.Pages.SettingsPage	30
-------------------------------------	----

Chapter 3

Class Index

3.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Mufasa.Pages.Settings>About	
About	9
Mufasa.App	
Interaction logic for App.xaml	10
Mufasa.Pages.Settings.Appearance	
Appearance	11
Mufasa.Pages.Settings.AppearanceViewModel	
A simple view model for configuring theme, font and accent colors. Based on Modern UI for WPF.	11
Mufasa.BackEnd.Designer.Construct	12
Mufasa.Pages.Design	
Design	13
Mufasa.BackEnd.Designer.Designer	14
Mufasa.BackEnd.Designer.DesignerSettings	16
Mufasa.BackEnd.Designer.Fragment	17
Mufasa.BackEnd.Exceptions.FragmentNamingException	19
Mufasa.Pages.FragmentViewModel	
Wraps Fragment class and provide notification of changes	20
XamlGeneratedNamespace.GeneratedInternalTypeHelper	
GeneratedInternalTypeHelper	22
Mufasa.MainWindow	
Interaction logic for MainWindow.xaml	24
Mufasa.BackEnd.Designer.Overlap	25
Mufasa.Pages.Reaction	
Reaction	27
Mufasa.BackEnd.Exceptions.SequenceCountException	28
Mufasa.BackEnd.Exceptions.SequenceLengthException	29
Mufasa.Pages.SettingsPage	
SettingsPage	30
Mufasa.Pages.VolumeConverter	31

Chapter 4

Namespace Documentation

4.1 Package Mufasa

Namespaces

- package [BackEnd](#)
- package [Pages](#)

Classes

- class [App](#)
Interaction logic for App.xaml
- class [MainWindow](#)
Interaction logic for MainWindow.xaml

4.2 Package Mufasa.BackEnd

Namespaces

- package [Designer](#)
- package [Exceptions](#)

4.3 Package Mufasa.BackEnd.Designer

Classes

- class [Construct](#)
- class [Designer](#)
- class [DesignerSettings](#)
- class [Fragment](#)
- class [Overlap](#)

4.4 Package Mufasa.BackEnd.Exceptions

Classes

- class [FragmentNamingException](#)
- class [SequenceCountException](#)
- class [SequenceLengthException](#)

4.5 Package Mufasa.Pages

Namespaces

- package [Settings](#)

Classes

- class [Design](#)
Design
- class [FragmentViewModel](#)
Wraps Fragment class and provide notification of changes
- class [Reaction](#)
Reaction
- class [SettingsPage](#)
SettingsPage
- class [VolumeConverter](#)

4.6 Package Mufasa.Pages.Settings

Classes

- class [About](#)
About
- class [Appearance](#)
Appearance
- class [AppearanceViewModel](#)
A simple view model for configuring theme, font and accent colors. Based on Modern UI for WPF.

4.7 Package XamlGeneratedNamespace

Classes

- class [GeneratedInternalTypeHelper](#)
GeneratedInternalTypeHelper

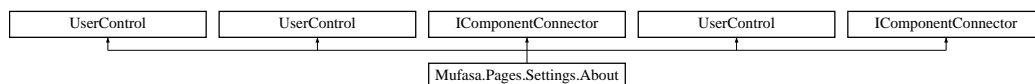
Chapter 5

Class Documentation

5.1 Mufasa.Pages.Settings.About Class Reference

About

Inheritance diagram for Mufasa.Pages.Settings.About:



Public Member Functions

- void [InitializeComponent](#) ()
InitializeComponent
- void [InitializeComponent](#) ()
InitializeComponent

5.1.1 Detailed Description

About

Interaction logic for About.xaml

5.1.2 Member Function Documentation

5.1.2.1 void Mufasa.Pages.Settings.About.InitializeComponent ()

InitializeComponent

5.1.2.2 void Mufasa.Pages.Settings.About.InitializeComponent ()

InitializeComponent

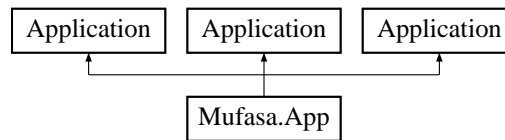
The documentation for this class was generated from the following files:

- obj/Debug/Pages/Settings/About.g.cs
- obj/Debug/Pages/Settings/About.g.i.cs
- Pages/Settings/About.xaml.cs

5.2 Mufasa.App Class Reference

Interaction logic for App.xaml

Inheritance diagram for Mufasa.App:



Public Member Functions

- void [InitializeComponent](#) ()
InitializeComponent
- void [InitializeComponent](#) ()
InitializeComponent

Static Public Member Functions

- static void [Main](#) ()
Application Entry Point.
- static void [Main](#) ()
Application Entry Point.

5.2.1 Detailed Description

Interaction logic for App.xaml

[App](#)

5.2.2 Member Function Documentation

5.2.2.1 void Mufasa.App.InitializeComponent ()

InitializeComponent

5.2.2.2 void Mufasa.App.InitializeComponent ()

InitializeComponent

5.2.2.3 static void Mufasa.App.Main () [static]

Application Entry Point.

5.2.2.4 static void Mufasa.App.Main () [static]

Application Entry Point.

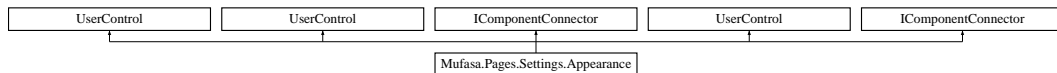
The documentation for this class was generated from the following files:

- App.xaml.cs
- obj/Debug/App.g.cs
- obj/Debug/App.g.i.cs

5.3 Mufasa.Pages.Settings.Appearance Class Reference

Appearance

Inheritance diagram for Mufasa.Pages.Settings.Appearance:



Public Member Functions

- void [InitializeComponent](#) ()
InitializeComponent
- void [InitializeComponent](#) ()
InitializeComponent

5.3.1 Detailed Description

Appearance

Interaction logic for Appearance.xaml

5.3.2 Member Function Documentation

5.3.2.1 void Mufasa.Pages.Settings.Appearance.InitializeComponent ()

InitializeComponent

5.3.2.2 void Mufasa.Pages.Settings.Appearance.InitializeComponent ()

InitializeComponent

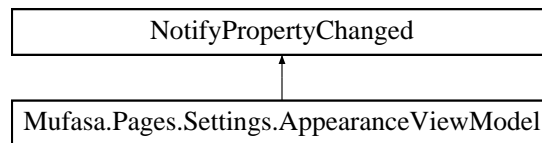
The documentation for this class was generated from the following files:

- obj/Debug/Pages/Settings/Appearance.g.cs
- obj/Debug/Pages/Settings/Appearance.g.i.cs
- Pages/Settings/Appearance.xaml.cs

5.4 Mufasa.Pages.Settings.AppearanceViewModel Class Reference

A simple view model for configuring theme, font and accent colors. Based on Modern UI for WPF.

Inheritance diagram for Mufasa.Pages.Settings.AppearanceViewModel:



Properties

- LinkCollection **Themes** [get]
- string[] **FontSizes** [get]
- Color[] **AccentColors** [get]
- Link **SelectedTheme** [get, set]
- string **SelectedFontSize** [get, set]
- Color **SelectedAccentColor** [get, set]

5.4.1 Detailed Description

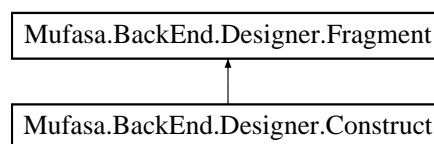
A simple view model for configuring theme, font and accent colors. Based on Modern UI for WPF.

The documentation for this class was generated from the following file:

- Pages/Settings/AppearanceViewModel.cs

5.5 Mufasa.BackEnd.Designer.Construct Class Reference

Inheritance diagram for Mufasa.BackEnd.Designer.Construct:



Public Member Functions

- [Construct](#) (ObservableCollection< [Fragment](#) > fragList, [DesignerSettings](#) settings)
Construct constructor.
- [Construct](#) (ObservableCollection< String > nameList, Dictionary< String, [Fragment](#) > fragDict, [DesignerSettings](#) settings)
Construct constructor.
- void [SaveAsBio](#) (String path)
Save in one of .NET Bio supported formats like fasta or GenBank.

Properties

- [DesignerSettings](#) [Settings](#) [get, set]
- List< [Overlap](#) > [Overlaps](#) [get, set]

5.5.1 Detailed Description

Genetic construct class.

5.5.2 Constructor & Destructor Documentation

5.5.2.1 Mufasa.BackEnd.Designer.Construct.Construct (ObservableCollection< Fragment > fragList, DesignerSettings settings)

[Construct](#) constructor.

Parameters

<i>fragList</i>	Fragment list.
-----------------	--------------------------------

5.5.2.2 Mufasa.BackEnd.Designer.Construct.Construct (ObservableCollection< String > nameList, Dictionary< String, Fragment > fragDict, DesignerSettings settings)

[Construct](#) constructor.

Parameters

<i>fragDict</i>	Fragment Dictionary.
<i>nameList</i>	Fragment names. Dictionary keys.

5.5.3 Member Function Documentation

5.5.3.1 void Mufasa.BackEnd.Designer.Construct.SaveAsBio (String path)

Save in one of .NET Bio supported formats like fasta or GenBank.

Parameters

<i>path</i>	Filename.
-------------	-----------

5.5.4 Property Documentation

5.5.4.1 List<Overlap> Mufasa.BackEnd.Designer.Construct.Overlaps [get], [set]

Generated overlaps collection.

5.5.4.2 DesignerSettings Mufasa.BackEnd.Designer.Construct.Settings [get], [set]

[Designer](#) settings.

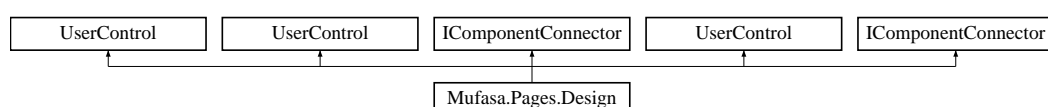
The documentation for this class was generated from the following file:

- BackEnd/Designer/Construct.cs

5.6 Mufasa.Pages.Design Class Reference

[Design](#)

Inheritance diagram for Mufasa.Pages.Design:



Public Member Functions

- void [InitializeComponent](#) ()
InitializeComponent
- void [InitializeComponent](#) ()
InitializeComponent

5.6.1 Detailed Description

Design

Interaction logic for Design.xaml

5.6.2 Member Function Documentation

5.6.2.1 void Mufasa.Pages.Design.InitializeComponent ()

InitializeComponent

5.6.2.2 void Mufasa.Pages.Design.InitializeComponent ()

InitializeComponent

The documentation for this class was generated from the following files:

- obj/Debug/Pages/Design.g.cs
- obj/Debug/Pages/Design.g.i.cs
- Pages/Design.xaml.cs

5.7 Mufasa.BackEnd.Designer.Designer Class Reference

Public Member Functions

- [Designer](#) ()
Designer constructor.
- void [AddFragment](#) (String file, String name)
Adds [Fragment](#) name if valid.
- void [AddBrickFromRegistry](#) (String url, String sequenceString, String name)
Adds a BioBrick name if valid.
- void [AddConstructionFragment](#) (String fragmentName)
Adds a fragment to construction dictionary.
- void **openProject** (String file)

Properties

- Dictionary< String, [Fragment](#) > [FragmentDict](#) [get, set]
- ObservableCollection< String > [ConstructionList](#) [get, set]
- [DesignerSettings Settings](#) [get, set]

5.7.1 Detailed Description

[Construct](#) designer class.

5.7.2 Constructor & Destructor Documentation

5.7.2.1 Mufasa.BackEnd.Designer.Designer.Designer ()

[Designer](#) constructor.

5.7.3 Member Function Documentation

5.7.3.1 void Mufasa.BackEnd.Designer.Designer.AddBrickFromRegistry (String url, String sequenceString, String name)

Adds a BioBrick *name* if valid.

Parameters

<i>url</i>	URL to a BioBrick in .fasta format.
<i>name</i>	BioBrock name.

5.7.3.2 void Mufasa.BackEnd.Designer.Designer.AddConstructionFragment (String fragmentName)

Adds a fragment to construction dictionary.

Parameters

<i>fragment</i>	Name of the fragment to add.
-----------------	------------------------------

5.7.3.3 void Mufasa.BackEnd.Designer.Designer.AddFragment (String file, String name)

Adds [Fragment](#) *name* if valid.

Parameters

<i>file</i>	Fragment filename
<i>name</i>	Fragment name

5.7.4 Property Documentation

5.7.4.1 ObservableCollection<String> Mufasa.BackEnd.Designer.Designer.ConstructionList [get], [set]

Dictionary of construction fragments.

5.7.4.2 Dictionary<String,Fragment> Mufasa.BackEnd.Designer.Designer.FragmentDict [get], [set]

Dictionary of pooled fragments.

5.7.4.3 DesignerSettings Mufasa.BackEnd.Designer.Designer.Settings [get], [set]

[Designer](#) settings.

The documentation for this class was generated from the following file:

- BackEnd/Designer/Designer.cs

5.8 Mufasa.BackEnd.Designer.DesignerSettings Class Reference

Public Member Functions

- [DesignerSettings](#) ()
Designer settings constructor.

Properties

- int [MinGeneSpecificLen](#) [get, set]
- int [MaxGeneSpecificLen](#) [get, set]
- int [MinOverlapLen](#) [get, set]
- int [MaxOverlapLen](#) [get, set]
- int [ReactionVolume](#) [get, set]
- int [TargetOverlapTm](#) [get, set]
- int [TargetPrimerTm](#) [get, set]

5.8.1 Detailed Description

Design settings class.

5.8.2 Constructor & Destructor Documentation

5.8.2.1 Mufasa.BackEnd.Designer.DesignerSettings.DesignerSettings ()

[Designer](#) settings constructor.

5.8.3 Property Documentation

5.8.3.1 int Mufasa.BackEnd.Designer.DesignerSettings.MaxGeneSpecificLen [get], [set]

Maximal length of the gene-specific part of a primer.

5.8.3.2 int Mufasa.BackEnd.Designer.DesignerSettings.MaxOverlapLen [get], [set]

Maximal length of the overlapping part of a primer.

5.8.3.3 int Mufasa.BackEnd.Designer.DesignerSettings.MinGeneSpecificLen [get], [set]

Minimal length of the gene-specific part of a primer.

5.8.3.4 int Mufasa.BackEnd.Designer.DesignerSettings.MinOverlapLen [get], [set]

Minimal length of the overlapping part of a primer.

5.8.3.5 int Mufasa.BackEnd.Designer.DesignerSettings.ReactionVolume [get], [set]

CPEC/Gibson assembly reaction volume.

5.8.3.6 `int Mufasa.BackEnd.Designer.DesignerSettings.TargetOverlapTm` `[get], [set]`

Target overlaps melting temperature.

5.8.3.7 `int Mufasa.BackEnd.Designer.DesignerSettings.TargetPrimerTm` `[get], [set]`

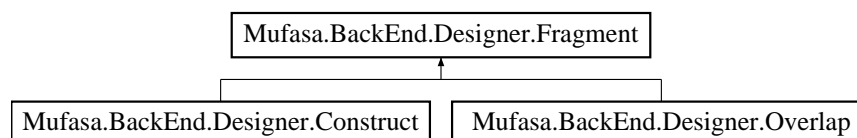
Target primer melting temperature.

The documentation for this class was generated from the following file:

- `BackEnd/Designer/DesignerSettings.cs`

5.9 Mufasa.BackEnd.Designer.Fragment Class Reference

Inheritance diagram for `Mufasa.BackEnd.Designer.Fragment`:



Public Member Functions

- `Fragment` (String source, String name, ISequence sequence, bool vector=false)
Fragment constructor.
- `Fragment` ()
Fragment constructor.
- `Fragment` (Fragment frag)
Copying Fragment constructor.
- string `GetString` ()
Returns full fragment sequence as a string. Based on .NET Bio Programming Guide.
- string `GetReverseComplementString` ()
Returns full fragment reverse complement sequence as a string.

Properties

- String `Source` `[get, set]`
- String `Name` `[get, set]`
Name of the fragment.
- ISequence `Sequence` `[get, set]`
Fragment sequence.
- double `Concentration` `[get, set]`
Concentration.
- long `Length` `[get, set]`
Length.
- bool `IsVector` `[get, set]`
True if this is a vector sequence.
- double `Volume` `[get, set]`
Reaction volume.

5.9.1 Detailed Description

DNA fragment class.

5.9.2 Constructor & Destructor Documentation

5.9.2.1 `Mufasa.BackEnd.Designer.Fragment.Fragment (String source, String name, ISequence sequence, bool vector = false)`

[Fragment](#) constructor.

Parameters

<i>source</i>	Filename or URL.
<i>name</i>	Fragment name.

5.9.2.2 `Mufasa.BackEnd.Designer.Fragment.Fragment ()`

[Fragment](#) constructor.

5.9.2.3 `Mufasa.BackEnd.Designer.Fragment.Fragment (Fragment frag)`

Copying [Fragment](#) constructor.

5.9.3 Member Function Documentation

5.9.3.1 `string Mufasa.BackEnd.Designer.Fragment.GetReverseComplementString ()`

Returns full fragment reverse complement sequence as a string.

Returns

Reverse complement sequence string.

5.9.3.2 `string Mufasa.BackEnd.Designer.Fragment.GetString ()`

Returns full fragment sequence as a string. Based on .NET Bio Programming Guide.

Returns

Sequence string.

5.9.4 Property Documentation

5.9.4.1 `double Mufasa.BackEnd.Designer.Fragment.Concentration [get], [set]`

Concentration.

5.9.4.2 `bool Mufasa.BackEnd.Designer.Fragment.IsVector [get], [set]`

True if this is a vector sequence.

5.9.4.3 `long Mufasa.BackEnd.Designer.Fragment.Length` `[get]`, `[set]`

Length.

5.9.4.4 `String Mufasa.BackEnd.Designer.Fragment.Name` `[get]`, `[set]`

Name of the fragment.

5.9.4.5 `ISequence Mufasa.BackEnd.Designer.Fragment.Sequence` `[get]`, `[set]`

[Fragment](#) sequence.

5.9.4.6 `String Mufasa.BackEnd.Designer.Fragment.Source` `[get]`, `[set]`

Path to the file or url containing the fragment.

5.9.4.7 `double Mufasa.BackEnd.Designer.Fragment.Volume` `[get]`, `[set]`

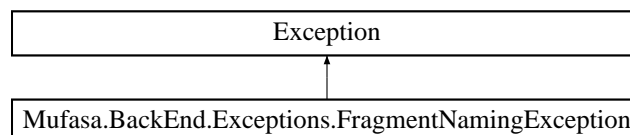
Reaction volume.

The documentation for this class was generated from the following file:

- BackEnd/Designer/Fragment.cs

5.10 Mufasa.BackEnd.Exceptions.FragmentNamingException Class Reference

Inheritance diagram for Mufasa.BackEnd.Exceptions.FragmentNamingException:



Public Member Functions

- [FragmentNamingException](#) ()
FragmentNamingException constructor.
- [FragmentNamingException](#) (string message)
FragmentNamingException constructor.

5.10.1 Detailed Description

Exception thrown if a fragment name is invalid. BackEnd.Designer.Designer.cs

5.10.2 Constructor & Destructor Documentation

5.10.2.1 `Mufasa.BackEnd.Exceptions.FragmentNamingException.FragmentNamingException ()`

[FragmentNamingException](#) constructor.

5.10.2.2 Mufasa.BackEnd.Exceptions.FragmentNamingException.FragmentNamingException (string message)

[FragmentNamingException](#) constructor.

Parameters

<i>message</i>	Message to send.
----------------	------------------

The documentation for this class was generated from the following file:

- BackEnd/Exceptions/FragmentNamingException.cs

5.11 Mufasa.Pages.FragmentViewModel Class Reference

Wraps Fragment class and provide notification of changes

Public Member Functions

- [FragmentViewModel](#) ()
FragmentViewModel constructor.
- [FragmentViewModel](#) (Fragment m)
FragmentViewModel constructor.

Protected Member Functions

- virtual void [OnPropertyChanged](#) (string propertyName)
PropertyChanged trigger.

Properties

- [Fragment Model](#) [get]
- double [Concentration](#) [get, set]
Concentration.
- double [Volume](#) [get, set]
Volume.
- bool [IsVector](#) [get, set]
True if a vector fragment.
- long [Length](#) [get, set]
Fragment length.
- String [Source](#) [get, set]
- String [Name](#) [get, set]
Name of the fragment.
- ISequence [Sequence](#) [get, set]
Fragment sequence.

Events

- PropertyChangedEventHandler [PropertyChanged](#)
PropertyChanged event.

5.11.1 Detailed Description

Wraps Fragment class and provide notification of changes

5.11.2 Constructor & Destructor Documentation

5.11.2.1 Mufasa.Pages.FragmentViewModel.FragmentViewModel ()

[FragmentViewModel](#) constructor.

5.11.2.2 Mufasa.Pages.FragmentViewModel.FragmentViewModel (**Fragment** *m*)

[FragmentViewModel](#) constructor.

Parameters

<i>m</i>	Fragment model.
----------	-----------------

5.11.3 Member Function Documentation

5.11.3.1 virtual void Mufasa.Pages.FragmentViewModel.OnPropertyChanged (string *propertyName*) [protected], [virtual]

PropertyChanged trigger.

Parameters

<i>propertyName</i>	
---------------------	--

5.11.4 Property Documentation

5.11.4.1 double Mufasa.Pages.FragmentViewModel.Concentration [get], [set]

Concentration.

5.11.4.2 bool Mufasa.Pages.FragmentViewModel.IsVector [get], [set]

True if a vector fragment.

5.11.4.3 long Mufasa.Pages.FragmentViewModel.Length [get], [set]

Fragment length.

5.11.4.4 **Fragment** Mufasa.Pages.FragmentViewModel.Model [get]

Fragment model.

5.11.4.5 String Mufasa.Pages.FragmentViewModel.Name [get], [set]

Name of the fragment.

5.11.4.6 `ISequence Mufasa.Pages.FragmentViewModel.Sequence` [get], [set]

Fragment sequence.

5.11.4.7 `String Mufasa.Pages.FragmentViewModel.Source` [get], [set]

Path to the file or url containing the fragment.

5.11.4.8 `double Mufasa.Pages.FragmentViewModel.Volume` [get], [set]

Volume.

5.11.5 Event Documentation

5.11.5.1 `PropertyChangedEventHandler Mufasa.Pages.FragmentViewModel.PropertyChanged`

PropertyChanged event.

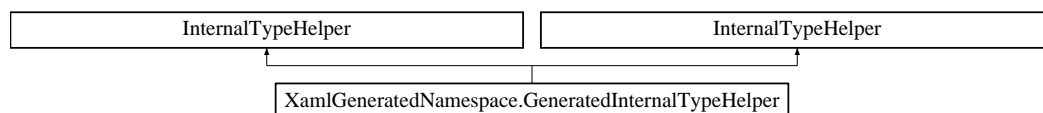
The documentation for this class was generated from the following file:

- Pages/FragmentViewModel.cs

5.12 XamlGeneratedNamespace.GeneratedInternalTypeHelper Class Reference

[GeneratedInternalTypeHelper](#)

Inheritance diagram for XamlGeneratedNamespace.GeneratedInternalTypeHelper:



Protected Member Functions

- override object [CreateInstance](#) (System.Type type, System.Globalization.CultureInfo culture)
CreateInstance
- override object [GetPropertyValue](#) (System.Reflection.PropertyInfo propertyInfo, object target, System.Globalization.CultureInfo culture)
GetPropertyValue
- override void [SetPropertyValue](#) (System.Reflection.PropertyInfo propertyInfo, object target, object value, System.Globalization.CultureInfo culture)
SetPropertyValue
- override System.Delegate [CreateDelegate](#) (System.Type delegateType, object target, string handler)
CreateDelegate
- override void [AddEventHandler](#) (System.Reflection.EventInfo eventInfo, object target, System.Delegate handler)
AddEventHandler
- override object [CreateInstance](#) (System.Type type, System.Globalization.CultureInfo culture)
CreateInstance
- override object [GetPropertyValue](#) (System.Reflection.PropertyInfo propertyInfo, object target, System.Globalization.CultureInfo culture)

GetPropertyValue

- override void [SetPropertyValue](#) (System.Reflection.PropertyInfo propertyInfo, object target, object value, System.Globalization.CultureInfo culture)

SetPropertyValue

- override System.Delegate [CreateDelegate](#) (System.Type delegateType, object target, string handler)

CreateDelegate

- override void [AddEventHandler](#) (System.Reflection.EventInfo eventInfo, object target, System.Delegate handler)

AddEventHandler

5.12.1 Detailed Description

[GeneratedInternalTypeHelper](#)

5.12.2 Member Function Documentation

- 5.12.2.1 override void XamlGeneratedNamespace.GeneratedInternalTypeHelper.AddEventHandler (System.Reflection.EventInfo *eventInfo*, object *target*, System.Delegate *handler*) [protected]

AddEventHandler

- 5.12.2.2 override void XamlGeneratedNamespace.GeneratedInternalTypeHelper.AddEventHandler (System.Reflection.EventInfo *eventInfo*, object *target*, System.Delegate *handler*) [protected]

AddEventHandler

- 5.12.2.3 override System.Delegate XamlGeneratedNamespace.GeneratedInternalTypeHelper.CreateDelegate (System.Type *delegateType*, object *target*, string *handler*) [protected]

CreateDelegate

- 5.12.2.4 override System.Delegate XamlGeneratedNamespace.GeneratedInternalTypeHelper.CreateDelegate (System.Type *delegateType*, object *target*, string *handler*) [protected]

CreateDelegate

- 5.12.2.5 override object XamlGeneratedNamespace.GeneratedInternalTypeHelper.CreateInstance (System.Type *type*, System.Globalization.CultureInfo *culture*) [protected]

CreateInstance

- 5.12.2.6 override object XamlGeneratedNamespace.GeneratedInternalTypeHelper.CreateInstance (System.Type *type*, System.Globalization.CultureInfo *culture*) [protected]

CreateInstance

- 5.12.2.7 override object XamlGeneratedNamespace.GeneratedInternalTypeHelper.GetPropertyValue (System.Reflection.PropertyInfo *propertyInfo*, object *target*, System.Globalization.CultureInfo *culture*) [protected]

GetPropertyValue

5.12.2.8 **override** object XamlGeneratedNamespace.GeneratedInternalTypeHelper.GetValue (
 System.Reflection.PropertyInfo *propertyInfo*, object *target*, System.Globalization.CultureInfo *culture*)
 [protected]

GetValue

5.12.2.9 **override** void XamlGeneratedNamespace.GeneratedInternalTypeHelper.SetValue (
 System.Reflection.PropertyInfo *propertyInfo*, object *target*, object *value*, System.Globalization.CultureInfo *culture*)
 [protected]

SetValue

5.12.2.10 **override** void XamlGeneratedNamespace.GeneratedInternalTypeHelper.SetValue (
 System.Reflection.PropertyInfo *propertyInfo*, object *target*, object *value*, System.Globalization.CultureInfo *culture*)
 [protected]

SetValue

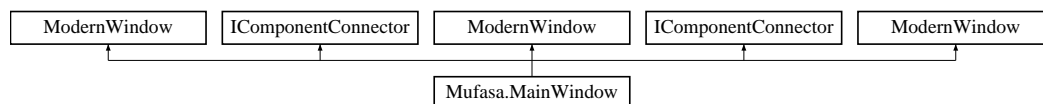
The documentation for this class was generated from the following files:

- obj/Debug/GeneratedInternalTypeHelper.g.cs
- obj/Debug/GeneratedInternalTypeHelper.g.i.cs

5.13 Mufasa.MainWindow Class Reference

Interaction logic for MainWindow.xaml

Inheritance diagram for Mufasa.MainWindow:



Public Member Functions

- void [InitializeComponent](#) ()
InitializeComponent
- void [InitializeComponent](#) ()
InitializeComponent

5.13.1 Detailed Description

Interaction logic for MainWindow.xaml

[MainWindow](#)

5.13.2 Member Function Documentation

5.13.2.1 void Mufasa.MainWindow.InitializeComponent ()

InitializeComponent

5.13.2.2 void Mufasa.MainWindow.InitializeComponent ()

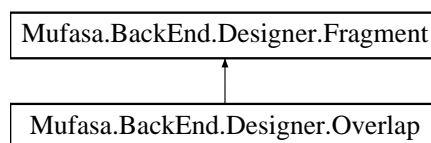
InitializeComponent

The documentation for this class was generated from the following files:

- MainWindow.xaml.cs
- obj/Debug/MainWindow.g.cs
- obj/Debug/MainWindow.g.i.cs

5.14 Mufasa.BackEnd.Designer.Overlap Class Reference

Inheritance diagram for Mufasa.BackEnd.Designer.Overlap:



Public Member Functions

- [Overlap](#) (String name, ISequence overlapping, ISequence geneSpecific)
Overlap constructor.
- [Overlap](#) (String name, ISequence primer)
Overlap constructor.
- override string [ToString](#) ()
Prints the overlap in a human-readable format.
- int [GetSimpleMeltingTemperature](#) (ISequence sequence)
Compute overlap's simple-style melting temperature.
- byte [Dequeue](#) (int minLen)
Cut the first nucleotide off.
- byte [Pop](#) (int minLen)
Cut the last nucleotide of.

Properties

- int [Temperature](#) [get, set]
- int [PrimerTemperature](#) [get, set]
- ISequence [GeneSpecific](#) [get, set]
- ISequence [Overlapping](#) [get, set]
- String [SequenceString](#) [get]

5.14.1 Detailed Description

[Overlap](#) class.

5.14.2 Constructor & Destructor Documentation

5.14.2.1 Mufasa.BackEnd.Designer.Overlap.Overlap (String name, ISequence overlapping, ISequence geneSpecific)

[Overlap](#) constructor.

Parameters

<i>name</i>	Overlap name.
<i>overlapping</i>	Overlap sequence.
<i>geneSpecific</i>	Gene specific sequence.

5.14.2.2 Mufasa.BackEnd.Designer.Overlap.Overlap (String *name*, ISequence *primer*)

[Overlap](#) constructor.

Parameters

<i>name</i>	Overlap name.
<i>primer</i>	Primer sequence.

5.14.3 Member Function Documentation

5.14.3.1 byte Mufasa.BackEnd.Designer.Overlap.Dequeue (int *minLen*)

Cut the first nucleotide off.

Parameters

<i>minLen</i>	Minimum overlap length.
---------------	-------------------------

Returns

First nucleotide or 255 if oligo too short to dequeue.

5.14.3.2 int Mufasa.BackEnd.Designer.Overlap.GetSimpleMeltingTemperature (ISequence *sequence*)

Compute overlap's simple-style melting temperature.

Returns

[Overlap](#)'s Tm.

5.14.3.3 byte Mufasa.BackEnd.Designer.Overlap.Pop (int *minLen*)

Cut the last nucleotide of.

Parameters

<i>minLen</i>	Minimum primer length.
---------------	------------------------

Returns

Last nucleotide or 255 if oligo too short to pop.

5.14.3.4 override string Mufasa.BackEnd.Designer.Overlap.ToString ()

Prints the overlap in a human-readable format.

Returns

String represanting the overlap.

5.14.4 Property Documentation

5.14.4.1 `ISequence Mufasa.BackEnd.Designer.Overlap.GeneSpecific` `[get]`, `[set]`

Gene specific subsequence.

5.14.4.2 `ISequence Mufasa.BackEnd.Designer.Overlap.Overlapping` `[get]`, `[set]`

Overlapping subsequence.

5.14.4.3 `int Mufasa.BackEnd.Designer.Overlap.PrimerTemperature` `[get]`, `[set]`

Primer's temperature.

5.14.4.4 `String Mufasa.BackEnd.Designer.Overlap.SequenceString` `[get]`

Sequence string.

5.14.4.5 `int Mufasa.BackEnd.Designer.Overlap.Temperature` `[get]`, `[set]`

[Overlap](#)'s temperature.

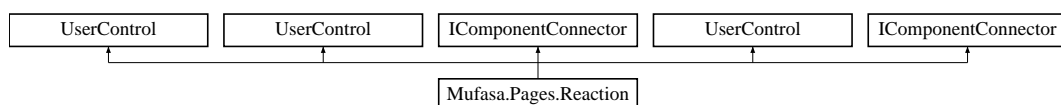
The documentation for this class was generated from the following file:

- BackEnd/Designer/Overlap.cs

5.15 Mufasa.Pages.Reaction Class Reference

Reaction

Inheritance diagram for Mufasa.Pages.Reaction:



Public Member Functions

- void [InitializeComponent](#) ()
InitializeComponent
- void [InitializeComponent](#) ()
InitializeComponent

Properties

- ListCollectionView **Fragments** `[get, set]`

5.15.1 Detailed Description

Reaction

Interaction logic for Reaction.xaml

5.15.2 Member Function Documentation

5.15.2.1 void Mufasa.Pages.Reaction.InitializeComponent ()

InitializeComponent

5.15.2.2 void Mufasa.Pages.Reaction.InitializeComponent ()

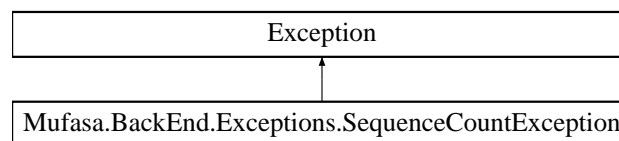
InitializeComponent

The documentation for this class was generated from the following files:

- obj/Debug/Pages/Reaction.g.cs
- obj/Debug/Pages/Reaction.g.i.cs
- Pages/Reaction.xaml.cs

5.16 Mufasa.BackEnd.Exceptions.SequenceCountException Class Reference

Inheritance diagram for Mufasa.BackEnd.Exceptions.SequenceCountException:



Public Member Functions

- [SequenceCountException](#) ()
SequenceCountException constructor.
- [SequenceCountException](#) (string message)
SequenceCountException constructor.

5.16.1 Detailed Description

Exception thrown if sequence count in a file is invalid. BackEnd.Designer.Designer.cs

5.16.2 Constructor & Destructor Documentation

5.16.2.1 Mufasa.BackEnd.Exceptions.SequenceCountException.SequenceCountException ()

[SequenceCountException](#) constructor.

5.16.2.2 Mufasa.BackEnd.Exceptions.SequenceCountException.SequenceCountException (string message)

[SequenceCountException](#) constructor.

Parameters

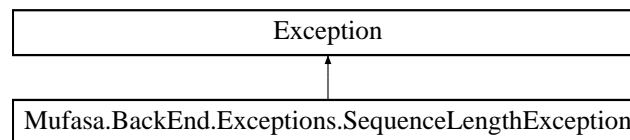
<i>message</i>	Message to send.
----------------	------------------

The documentation for this class was generated from the following file:

- BackEnd/Exceptions/SequenceCountException.cs

5.17 Mufasa.BackEnd.Exceptions.SequenceLengthException Class Reference

Inheritance diagram for Mufasa.BackEnd.Exceptions.SequenceLengthException:



Public Member Functions

- [SequenceLengthException](#) ()
SequenceLengthException constructor.
- [SequenceLengthException](#) (string message)
SequenceLengthException constructor.
- [SequenceLengthException](#) (string message, ISequence sequence)
SequenceLengthException constructor.

Properties

- ISequence [Sequence](#) [get, set]
Sequence in question.

5.17.1 Detailed Description

Exception thrown if sequence length in a file is invalid. BackEnd.Designer.Designer.cs

5.17.2 Constructor & Destructor Documentation

5.17.2.1 Mufasa.BackEnd.Exceptions.SequenceLengthException.SequenceLengthException ()

[SequenceLengthException](#) constructor.

5.17.2.2 Mufasa.BackEnd.Exceptions.SequenceLengthException.SequenceLengthException (string message)

[SequenceLengthException](#) constructor.

Parameters

<i>message</i>	Message to send.
----------------	------------------

5.17.2.3 Mufasa.BackEnd.Exceptions.SequenceLengthException.SequenceLengthException (string *message*, ISequence *sequence*)

[SequenceLengthException](#) constructor.

Parameters

<i>message</i>	Message to send.
<i>sequence</i>	Sequence in question.

5.17.3 Property Documentation

5.17.3.1 ISequence Mufasa.BackEnd.Exceptions.SequenceLengthException.Sequence [get], [set]

Sequence in question.

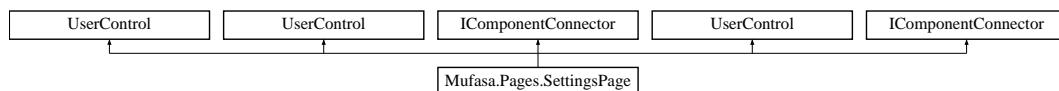
The documentation for this class was generated from the following file:

- BackEnd/Exceptions/SequenceLengthException.cs

5.18 Mufasa.Pages.SettingsPage Class Reference

[SettingsPage](#)

Inheritance diagram for Mufasa.Pages.SettingsPage:



Public Member Functions

- void [InitializeComponent](#) ()
InitializeComponent
- void [InitializeComponent](#) ()
InitializeComponent

5.18.1 Detailed Description

[SettingsPage](#)

Interaction logic for SettingsPage.xaml

5.18.2 Member Function Documentation

5.18.2.1 void Mufasa.Pages.SettingsPage.InitializeComponent ()

InitializeComponent

5.18.2.2 void Mufasa.Pages.SettingsPage.InitializeComponent ()

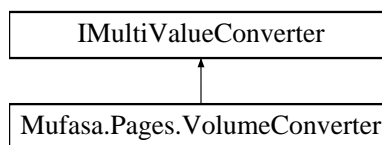
InitializeComponent

The documentation for this class was generated from the following files:

- obj/Debug/Pages/SettingsPage.g.cs
- obj/Debug/Pages/SettingsPage.g.i.cs
- Pages/SettingsPage.xaml.cs

5.19 Mufasa.Pages.VolumeConverter Class Reference

Inheritance diagram for Mufasa.Pages.VolumeConverter:



Public Member Functions

- object [Convert](#) (object[] values, Type targetType, object parameter, CultureInfo culture)
Volume conversion.
- object[] [ConvertBack](#) (object value, Type[] targetTypes, object parameter, System.Globalization.CultureInfo culture)
Not implemented.

5.19.1 Detailed Description

Volume converter class. Computes [Reaction](#) volumes from fragment lengths and concentrations.

5.19.2 Member Function Documentation

5.19.2.1 object Mufasa.Pages.VolumeConverter.Convert (object[] values, Type targetType, object parameter, CultureInfo culture)

Volume conversion.

Parameters

<i>values</i>	Values produced by the FragmentViewModel .
<i>targetType</i>	Target type.
<i>parameter</i>	Parameter.
<i>culture</i>	Culture info.

Returns

5.19.2.2 object [] Mufasa.Pages.VolumeConverter.ConvertBack (object value, Type[] targetTypes, object parameter, System.Globalization.CultureInfo culture)

Not implemented.

Parameters

<i>value</i>	Not implemented.
<i>targetTypes</i>	Not implemented.
<i>parameter</i>	Not implemented.
<i>culture</i>	Not implemented.

Returns

The documentation for this class was generated from the following file:

- Pages/VolumeConverter.cs