Mufasa

1.1

Generated by Doxygen 1.8.8

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  Settings

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Classes

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  GeneratedInternalTypeHelper

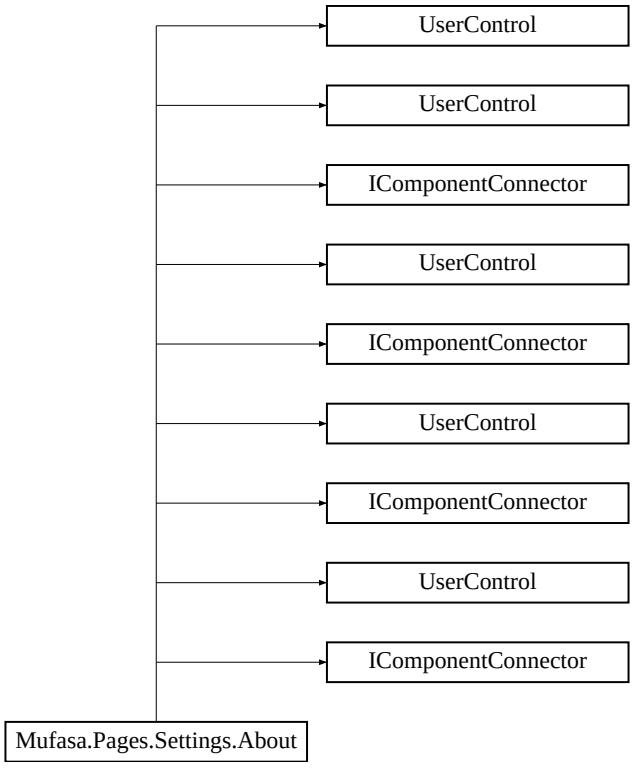
Chapter 5

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
- 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

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

InitializeComponent

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

InitializeComponent

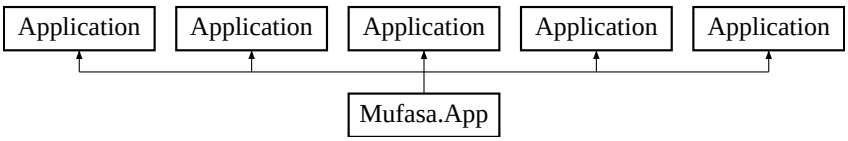
The documentation for this class was generated from the following files:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Settings/About.g.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Settings/About.g.i.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/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

- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent

Static Public Member Functions

- static void Main ()

  Application Entry Point.
- static void Main ()

  Application Entry Point.
- 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 void Mufasa.App.InitializeComponent ( )

InitializeComponent

5.2.2.4 void Mufasa.App.InitializeComponent ( )

InitializeComponent

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

Application Entry Point.

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

Application Entry Point.

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

Application Entry Point.

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

Application Entry Point.

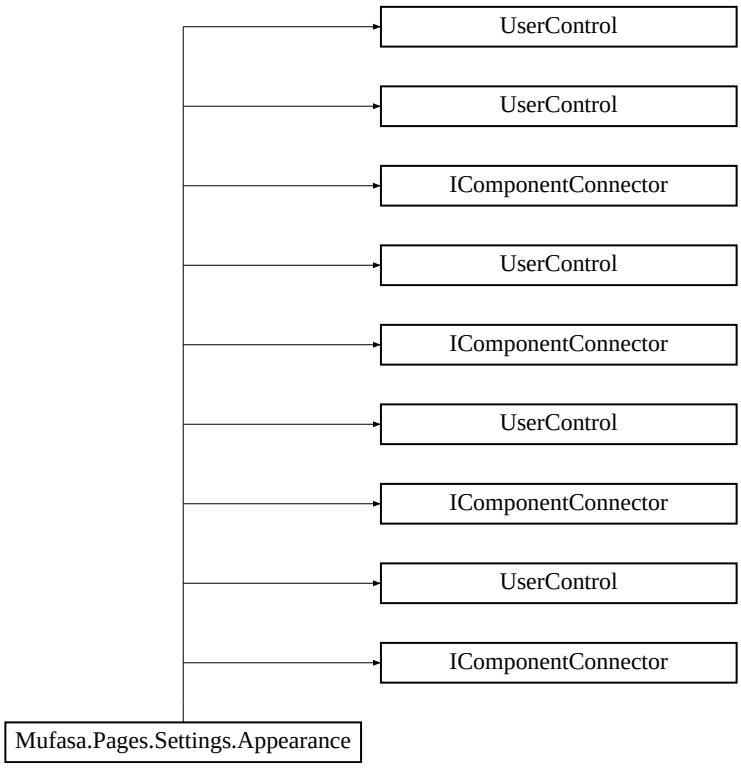
The documentation for this class was generated from the following files:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/App.xaml.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/App.g.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/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
- 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

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

InitializeComponent

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

InitializeComponent

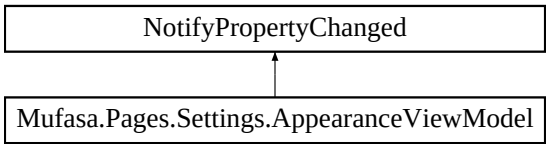
The documentation for this class was generated from the following files:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Settings/Appearance.g.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Settings/Appearance.g.i.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/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

- 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.

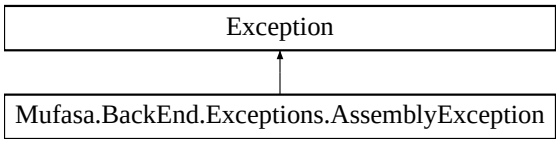
The documentation for this class was generated from the following file:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/Pages/Settings/AppearanceViewModel.cs

5.5 Mufasa.BackEnd.Exceptions.AssemblyException Class Reference

Assbly exception

Inheritance diagram for Mufasa.BackEnd.Exceptions.AssemblyException:



Public Member Functions

- AssemblyException ()

  AssemblyException constructor.
- AssemblyException (string message)

  AssemblyException constructor.

5.5.1 Detailed Description

Assbly exception

5.5.2 Constructor & Destructor Documentation

5.5.2.1 Mufasa.BackEnd.Exceptions.AssemblyException.AssemblyException ( )

AssemblyException constructor.

5.5.2.2 Mufasa.BackEnd.Exceptions.AssemblyException.AssemblyException (string *message*)

AssemblyException constructor.

Parameters

message	Message to send.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Exceptions/AssemblyException.cs

5.6 Mufasa.BackEnd.Lea.Chromosome Class Reference

Public Member Functions

- Chromosome (List< int > lengths_3, List< int > lengths_5, double targetTm)

  Chromosome constructor.
- Chromosome (Chromosome c)

  Chromosome copying constructor.
- **Chromosome** (List< Overlap > preoptimized, double targetTm)
- List< Overlap > ToOverlaps (List< Overlap > templates)

  Converts the chromosome to its corresponding overlap list.
- ScoreTotal Evaluate (List< Overlap > templates, DesignerSettings settings, bool ignoreHeterodimers)

  Evaluate the chromosome.

Properties

- List< Overlap > Overlaps `[get, set]`

  Overlap list.
- List< int > Lengths_3 `[get, set]`
- List< int > Lengths_5 `[get, set]`
- ScoreTotal Score `[get]`

5.6.1 Constructor & Destructor Documentation

5.6.1.1 Mufasa.BackEnd.Lea.Chromosome.Chromosome (List< int > *lengths_3*, List< int > *lengths_5*, double *targetTm*)

Chromosome constructor.

Parameters

lengths_3	List of 3' lengths.
lengths_5	List of 5' lengths.

5.6.1.2 Mufasa.BackEnd.Lea.Chromosome.Chromosome (Chromosome *c*)

Chromosome copying constructor.

Parameters

c	

5.6.2 Member Function Documentation

5.6.2.1 ScoreTotal Mufasa.BackEnd.Lea.Chromosome.Evaluate (List< Overlap > *templates*, DesignerSettings *settings*, bool *ignoreHeterodimers*)

Evaluate the chromosome.

Parameters

templates	List of overlap templates.
settings	Designer settings.

Returns

Total score of the chromosome.

5.6.2.2 List<Overlap> Mufasa.BackEnd.Lea.Chromosome.ToOverlaps (List< Overlap > *templates*)

Converts the chromosome to its corresponding overlap list.

Parameters

templates	List of overlap templates.

Returns

List of overlaps represented by this chromosome.

5.6.3 Property Documentation

5.6.3.1 List<int> Mufasa.BackEnd.Lea.Chromosome.Lengths_3 [get], [set]

List of lengths of 3' (overhang) parts of the overlaps./>

5.6.3.2 List<int> Mufasa.BackEnd.Lea.Chromosome.Lengths_5 [get], [set]

List of lengths of 3' (overhang) parts of the overlaps./>

5.6.3.3 List<Overlap> Mufasa.BackEnd.Lea.Chromosome.Overlaps [get], [set]

Overlap list.

5.6.3.4 ScoreTotal Mufasa.BackEnd.Lea.Chromosome.Score [get]

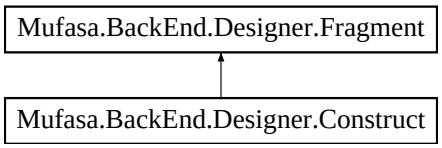
Score of the chromosome./>

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Lea/Chromosome.cs

5.7 Mufasa.BackEnd.Designer.Construct Class Reference

Inheritance diagram for Mufasa.BackEnd.Designer.Construct:



Public Member Functions

- Construct ()

  Empty Construct constructor.
- Construct (List< Overlap > overlaps, ISequence sequence, DesignerSettings settings)

  Pre-optimized Construct constructor.
- Construct (ObservableCollection< Fragment > fragList, DesignerSettings settings)

  Construct constructor.
- Construct (ObservableCollection< String > constructionList, Dictionary< String, Fragment > fragDict, DesignerSettings settings)

  Construct constructor.

- bool IsEmpty ()

  Checks if the construct is empty.
- void SaveAsBio (String path)

  Save in one of .NET Bio supported formats like fasta or GenBank.
- ScoreTotal Evaluate (bool ignoreHeterodimers=false)

  Compute construct score.

Properties

- ScoreTotal Score `[get, set]`
- DesignerSettings Settings `[get, set]`
- List< Overlap > Overlaps `[get, set]`

5.7.1 Detailed Description

Genetic construct class.

5.7.2 Constructor & Destructor Documentation

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

Empty Construct constructor.

Parameters

fragList	Fragment list.

5.7.2.2 Mufasa.BackEnd.Designer.Construct.Construct (List< **Overlap** > *overlaps*, ISequence *sequence*, **DesignerSettings** *settings*)

Pre-optimized Construct constructor.

Parameters

fragList	Fragment list.

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

Construct constructor.

Parameters

fragList	Fragment list.

5.7.2.4 Mufasa.BackEnd.Designer.Construct.Construct (ObservableCollection< String > *constructionList*, Dictionary< String, **Fragment** > *fragDict*, **DesignerSettings** *settings*)

Construct constructor.

Parameters

fragDict	Fragment Dictionary.
constructionList	Fragment names. Dictionary keys.

5.7.3 Member Function Documentation

5.7.3.1 ScoreTotal Mufasa.BackEnd.Designer.Construct.Evaluate (bool *ignoreHeterodimers* = `false`)

Compute construct score.

Returns

Total construct score.

5.7.3.2 bool Mufasa.BackEnd.Designer.Construct.IsEmpty ( )

Checks if the construct is empty.

5.7.3.3 void Mufasa.BackEnd.Designer.Construct.SaveAsBio (String *path*)

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

Parameters

path	Filename.

5.7.4 Property Documentation

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

Generated overlaps collection.

5.7.4.2 ScoreTotal Mufasa.BackEnd.Designer.Construct.Score `[get],[set]`

Total construct score.

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

Designer settings.

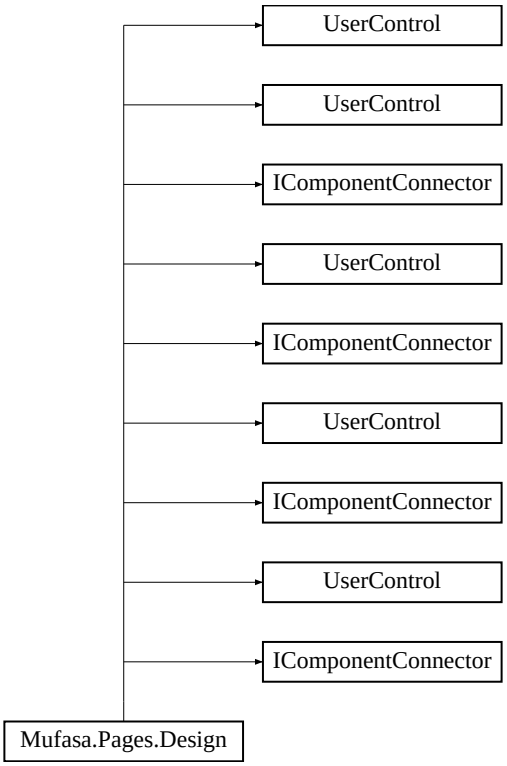
The documentation for this class was generated from the following file:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Designer/Construct.cs

5.8 Mufasa.Pages.Design Class Reference

Design

Inheritance diagram for Mufasa.Pages.Design:



Public Member Functions

- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent

5.8.1 Detailed Description

Design

Interaction logic for Design.xaml

5.8.2 Member Function Documentation

5.8.2.1 void Mufasa.Pages.Design.InitializeComponent ( )

InitializeComponent

5.8.2.2 void Mufasa.Pages.Design.InitializeComponent ( )

InitializeComponent

5.8.2.3 void Mufasa.Pages.Design.InitializeComponent ( )

InitializeComponent

5.8.2.4 void Mufasa.Pages.Design.InitializeComponent ( )

InitializeComponent

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Design.g.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Design.g.i.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/Pages/Design.xaml.cs

5.9 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)

Public Attributes

- const String **VectorLabel** = "vect."

Properties

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

5.9.1 Detailed Description

Construct designer class.

5.9.2 Constructor & Destructor Documentation

5.9.2.1 Mufasa.BackEnd.Designer.Designer.Designer ( )

Designer constructor.

5.9.3 Member Function Documentation

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

Adds a BioBrick *name* if valid.

Parameters

url	URL to a BioBrick in .fasta format.
name	BioBrock name.

5.9.3.2 void Mufasa.BackEnd.Designer.Designer.AddConstructionFragment (String *fragmentName*)

Adds a fragment to construction dictionary.

Parameters

fragment	Name of the fragment to add.

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

Adds Fragment *name* if valid.

Parameters

file	Fragment filename
name	Fragment name

5.9.4 Property Documentation

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

Dictionary of construction fragments.

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

Dictionary of pooled fragments.

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

Designer settings.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Designer/Designer.cs

5.10 Mufasa.BackEnd.Designer.DesignerSettings Class Reference

Public Member Functions

- DesignerSettings ()
  Designer settings constructor.

Public Attributes

- TmThalSettings TmThalSettings
  TmThal settings
- LeaSettings LeaSettings
  Lea settings

Properties

- String TmThalParamPath [get, set]
- bool UseNaive [get, set]
- int MinLen_3 [get, set]
- int MaxLen_3 [get, set]
- int MinLen_5 [get, set]
- int MaxLen_5 [get, set]
- double ReactionVolume [get, set]
- double TargetTm [get, set]
- double MaxTh [get, set]
- double MaxTd [get, set]

5.10.1 Detailed Description

Design settings class.

5.10.2 Constructor & Destructor Documentation

5.10.2.1 Mufasa.BackEnd.Designer.DesignerSettings.DesignerSettings ( )

Designer settings constructor.

5.10.3 Member Data Documentation

5.10.3.1 LeaSettings Mufasa.BackEnd.Designer.DesignerSettings.LeaSettings

Lea settings

5.10.3.2 TmThalSettings Mufasa.BackEnd.Designer.DesignerSettings.TmThalSettings

TmThal settings

5.10.4 Property Documentation

5.10.4.1 int Mufasa.BackEnd.Designer.DesignerSettings.MaxLen_3 [get],[set]

Maximal length of the 3' ("gene-specific") part of an overlap.

5.10.4.2 int Mufasa.BackEnd.Designer.DesignerSettings.MaxLen_5 [get],[set]

Maximal length of the 5' ("overhang") part of an overlap.

5.10.4.3 double Mufasa.BackEnd.Designer.DesignerSettings.MaxTd [get],[set]

Max duplex melting temperature.

5.10.4.4 double Mufasa.BackEnd.Designer.DesignerSettings.MaxTh [get],[set]

Max hairpin melting temperature.

5.10.4.5 int Mufasa.BackEnd.Designer.DesignerSettings.MinLen_3 [get], [set]

Minimal length of the 3' ("gene-specific") part of an overlap.

5.10.4.6 int Mufasa.BackEnd.Designer.DesignerSettings.MinLen_5 [get], [set]

Minimal length of the 5' ("overhang") part of an overlap.

5.10.4.7 double Mufasa.BackEnd.Designer.DesignerSettings.ReactionVolume [get], [set]

CPEC/Gibson assembly reaction volume.

5.10.4.8 double Mufasa.BackEnd.Designer.DesignerSettings.TargetTm [get], [set]

Target overlap melting temperature.

5.10.4.9 String Mufasa.BackEnd.Designer.DesignerSettings.TmThalParamPath [get], [set]

Path to Primer3's thermodynamic parameters folder.

5.10.4.10 bool Mufasa.BackEnd.Designer.DesignerSettings.UseNaive [get], [set]

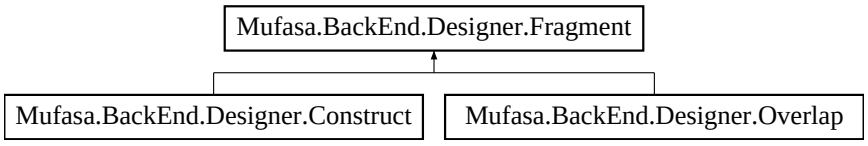
Use the naïve-greedy algorithm.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Designer/DesignerSettings.cs

5.11 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]

  Fragment sample volume.
- double ReactionVolume [get, set]

  Reaction volume.

5.11.1 Detailed Description

DNA fragment class.

5.11.2 Constructor & Destructor Documentation

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

Fragment constructor.

Parameters

source	Filename or URL.
name	Fragment name.

5.11.2.2 Mufasa.BackEnd.Designer.Fragment.Fragment ( )

Fragment constructor.

5.11.2.3 Mufasa.BackEnd.Designer.Fragment.Fragment (Fragment *frag*)

Copying Fragment constructor.

5.11.3 Member Function Documentation

5.11.3.1 string Mufasa.BackEnd.Designer.Fragment.GetReverseComplementString ( )

Returns full fragment reverse complement sequence as a string.

Returns

Reverse complement sequence string.

5.11.3.2 string Mufasa.BackEnd.Designer.Fragment.GetString ( )

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

Returns

Sequence string.

5.11.4 Property Documentation

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

Concentration.

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

True if this is a vector sequence.

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

Length.

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

Name of the fragment.

5.11.4.5 double Mufasa.BackEnd.Designer.Fragment.ReactionVolume [get], [set]

Reaction volume.

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

Fragment sequence.

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

Path to the file or url containing the fragment.

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

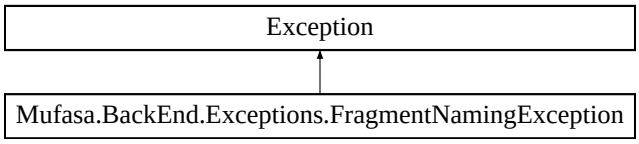
Fragment sample volume.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Designer/Fragment.cs

5.12 Mufasa.BackEnd.Exceptions.FragmentNamingException Class Reference

Inheritance diagram for Mufasa.BackEnd.Exceptions.FragmentNamingException:



Public Member Functions

- FragmentNamingException ()
  FragmentNamingException constructor.
- FragmentNamingException (string message)
  FragmentNamingException constructor.

5.12.1 Detailed Description

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

5.12.2 Constructor & Destructor Documentation

5.12.2.1 Mufasa.BackEnd.Exceptions.FragmentNamingException.FragmentNamingException ( )

FragmentNamingException constructor.

5.12.2.2 Mufasa.BackEnd.Exceptions.FragmentNamingException.FragmentNamingException (string *message*)

FragmentNamingException constructor.

Parameters

message	Message to send.

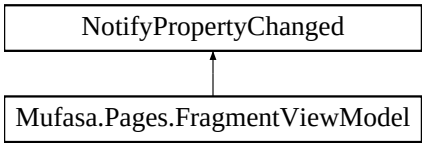
The documentation for this class was generated from the following file:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Exceptions/FragmentNaming↩ Exception.cs

5.13 Mufasa.Pages.FragmentViewModel Class Reference

Wraps Fragment class and provides notification of changes

Inheritance diagram for Mufasa.Pages.FragmentViewModel:



Public Member Functions

- FragmentViewModel ()
  FragmentViewModel constructor.

- FragmentViewModel (Fragment m)

  FragmentViewModel constructor.

Properties

- Fragment Model [get]
- double Concentration [get, set]
- double Volume [get, set]
- double ReactionVolume [get, set]
- bool IsVector [get, set]
- long Length [get, set]
- String Source [get, set]
- String Name [get, set]
- ISequence Sequence [get, set]

5.13.1 Detailed Description

Wraps Fragment class and provides notification of changes

5.13.2 Constructor & Destructor Documentation

5.13.2.1 Mufasa.Pages.FragmentViewModel.FragmentViewModel ( )

FragmentViewModel constructor.

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

FragmentViewModel constructor.

Parameters

m	Fragment model.

5.13.3 Property Documentation

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

Concentration.

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

True if a vector fragment.

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

Fragment length.

5.13.3.4 Fragment Mufasa.Pages.FragmentViewModel.Model [get]

Fragment model.

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

Name of the fragment.

5.13.3.6 double Mufasa.Pages.FragmentViewModel.ReactionVolume [get], [set]

Reaction volume.

5.13.3.7 ISequence Mufasa.Pages.FragmentViewModel.Sequence [get], [set]

Fragment sequence.

5.13.3.8 String Mufasa.Pages.FragmentViewModel.Source [get], [set]

Path to the file or url containing the fragment.

5.13.3.9 double Mufasa.Pages.FragmentViewModel.Volume [get], [set]

Sample volume.

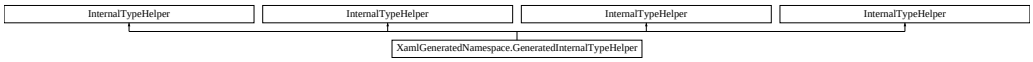
The documentation for this class was generated from the following file:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/Pages/FragmentViewModel.cs

5.14 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
- 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

5.14.1 Detailed Description

GeneratedInternalTypeHelper

5.14.2 Member Function Documentation

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

AddEventHandler

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

AddEventHandler

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

AddEventHandler

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

AddEventHandler

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

CreateDelegate

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

CreateDelegate

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

CreateDelegate

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

CreateDelegate

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

CreateInstance

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

CreateInstance

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

CreateInstance

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

CreateInstance

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

GetPropertyValue

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

GetPropertyValue

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

GetPropertyValue

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

GetPropertyValue

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

SetPropertyValue

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

SetPropertyValue

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

SetPropertyValue

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

SetPropertyValue

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/GeneratedInternalTypeHelper.g.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/GeneratedInternalTypeHelper.g.i.cs

5.15 Mufasa.BackEnd.Lea.LeaSettings Class Reference

Public Member Functions

- LeaSettings ()

  Lea settings constructor.

Properties

- int MinIterations `[get, set]`
- int MaxIterations `[get, set]`
- bool IgnoreHeterodimers `[get, set]`
- int PopulationSize `[get, set]`
- int TournamentSize `[get, set]`
- double CrossoverRate `[get, set]`
- double MutationRate `[get, set]`
- double LearningRate `[get, set]`

  Local search chance.
- double Epsilon `[get, set]`

  Stopping criterion. Best solutions variance across generations threshold.

5.15.1 Detailed Description

Lea settings.

5.15.2 Constructor & Destructor Documentation

5.15.2.1 Mufasa.BackEnd.Lea.LeaSettings.LeaSettings ( )

Lea settings constructor.

5.15.3 Property Documentation

5.15.3.1 double Mufasa.BackEnd.Lea.LeaSettings.CrossoverRate `[get]`, `[set]`

Crossover rate.

5.15.3.2 double Mufasa.BackEnd.Lea.LeaSettings.Epsilon `[get]`, `[set]`

Stopping criterion. Best solutions variance across generations threshold.

Variance of best solutions across generations must be lower than epsilon for the algorithm to stop.

5.15.3.3 bool Mufasa.BackEnd.Lea.LeaSettings.IgnoreHeterodimers `[get]`, `[set]`

True to ignore heterodimer melting temperature calculation.

5.15.3.4 double Mufasa.BackEnd.Lea.LeaSettings.LearningRate `[get]`, `[set]`

Local search chance.

5.15.3.5 int Mufasa.BackEnd.Lea.LeaSettings.MaxIterations [get], [set]

Max iterations to perform.

5.15.3.6 int Mufasa.BackEnd.Lea.LeaSettings.MinIterations [get], [set]

Max iterations to perform.

5.15.3.7 double Mufasa.BackEnd.Lea.LeaSettings.MutationRate [get], [set]

Mutation rate.

5.15.3.8 int Mufasa.BackEnd.Lea.LeaSettings.PopulationSize [get], [set]

Starting population size.

5.15.3.9 int Mufasa.BackEnd.Lea.LeaSettings.TournamentSize [get], [set]

Tournament size.

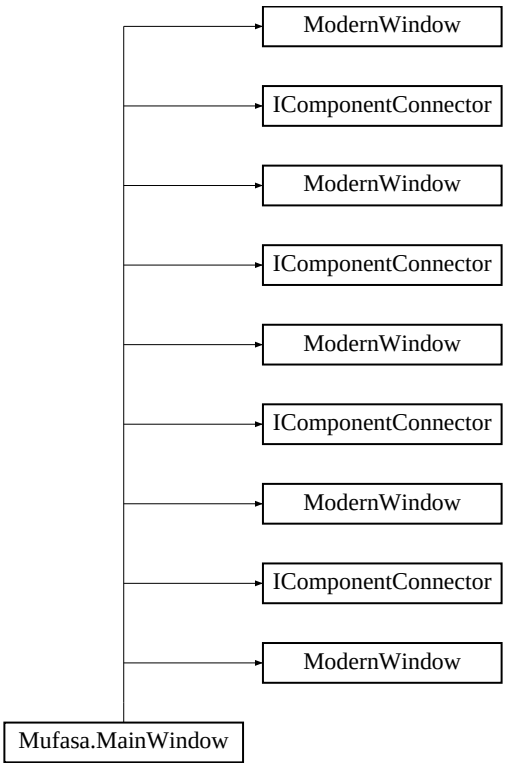
The documentation for this class was generated from the following file:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Lea/LeaSettings.cs

5.16 Mufasa.MainWindow Class Reference

Interaction logic for MainWindow.xaml

Inheritance diagram for Mufasa.MainWindow:



Public Member Functions

- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent

5.16.1 Detailed Description

Interaction logic for MainWindow.xaml

MainWindow

5.16.2 Member Function Documentation

5.16.2.1 void Mufasa.MainWindow.InitializeComponent ( )

InitializeComponent

5.16.2.2 void Mufasa.MainWindow.InitializeComponent ( )

InitializeComponent

5.16.2.3 void Mufasa.MainWindow.InitializeComponent ( )

InitializeComponent

5.16.2.4 void Mufasa.MainWindow.InitializeComponent ( )

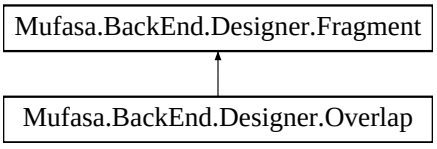
InitializeComponent

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/MainWindow.xaml.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/MainWindow.g.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/MainWindow.g.i.cs

5.17 Mufasa.BackEnd.Designer.Overlap Class Reference

Inheritance diagram for Mufasa.BackEnd.Designer.Overlap:



Public Member Functions

- Overlap (String name, ISequence overhang_5, ISequence geneSpecific_3, TmThalSettings settings, int pairIndex=-1)

  Overlap constructor.
- Overlap (String name, ISequence primer, TmThalSettings settings, int pairIndex=-1)

  Overlap constructor.
- Overlap (Overlap overlap)

  Overlap copying constructor.
- string ToCsv ()

  Prints the overlap in the CSV format.
- override string ToString ()

  Prints the overlap info.
- double GetSimpleMeltingTemperature ()

  Compute overlap's simple-style melting temperature.
- double GetDuplexTemperature (Overlap twin)

  Compute overlap's duplex melting temperature.
- byte Dequeue (int minLen, int length=1)

  Cut the first nucleotide off.
- byte Pop (int minLen, int length=1)

  Cut the last nucleotide of.
- byte Push (int maxLen, int length=1)

  Add a nucleotide to the oligo's 3' end.
- byte Enqueue (int maxLen, int length=1)

  Add a nucleotide to the oligo's 5' end.
- bool IsAcceptable (double maxTh, double maxTd, bool ignoreHeterodimers=false)

  Check if the overlap's melting temperatures satisfy the conditions.

Static Public Member Functions

- static void CalculateHeterodimers (List< Overlap > overlaps)

  Calculate heterodimer melting temperatures.

Properties

- int PairIndex `[get, set]`
- double HeterodimerMeltingTemperature `[get, set]`
- double HomodimerMeltingTemperature `[get]`
- double MeltingTemperature `[get]`
- double HairpinMeltingTemperature `[get]`
- TmThalSettings Settings `[get, set]`
- ISequence TemplateSeq_3 `[get, set]`
- ISequence TemplateSeq_5 `[get, set]`
- ISequence Seq_3 `[get, set]`
- ISequence Seq_5 `[get, set]`
- String SequenceString `[get]`

5.17.1 Detailed Description

Overlap class.

5.17.2 Constructor & Destructor Documentation

5.17.2.1 Mufasa.BackEnd.Designer.Overlap.Overlap (String *name*, ISequence *overhang_5*, ISequence *geneSpecific_3*, TmThalSettings *settings*, int *pairIndex* = `-1`)

Overlap constructor.

Parameters

name	Overlap name.
overhang_5	Overhang sequence.
geneSpecific_3	Gene specific sequence.

5.17.2.2 Mufasa.BackEnd.Designer.Overlap.Overlap (String *name*, ISequence *primer*, TmThalSettings *settings*, int *pairIndex* = −1)

Overlap constructor.

Parameters

name	Overlap name.
primer	Primer sequence.

5.17.2.3 Mufasa.BackEnd.Designer.Overlap.Overlap (Overlap *overlap*)

Overlap copying constructor.

Parameters

overlap	Overlap.

5.17.3 Member Function Documentation

5.17.3.1 static void Mufasa.BackEnd.Designer.Overlap.CalculateHeterodimers (List< Overlap > *overlaps*) [static]

Calculate heterodimer melting temperatures.

Parameters

overlaps	Overlap list.

5.17.3.2 byte Mufasa.BackEnd.Designer.Overlap.Dequeue (int *minLen*, int *length* = 1)

Cut the first nucleotide off.

Parameters

minLen	Minimum overhang length.

Returns

First nucleotide or 255 if oligo too short to dequeue.

5.17.3.3 byte Mufasa.BackEnd.Designer.Overlap.Enqueue (int *maxLen*, int *length* = 1)

Add a nucleotide to the oligo's 5' end.

Parameters

maxLen	Maximum overhang length.

Returns

New nucleotide or 255 if oligo too long to enqueue.

5.17.3.4 double Mufasa.BackEnd.Designer.Overlap.GetDuplexTemperature (Overlap *twin*)

Compute overlap's duplex melting temperature.

Returns

Duplex melting temperature.

5.17.3.5 double Mufasa.BackEnd.Designer.Overlap.GetSimpleMeltingTemperature ( )

Compute overlap's simple-style melting temperature.

Returns

Overlap's Tm.

5.17.3.6 bool Mufasa.BackEnd.Designer.Overlap.IsAcceptable (double *maxTh*, double *maxTd*, bool *ignoreHeterodimers* = `false`)

Check if the overlap's melting temperatures satisfy the conditions.

Parameters

maxTh	Max hairpin melting temperature.
maxTd	Max duplex melting temperature.
consider↩ Heterodimers	

Returns

True if the overlap is acceptable.

5.17.3.7 byte Mufasa.BackEnd.Designer.Overlap.Pop (int *minLen*, int *length* = `1`)

Cut the last nucleotide of.

Parameters

minLen	Minimum primer length.

Returns

Last nucleotide or 255 if oligo too short to pop.

5.17.3.8 byte Mufasa.BackEnd.Designer.Overlap.Push (int *maxLen*, int *length* = `1`)

Add a nucleotide to the oligo's 3' end.

Parameters

maxLen	Maximum primer length.

Returns

New nucleotide or 255 if oligo too long to push.

5.17.3.9 string Mufasa.BackEnd.Designer.Overlap.ToCsv ( )

Prints the overlap in the CSV format.

Returns

CSV String represanting the overlap.

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

Prints the overlap info.

Returns

String represanting the overlap.

5.17.4 Property Documentation

5.17.4.1 double Mufasa.BackEnd.Designer.Overlap.HairpinMeltingTemperature [get]

Overlap's hairpin melting temperature.

5.17.4.2 double Mufasa.BackEnd.Designer.Overlap.HeterodimerMeltingTemperature [get], [set]

Overlap heterodimer melting temperature.

5.17.4.3 double Mufasa.BackEnd.Designer.Overlap.HomodimerMeltingTemperature [get]

Overlap homodimer melting temperature.

5.17.4.4 double Mufasa.BackEnd.Designer.Overlap.MeltingTemperature [get]

Overlap melting temperature.

5.17.4.5 int Mufasa.BackEnd.Designer.Overlap.PairIndex [get], [set]

Paired overlap index.

5.17.4.6 ISequence Mufasa.BackEnd.Designer.Overlap.Seq_3 [get], [set]

3' ("gene-specific") subsequence.

5.17.4.7 ISequence Mufasa.BackEnd.Designer.Overlap.Seq_5 [get], [set]

5' ("overhang") subsequence.

5.17.4.8 String Mufasa.BackEnd.Designer.Overlap.SequenceString [get]

Sequence string.

5.17.4.9 TmThalSettings Mufasa.BackEnd.Designer.Overlap.Settings [get], [set]

Settings for thermodynamic evaluation.

5.17.4.10 ISequence Mufasa.BackEnd.Designer.Overlap.TemplateSeq_3 [get], [set]

3' ("gene-specific") subsequence template.

5.17.4.11 ISequence Mufasa.BackEnd.Designer.Overlap.TemplateSeq_5 [get], [set]

5' ("overhang") subsequence template.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Designer/Overlap.cs

5.18 Mufasa.BackEnd.Designer.OverlapOptimizer Class Reference

Public Member Functions

- OverlapOptimizer ()
  Overlap optimizer constructor.
- OverlapOptimizer (Construct construct, DesignerSettings settings)
  Overlap optimizer constructor.
- void LeaOptimizeOverlaps (object o, DoWorkEventArgs args)
  Lamarckian evolutionary algorithm for overlap optimization.
- void Stop ()
  Stop the calcualations.
- void SemiNaiveOptimizeOverlaps (object o, DoWorkEventArgs args)
  Overlap naive-greedy temperature optimization.

Properties

- Construct Construct [get, set]
- bool IgnorePreoptimizationExceptions [get, set]
- List< Overlap > Templates [get, set]
- DesignerSettings Settings [get, set]

5.18.1 Detailed Description

Overlap optimizer class.

5.18.2 Constructor & Destructor Documentation

5.18.2.1 Mufasa.BackEnd.Designer.OverlapOptimizer.OverlapOptimizer ( )

Overlap optimizer constructor.

5.18.2.2 Mufasa.BackEnd.Designer.OverlapOptimizer.OverlapOptimizer (Construct *construct,* DesignerSettings *settings*)

Overlap optimizer constructor.

Parameters

construct	A construct to assemble.

5.18.3 Member Function Documentation

5.18.3.1 void Mufasa.BackEnd.Designer.OverlapOptimizer.LeaOptimizeOverlaps (object *o,* DoWorkEventArgs *args*)

Lamarckian evolutionary algorithm for overlap optimization.

Parameters

o	
args	

5.18.3.2 void Mufasa.BackEnd.Designer.OverlapOptimizer.SemiNaiveOptimizeOverlaps (object *o,* DoWorkEventArgs *args*)

Overlap naive-greedy temperature optimization.

Parameters

o	
args	

5.18.3.3 void Mufasa.BackEnd.Designer.OverlapOptimizer.Stop ( )

Stop the calcualations.

5.18.4 Property Documentation

5.18.4.1 Construct Mufasa.BackEnd.Designer.OverlapOptimizer.Construct [get], [set]

A construct to assemble.

5.18.4.2 bool Mufasa.BackEnd.Designer.OverlapOptimizer.IgnorePreoptimizationExceptions [get], [set]

True to ignore inacceptable solutions during the preoptimization stage.

5.18.4.3 DesignerSettings Mufasa.BackEnd.Designer.OverlapOptimizer.Settings [get], [set]

Designer settings.

5.18.4.4 List<Overlap> Mufasa.BackEnd.Designer.OverlapOptimizer.Templates [get],[set]

Overlap templates.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Designer/OverlapOptimizer.cs

5.19 Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args Struct Reference

Structure for passing arguments to THermodynamic ALignment calculation.

Public Attributes

- int debug

  If non zero, print debugging info to stderr.
- p3_thal_alignment_type type

  Alignment type. THAL_ANY, by default. See p3_thal_alignment_type
- int maxLoop

  Maximum size of loop to consider; longer than 30 bp are not allowed.
- double mv

  Concentration of monovalent cations.
- double dv

  Concentration of divalent cations.
- double dntp

  Concentration of dNTP-s.
- double dna_conc

  Concentration of oligonucleotides.
- double temp

  Temperature from which hairpin structures will be calculated.
- int temponly

  If non zero, print only temperature to stderr.
- int dimer

  If non zero, dimer structure is calculated.

5.19.1 Detailed Description

Structure for passing arguments to THermodynamic ALignment calculation.

5.19.2 Member Data Documentation

5.19.2.1 int Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args.debug

If non zero, print debugging info to stderr.

5.19.2.2 int Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args.dimer

If non zero, dimer structure is calculated.

5.19.2.3 double Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args.dna_conc

Concentration of oligonucleotides.

5.19.2.4 double Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args.dntp

Concentration of dNTP-s.

5.19.2.5 double Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args.dv

Concentration of divalent cations.

5.19.2.6 int Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args.maxLoop

Maximum size of loop to consider; longer than 30 bp are not allowed.

5.19.2.7 double Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args.mv

Concentration of monovalent cations.

5.19.2.8 double Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args.temp

Temperature from which hairpin structures will be calculated.

5.19.2.9 int Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args.temponly

If non zero, print only temperature to stderr.

5.19.2.10 p3_thal_alignment_type Mufasa.BackEnd.TmThal.Thermodynamics.p3_thal_args.type

Alignment type. THAL_ANY, by default. See p3_thal_alignment_type

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/TmThal/Thermodynamics.cs

5.20 Mufasa.BackEnd.TmThal.Thermodynamics.p3_tm_args Struct Reference

Primer3's thal arguments structure.

Public Attributes

- double dna_conc

  DNA concentration (nanomolar).
- double salt_conc

  Concentration of divalent cations (millimolar).
- double divalent_conc

  Concentration of divalent cations (millimolar).
- double dntp_conc

Concentration of dNTPs (millimolar).

- int nn_max_len

  The maximum sequence length for using the nearest neighbor model (as implemented in oligotm. For sequences longer than this, seqtm uses the "GC%" formula implemented in long_seq_tm.

- p3_tm_method_type tm_method

  Melting temperature computation method. See p3_tm_method_type

- p3_salt_correction_type salt_corrections

  Melting themperature method. See p3_salt_correction_type

5.20.1 Detailed Description

Primer3's thal arguments structure.

5.20.2 Member Data Documentation

5.20.2.1 double Mufasa.BackEnd.TmThal.Thermodynamics.p3_tm_args.divalent_conc

Concentration of divalent cations (millimolar).

5.20.2.2 double Mufasa.BackEnd.TmThal.Thermodynamics.p3_tm_args.dna_conc

DNA concentration (nanomolar).

5.20.2.3 double Mufasa.BackEnd.TmThal.Thermodynamics.p3_tm_args.dntp_conc

Concentration of dNTPs (millimolar).

5.20.2.4 int Mufasa.BackEnd.TmThal.Thermodynamics.p3_tm_args.nn_max_len

The maximum sequence length for using the nearest neighbor model (as implemented in oligotm. For sequences longer than this, seqtm uses the "GC%" formula implemented in long_seq_tm.

5.20.2.5 double Mufasa.BackEnd.TmThal.Thermodynamics.p3_tm_args.salt_conc

Concentration of divalent cations (millimolar).

5.20.2.6 p3_salt_correction_type Mufasa.BackEnd.TmThal.Thermodynamics.p3_tm_args.salt_corrections

Melting themperature method. See p3_salt_correction_type

5.20.2.7 p3_tm_method_type Mufasa.BackEnd.TmThal.Thermodynamics.p3_tm_args.tm_method

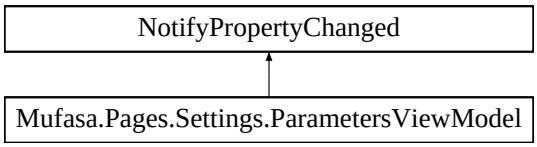
Melting temperature computation method. See p3_tm_method_type

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/TmThal/Thermodynamics.cs

5.21 Mufasa.Pages.Settings.ParametersViewModel Class Reference

Inheritance diagram for Mufasa.Pages.Settings.ParametersViewModel:



Properties

- string[] TmMethods `[get]`

  Available tm calculation methods.
- string[] SaltCorrMethods `[get]`

  Available salt correction methods.
- string SelectedTmMethod `[get, set]`
- string SelectedSaltCorrMethod `[get, set]`

5.21.1 Property Documentation

5.21.1.1 string [] Mufasa.Pages.Settings.ParametersViewModel.SaltCorrMethods `[get]`

Available salt correction methods.

5.21.1.2 string Mufasa.Pages.Settings.ParametersViewModel.SelectedSaltCorrMethod `[get],[set]`

Selected salt correction method.

5.21.1.3 string Mufasa.Pages.Settings.ParametersViewModel.SelectedTmMethod `[get],[set]`

Selected tm calculation method.

5.21.1.4 string [] Mufasa.Pages.Settings.ParametersViewModel.TmMethods `[get]`

Available tm calculation methods.

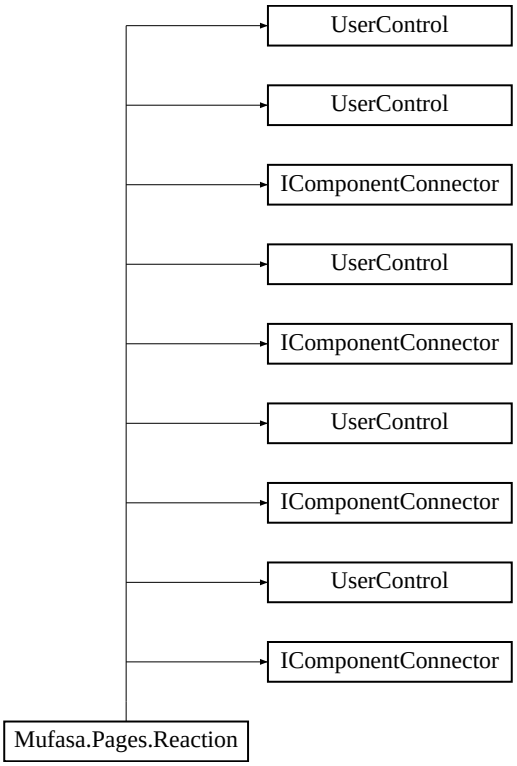
The documentation for this class was generated from the following file:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/Pages/Settings/ParametersViewModel.cs

5.22 Mufasa.Pages.Reaction Class Reference

Reaction

Inheritance diagram for Mufasa.Pages.Reaction:



Public Member Functions

- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent

Properties

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

5.22.1 Detailed Description

Reaction

Interaction logic for Reaction.xaml

5.22.2 Member Function Documentation

5.22.2.1 void Mufasa.Pages.Reaction.InitializeComponent ( )

InitializeComponent

5.22.2.2 void Mufasa.Pages.Reaction.InitializeComponent ( )

InitializeComponent

5.22.2.3 void Mufasa.Pages.Reaction.InitializeComponent ( )

InitializeComponent

5.22.2.4 void Mufasa.Pages.Reaction.InitializeComponent ( )

InitializeComponent

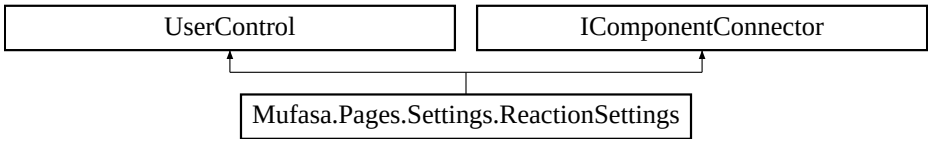
The documentation for this class was generated from the following files:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Reaction.g.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Reaction.g.i.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/Pages/Reaction.xaml.cs

5.23 Mufasa.Pages.Settings.ReactionSettings Class Reference

ReactionSettings

Inheritance diagram for Mufasa.Pages.Settings.ReactionSettings:



Public Member Functions

- void InitializeComponent ()

  InitializeComponent

5.23.1 Detailed Description

ReactionSettings

5.23.2 Member Function Documentation

5.23.2.1 void Mufasa.Pages.Settings.ReactionSettings.InitializeComponent ( )

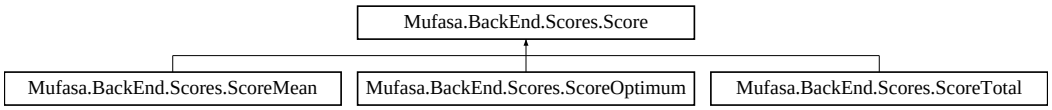
InitializeComponent

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Settings/ReactionSettings.↩ g.i.cs

5.24 Mufasa.BackEnd.Scores.Score Class Reference

Inheritance diagram for Mufasa.BackEnd.Scores.Score:



Public Member Functions

- Score (Score s)

  Score copying constructor.
- Score ()
- abstract void Rescore (List< Overlap > overlaps)

  Scoring function.
- string ToCsv ()

  Prints the overlap in the CSV format.

Properties

- double RawScore `[get, protected set]`

  Raw score.
- double NormalizedScore `[get, protected set]`

  Normalized Score.
- String Label `[get, set]`

  Score label or name
- String Description `[get, set]`

  Score description

5.24.1 Constructor & Destructor Documentation

5.24.1.1 Mufasa.BackEnd.Scores.Score.Score (Score *s*)

Score copying constructor.

Parameters

s	Score to copy.

5.24.1.2 Mufasa.BackEnd.Scores.Score.Score ( )

Score copying constructor.

5.24.2 Member Function Documentation

5.24.2.1 abstract void Mufasa.BackEnd.Scores.Score.Rescore (List< Overlap > *overlaps*) `[pure virtual]`

Scoring function.

Parameters

overlaps	Overlap list.

Implemented in Mufasa.BackEnd.Scores.ScoreTotal, Mufasa.BackEnd.Scores.ScoreOptimum, and Mufasa.BackEnd.Scores.ScoreMean.

5.24.2.2 string Mufasa.BackEnd.Scores.Score.ToCsv ( )

Prints the overlap in the CSV format.

Returns

CSV String represanting the overlap.

5.24.3 Property Documentation

5.24.3.1 String Mufasa.BackEnd.Scores.Score.Description [get], [set]

Score description

5.24.3.2 String Mufasa.BackEnd.Scores.Score.Label [get], [set]

Score label or name

5.24.3.3 double Mufasa.BackEnd.Scores.Score.NormalizedScore [get], [protected set]

Normalized Score.

5.24.3.4 double Mufasa.BackEnd.Scores.Score.RawScore [get], [protected set]

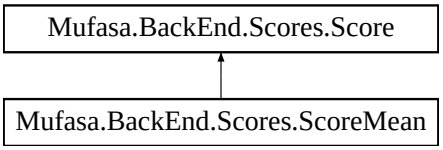
Raw score.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Scores/Score.cs

5.25 Mufasa.BackEnd.Scores.ScoreMean Class Reference

Inheritance diagram for Mufasa.BackEnd.Scores.ScoreMean:



Public Member Functions

- ScoreMean ()
  ScoreMean constructor.
- ScoreMean (List< Overlap > overlaps)

ScoreMean constructor.

- ScoreMean (ScoreMean s)

  ScoreMean copying constructor.

- override void Rescore (List< Overlap > overlaps)

  Scoring function.

Additional Inherited Members

5.25.1 Constructor & Destructor Documentation

5.25.1.1 Mufasa.BackEnd.Scores.ScoreMean.ScoreMean ( )

ScoreMean constructor.

5.25.1.2 Mufasa.BackEnd.Scores.ScoreMean.ScoreMean (List< Overlap > *overlaps*)

ScoreMean constructor.

5.25.1.3 Mufasa.BackEnd.Scores.ScoreMean.ScoreMean (ScoreMean *s*)

ScoreMean copying constructor.

Parameters

s	Score to copy.

5.25.2 Member Function Documentation

5.25.2.1 override void Mufasa.BackEnd.Scores.ScoreMean.Rescore (List< Overlap > *overlaps*) [virtual]

Scoring function.

Parameters

overlaps	Overlap list.

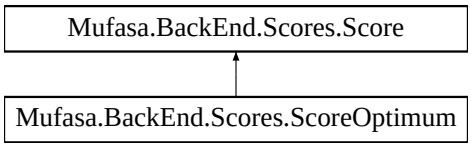
Implements Mufasa.BackEnd.Scores.Score.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Scores/ScoreMean.cs

5.26 Mufasa.BackEnd.Scores.ScoreOptimum Class Reference

Inheritance diagram for Mufasa.BackEnd.Scores.ScoreOptimum:



Public Member Functions

- ScoreOptimum (double targetTm)

  ScoreMean constructor.
- ScoreOptimum (List< Overlap > overlaps, double targetTm)

  ScoreMean constructor.
- ScoreOptimum (ScoreOptimum s)

  ScoreOptimum copying constructor.
- override void Rescore (List< Overlap > overlaps)

  Scoring function.

Properties

- double TargetTm `[get, set]`

  Target melting temperature.

5.26.1 Constructor & Destructor Documentation

5.26.1.1 Mufasa.BackEnd.Scores.ScoreOptimum.ScoreOptimum (double *targetTm*)

ScoreMean constructor.

5.26.1.2 Mufasa.BackEnd.Scores.ScoreOptimum.ScoreOptimum (List< **Overlap** > *overlaps,* double *targetTm*)

ScoreMean constructor.

5.26.1.3 Mufasa.BackEnd.Scores.ScoreOptimum.ScoreOptimum (**ScoreOptimum** *s*)

ScoreOptimum copying constructor.

Parameters

s	Score to copy.

5.26.2 Member Function Documentation

5.26.2.1 override void Mufasa.BackEnd.Scores.ScoreOptimum.Rescore (List< **Overlap** > *overlaps*) `[virtual]`

Scoring function.

Parameters

overlaps	Overlap list.
targetTm	Target melting temperature.

Implements Mufasa.BackEnd.Scores.Score.

5.26.3 Property Documentation

5.26.3.1 double Mufasa.BackEnd.Scores.ScoreOptimum.TargetTm `[get],[set]`

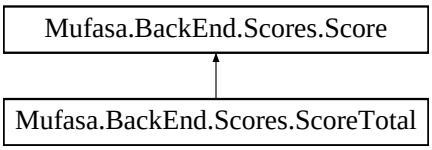
Target melting temperature.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Scores/ScoreOptimum.cs

5.27 Mufasa.BackEnd.Scores.ScoreTotal Class Reference

Inheritance diagram for Mufasa.BackEnd.Scores.ScoreTotal:



Public Member Functions

- ScoreTotal (List< Overlap > overlaps, double targetTm)
  Score constructor.
- ScoreTotal ()
  Empty Score constructor for inacceptable solutions.
- ScoreTotal (double targetTm)
  Empty Score constructor for unscored solutions.
- ScoreTotal (ScoreTotal s)
  ScoreTotal copying constructor.
- override void Rescore (List< Overlap > overlaps)
  Scoring function.

Static Public Attributes

- static ScoreTotal **Inacceptable** = new ScoreTotal()

Properties

- ScoreMean Sm `[get]`
  ScoreMean partial score.
- ScoreOptimum So `[get]`
  ScoreOptimum partial score.
- double TargetTm `[get, set]`
  Target melting temperature.

5.27.1 Constructor & Destructor Documentation

5.27.1.1 Mufasa.BackEnd.Scores.ScoreTotal.ScoreTotal (List< Overlap > *overlaps*, double *targetTm*)

Score constructor.

Parameters

overlaps	Overlap list.

targetTm	Target melting temperature.

5.27.1.2 Mufasa.BackEnd.Scores.ScoreTotal.ScoreTotal ( )

Empty Score constructor for inacceptable solutions.

5.27.1.3 Mufasa.BackEnd.Scores.ScoreTotal.ScoreTotal (double *targetTm*)

Empty Score constructor for unscored solutions.

5.27.1.4 Mufasa.BackEnd.Scores.ScoreTotal.ScoreTotal (ScoreTotal *s*)

ScoreTotal copying constructor.

Parameters

s	Score to copy.

5.27.2 Member Function Documentation

5.27.2.1 override void Mufasa.BackEnd.Scores.ScoreTotal.Rescore (List< Overlap > *overlaps*) [virtual]

Scoring function.

Parameters

overlaps	Overlap list.

Implements Mufasa.BackEnd.Scores.Score.

5.27.3 Property Documentation

5.27.3.1 ScoreMean Mufasa.BackEnd.Scores.ScoreTotal.Sm [get]

ScoreMean partial score.

5.27.3.2 ScoreOptimum Mufasa.BackEnd.Scores.ScoreTotal.So [get]

ScoreOptimum partial score.

5.27.3.3 double Mufasa.BackEnd.Scores.ScoreTotal.TargetTm [get], [set]

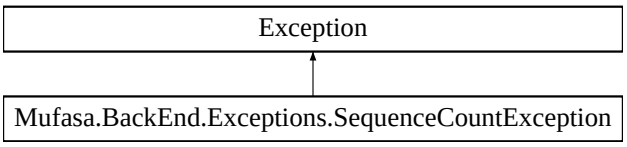
Target melting temperature.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Scores/ScoreTotal.cs

5.28 Mufasa.BackEnd.Exceptions.SequenceCountException Class Reference

Inheritance diagram for Mufasa.BackEnd.Exceptions.SequenceCountException:



Public Member Functions

- SequenceCountException ()
  SequenceCountException constructor.
- SequenceCountException (string message)
  SequenceCountException constructor.

5.28.1 Detailed Description

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

5.28.2 Constructor & Destructor Documentation

5.28.2.1 Mufasa.BackEnd.Exceptions.SequenceCountException.SequenceCountException ( )

SequenceCountException constructor.

5.28.2.2 Mufasa.BackEnd.Exceptions.SequenceCountException.SequenceCountException (string *message*)

SequenceCountException constructor.

Parameters

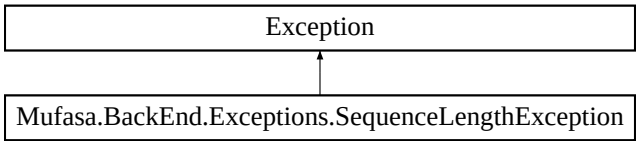
message	Message to send.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Exceptions/SequenceCountException.cs

5.29 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.

5.29.1 Detailed Description

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

5.29.2 Constructor & Destructor Documentation

5.29.2.1 Mufasa.BackEnd.Exceptions.SequenceLengthException.SequenceLengthException ( )

SequenceLengthException constructor.

5.29.2.2 Mufasa.BackEnd.Exceptions.SequenceLengthException.SequenceLengthException (string *message*)

SequenceLengthException constructor.

Parameters

message	Message to send.

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

SequenceLengthException constructor.

Parameters

message	Message to send.
sequence	Sequence in question.

5.29.3 Property Documentation

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

Sequence in question.

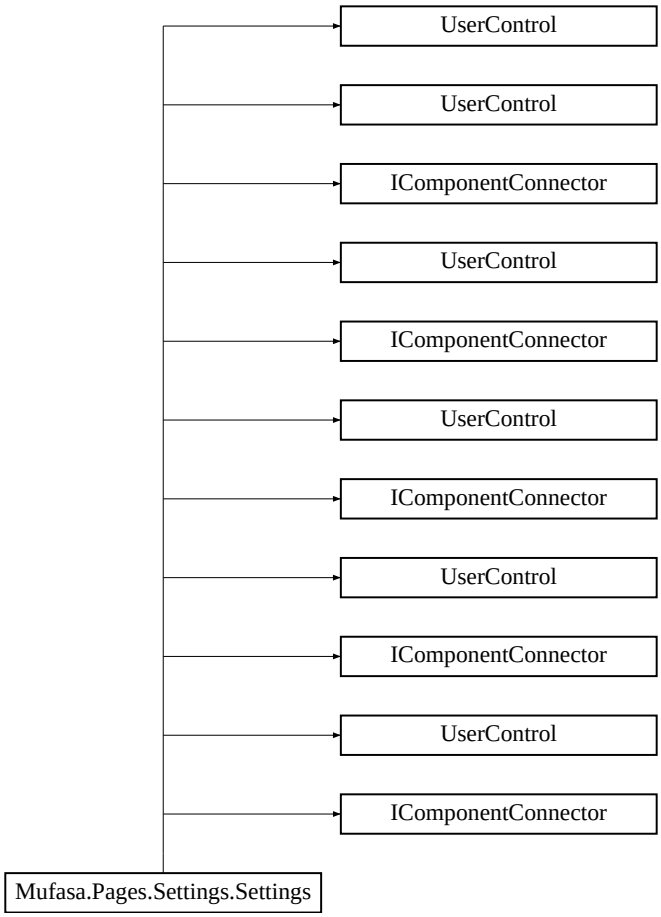
The documentation for this class was generated from the following file:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Exceptions/SequenceLength↩ Exception.cs

5.30 Mufasa.Pages.Settings.Settings Class Reference

Settings

Inheritance diagram for Mufasa.Pages.Settings.Settings:



Public Member Functions

- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent
- void InitializeComponent ()

  InitializeComponent

5.30.1 Detailed Description

Settings

Interaction logic for DesignerSettings.xaml

5.30.2 Member Function Documentation

5.30.2.1 void Mufasa.Pages.Settings.Settings.InitializeComponent ( )

InitializeComponent

5.30.2.2 void Mufasa.Pages.Settings.Settings.InitializeComponent ( )

InitializeComponent

5.30.2.3 void Mufasa.Pages.Settings.Settings.InitializeComponent ( )

InitializeComponent

5.30.2.4 void Mufasa.Pages.Settings.Settings.InitializeComponent ( )

InitializeComponent

5.30.2.5 void Mufasa.Pages.Settings.Settings.InitializeComponent ( )

InitializeComponent

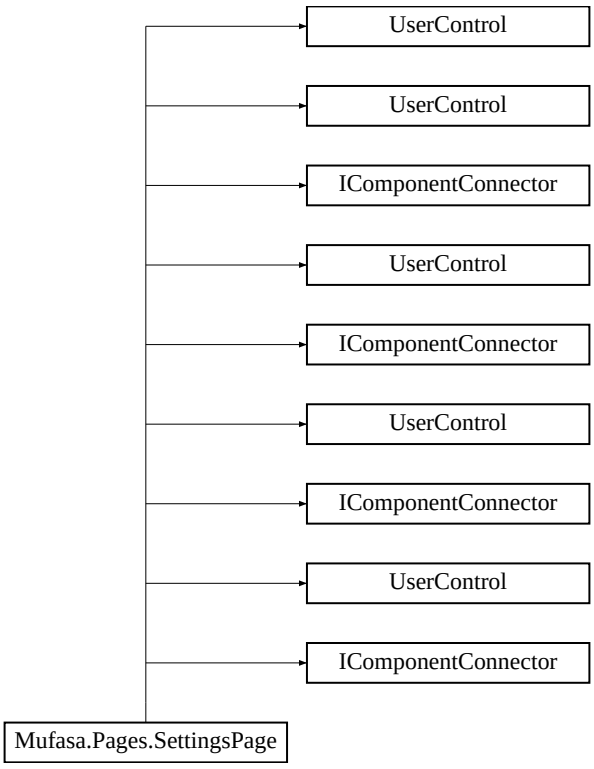
The documentation for this class was generated from the following files:

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Settings/Parameters.g.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Settings/Parameters.g.i.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/Settings/Settings.g.i.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/Pages/Settings/Parameters.xaml.cs

5.31 Mufasa.Pages.SettingsPage Class Reference

SettingsPage

Inheritance diagram for Mufasa.Pages.SettingsPage:



Public Member Functions

- void InitializeComponent ()
  InitializeComponent
- void InitializeComponent ()
  InitializeComponent
- void InitializeComponent ()
  InitializeComponent
- void InitializeComponent ()
  InitializeComponent

5.31.1 Detailed Description

SettingsPage

Interaction logic for SettingsPage.xaml

5.31.2 Member Function Documentation

5.31.2.1 void Mufasa.Pages.SettingsPage.InitializeComponent ( )

InitializeComponent

5.31.2.2 void Mufasa.Pages.SettingsPage.InitializeComponent ( )

InitializeComponent

5.31.2.3 void Mufasa.Pages.SettingsPage.InitializeComponent ( )

InitializeComponent

5.31.2.4 void Mufasa.Pages.SettingsPage.InitializeComponent ( )

InitializeComponent

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/SettingsPage.g.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/obj/Debug/Pages/SettingsPage.g.i.cs
- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/Pages/SettingsPage.xaml.cs

5.32 Mufasa.BackEnd.TmThal.Thermodynamics.thal_results Struct Reference

Structure for receiving results from the thermodynamic alignment calculation.

Public Attributes

- char[] msg
  Message.
- double temp
  Melting temperature.

- int align_end_1

  Alignment end 1.
- int align_end_2

  Alignment end 2.

5.32.1 Detailed Description

Structure for receiving results from the thermodynamic alignment calculation.

5.32.2 Member Data Documentation

5.32.2.1 int Mufasa.BackEnd.TmThal.Thermodynamics.thal_results.align_end_1

Alignment end 1.

5.32.2.2 int Mufasa.BackEnd.TmThal.Thermodynamics.thal_results.align_end_2

Alignment end 2.

5.32.2.3 char [ ] Mufasa.BackEnd.TmThal.Thermodynamics.thal_results.msg

Message.

5.32.2.4 double Mufasa.BackEnd.TmThal.Thermodynamics.thal_results.temp

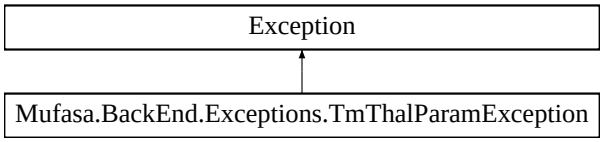
Melting temperature.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/TmThal/Thermodynamics.cs

5.33 Mufasa.BackEnd.Exceptions.TmThalParamException Class Reference

Inheritance diagram for Mufasa.BackEnd.Exceptions.TmThalParamException:



Public Member Functions

- TmThalParamException ()

  TmThalParamException constructor.
- TmThalParamException (string message)

  TmThalParamException constructor.

5.33.1 Detailed Description

Exception thrown if failed to load Primer3's thermodynamic parameters. BackEnd.Designer.Designer.cs

5.33.2 Constructor & Destructor Documentation

5.33.2.1 Mufasa.BackEnd.Exceptions.TmThalParamException.TmThalParamException ( )

TmThalParamException constructor.

5.33.2.2 Mufasa.BackEnd.Exceptions.TmThalParamException.TmThalParamException (string *message*)

TmThalParamException constructor.

Parameters

message	Message to send.

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/Exceptions/TmThalParamException.cs

5.34 Mufasa.BackEnd.TmThal.TmThalSettings Class Reference

Public Member Functions

- TmThalSettings (double dnaConc=50.0, double dntpConc=0.8, double mvConc=50.0, double dvConc=1.5, int nnMaxLen=60, Thermodynamics.p3_tm_method_type tmMethod=Thermodynamics.p3_tm_method_type.p3_santalucia_auto, Thermodynamics.p3_salt_correction_type saltMethod=Thermodynamics.p3_salt_correction_type.p3_santalucia, int maxLoop=30)

  TmThalSettings constructor.

Properties

- Thermodynamics.p3_tm_args TmSettings `[get]`

  TmThal.p3_thal settings for duplex calculation
- Thermodynamics.p3_thal_args ThalSettings `[get]`

  TmThal.p3_thal settings for duplex calculation
- Thermodynamics.p3_thal_args ThalHairpinSettings `[get]`

  TmThal.p3_thal settings for duplex calculation
- Thermodynamics.p3_salt_correction_type SaltCorrectionMethod `[get, set]`

  Salt correction method. See Thermodynamics.p3_salt_correction_type
- Thermodynamics.p3_tm_method_type TmMethod `[get, set]`

  Melting temperature computation method. See Thermodynamics.p3_tm_method_type
- int MaxLoop `[get, set]`

  Maximum size of loop to consider; longer than 30 bp are not allowed.
- int NnMaxLen `[get, set]`

  Max oligo length for Nearest Neighbor-model computations.
- double DnaConcentration `[get, set]`

  DNA concentration.
- double DntpConcentration `[get, set]`

dNTP concentration.

- double DivalentConcentration [get, set]

  Divalent [Mg2+] cations concentration.

- double MonovalentConcentration [get, set]

  Monovalent [Na+/K+] cations concentration.

5.34.1 Constructor & Destructor Documentation

5.34.1.1 Mufasa.BackEnd.TmThal.TmThalSettings.TmThalSettings (double *dnaConc* = 50.0, double *dntpConc* = 0.8, double *mvConc* = 50.0, double *dvConc* = 1.5, int *nnMaxLen* = 60, Thermodynamics.p3_tm_method_type *tmMethod* = Thermodynamics.p3_tm_method_type.p3_santalucia_auto, Thermodynamics.p3_salt_correction_type *saltMethod* = Thermodynamics.p3_salt_correction_type.p3_santalucia, int *maxLoop* = 30)

TmThalSettings constructor.

Parameters

dnaConc	DNA concentration. Assume primer3's default.
dntpConc	dNTP-s concentration. (Qian & Tian, 2014): 0.8 mM.
mvConc	Monovalent cations concentration. Assume phusion buffer.
dvConc	Divovalent cations concentration. Assume phusion buffer.
nnMaxLen	Max oligo length fo NN-model computations.
tmMethod	Melting temperature method. See TmThalSettings.TmMethod
saltMethod	Salt correction method. See TmThalSettings.SaltCorrectionMethod
temperature	Reaction temperature. Annealing temperature for CPEC reaction (Qian & Tian, 2014), as it is constant and lower than suggested annealing temperature for the PCR step (Tm + 3).
thalType	Thermodynamic alignment type. See TmThalSettings.ThermoAlignmentType. ANY by default.
maxLoop	Max hairpin loop size to consider.

5.34.2 Property Documentation

5.34.2.1 double Mufasa.BackEnd.TmThal.TmThalSettings.DivalentConcentration [get], [set]

Divalent [Mg2+] cations concentration.

5.34.2.2 double Mufasa.BackEnd.TmThal.TmThalSettings.DnaConcentration [get], [set]

DNA concentration.

5.34.2.3 double Mufasa.BackEnd.TmThal.TmThalSettings.DntpConcentration [get], [set]

dNTP concentration.

5.34.2.4 int Mufasa.BackEnd.TmThal.TmThalSettings.MaxLoop [get], [set]

Maximum size of loop to consider; longer than 30 bp are not allowed.

5.34.2.5 double Mufasa.BackEnd.TmThal.TmThalSettings.MonovalentConcentration [get], [set]

Monovalent [Na+/K+] cations concentration.

5.34.2.6 int Mufasa.BackEnd.TmThal.TmThalSettings.NnMaxLen [get], [set]

Max oligo length for Nearest Neighbor-model computations.

Default = 60. The rationale behind this value (60) is that this is the maxium reasonable length for nearest neighbor models. It is the maxium length at which we can restrict our model to only two states of melting: fully intact duplex or completely dissociated single strands.

(But: defined as MAX_PRIMER_LENGTH = 36 in primer3's libprimer.c for melting temperature computations)

Both functions return the melting temperature of the given oligo calculated as specified by user, NN-model *should* only be used on DNA sequences of length <= NnMaxLen. seqtm uses NN-model for sequences of length <= NnMaxLen, and a different, G+C% based formula for longer sequences. For NN-model, no error is generated on sequences longer than NnMaxLen, but the formula becomes less accurate as the sequence grows longer. Caveat emptor.

If oligo length > NnMaxLen, calculate the melting temperature of substr(seq, start, length) using the formula from Bolton and McCarthy, PNAS 84:1390 (1962) as presented in Sambrook, Fritsch and Maniatis, Molecular Cloning, p 11.46 (1989, CSHL Press).

Tm = 81.5 + 16.6(log10([Na+])) + .41∗(GC) - 600/length

Where [Na+] is the molar sodium concentration, (GC) is the percent of Gs and Cs in the sequence, and length is the length of the sequence.

5.34.2.7 Thermodynamics.p3_salt_correction_type Mufasa.BackEnd.TmThal.TmThalSettings.SaltCorrectionMethod [get], [set]

Salt correction method. See Thermodynamics.p3_salt_correction_type

If salt_corrections==schildkraut, then formula for salt correction in the paper [Schildkraut, C, and Lifson, S (1965) "Dependence of the melting temperature of DNA on salt concentration", Biopolymers 3:195-208 (not available online)] is used. This is the formula that primer3 used up to and including version 1.0.1.

If salt_corrections==santalucia, then formula for salt correction suggested by the paper [SantaLucia JR (1998) "A unified view of polymer, dumbbell and oligonucleotide DNA nearest-neighbor thermodynamics", Proc Natl Acad Sci 95:1460-65 http://dx.doi.org/10.1073/pnas.95.4.1460] is used.

THIS IS THE RECOMMENDED VALUE.

If salt_corrections==owczarzy, then formula for salt correction in the paper [Owczarzy, R., Moreira, B.G., You, Y., Behlke, M.A., and Walder, J.A. (2008) "Predicting stability of DNA duplexes in solutions containing magnesium and monovalent cations", Biochemistry 47:5336-53 http://dx.doi.org/10.1021/bi702363u] is used.

5.34.2.8 Thermodynamics.p3_thal_args Mufasa.BackEnd.TmThal.TmThalSettings.ThalHairpinSettings [get]

TmThal.p3_thal settings for duplex calculation

5.34.2.9 Thermodynamics.p3_thal_args Mufasa.BackEnd.TmThal.TmThalSettings.ThalSettings [get]

TmThal.p3_thal settings for duplex calculation

5.34.2.10 Thermodynamics.p3_tm_method_type Mufasa.BackEnd.TmThal.TmThalSettings.TmMethod [get], [set]

Melting temperature computation method. See Thermodynamics.p3_tm_method_type

If tm_method==santalucia_auto, then the table of nearest-neighbor thermodynamic parameters and method for Tm calculation in the paper [SantaLucia JR (1998) "A unified view of polymer, dumbbell and oligonucleotide DNA nearest-neighbor thermodynamics", Proc Natl Acad Sci 95:1460-65 http://dx.doi.org/10.↩ 1073/pnas.95.4.1460] is used. *THIS IS THE RECOMMENDED VALUE*. If tm_method==breslauer_auto, then method for Tm calculations in the paper [Rychlik W, Spencer WJ and Rhoads RE (1990) "Optimization

of the annealing temperature for DNA amplification in vitro", Nucleic Acids Res 18:6409-12 http://www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pubmed&pubmedid=2243783]. and the thermodynamic parameters in the paper [Breslauer KJ, Frank R, Blöcker H and Marky LA (1986) "Predicting DNA duplex stability from the base sequence" Proc Natl Acad Sci 83:4746-50 http://dx.doi.org/10.1073/pnas.83.11.3746], are is used. This is the method and the table that primer3 used up to and including version 1.0.1

5.34.2.11 Thermodynamics.p3_tm_args Mufasa.BackEnd.TmThal.TmThalSettings.TmSettings [get]

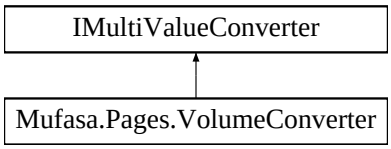
TmThal.p3_thal settings for duplex calculation

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/BackEnd/TmThal/TmThalSettings.cs

5.35 Mufasa.Pages.VolumeConverter Class Reference

Inheritance diagram for Mufasa.Pages.VolumeConverter:



Public Member Functions

- object Convert (object[] values, Type targetType, object parameter, CultureInfo culture)

  Valume convertion.
- object[] ConvertBack (object value, Type[] targetTypes, object parameter, System.Globalization.CultureInfo culture)

  Not implemented.

5.35.1 Detailed Description

Volume converter class. Computes Reaction volumes from fragment lengths and concentrations.

5.35.2 Member Function Documentation

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

Valume convertion.

Parameters

values	Values produced by the FragmentViewModel.
targetType	Target type.

parameter	Parameter.
culture	Culture info.

Returns

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

Not implemented.

Parameters

value	Not implemented.
targetTypes	Not implemented.
parameter	Not implemented.
culture	Not implemented.

Returns

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

- C:/Users/Kuba/Documents/GitHub/MUFASA/Mufasa/Mufasa/Pages/VolumeConverter.cs