My Project

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Chapter 1

Proyecto ASIMOV. Aula de simulación y modelado virtual de procesos bio-moleculares

1.1 Introducción

1.2 Problemas encontrados

1.3 Soluciones

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

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

Chapter 3

Class Index

3.1 Class List

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

Chapter 4

File Index

4.1 File List

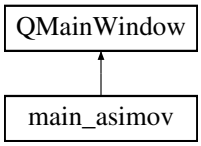
Here is a list of all documented files with brief descriptions:

Chapter 5

Class Documentation

5.1 main_asimov Class Reference

Inheritance diagram for main_asimov:



Public Member Functions

- **main_asimov** (QWidget ∗parent=nullptr)

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

- main_asimov.h
- main_asimov.cpp

5.2 TFrameData Class Reference

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

- asimov_library.h

5.3 TModelMetabolite Class Reference

Public Member Functions

- **TModelMetabolite** (QString m_name, QString m_id, double m_initValue, double m_topValue, double m_↩ bottomValue, double m_value, double m_precision, bool m_tag)
- QString **getName** ()
- QString **getId** ()
- double **getInitValue** ()
- double **getTopValue** ()
- double **getBottomValue** ()
- double **getValue** ()
- double **getPrecision** ()
- bool **getTag** ()
- void **setValue** (double v_value)
- void **setTag** (bool v_tag)
- double **range** ()

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

- asimov_library.h
- asimov_library.cpp

5.4 TModelParameter Class Reference

Public Member Functions

- **TModelParameter** (QString m_ID, QString m_Description, double m_Value, double m_Precision, bool m_↩ Tag)
- short int **getIndex** ()
- QString **getId** ()
- void **setid** (QString v_id)
- QString **getDescription** ()
- void **setDescription** (QString v_description)
- double **getValue** ()
- void **setValue** (double v_value)
- double **getPrecision** ()
- void **setPrecision** (double v_precision)
- bool **getTag** ()
- void **setTag** (bool v_tag)

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

- asimov_library.h
- asimov_library.cpp

5.5 TModelReaction Class Reference

Public Member Functions

- **TModelReaction** (short int v_Index=-1, QString v_ID="", QString v_Description="", std::vector< int > v_Reagent={ 0 }, std::vector< int > v_Product={ 0 }, std::vector< int > v_Parameter={ 0 }, QString v_Equation="", bool v_Tag=false)
- short int **getIndex** ()
- void **setIndex** (short int v_index)
- QString **getId** ()
- void **setid** (QString v_id)
- QString **getDescription** ()
- void **setDescription** (QString v_description)
- std::vector< int > **getAllReagents** ()
- void **setAllReagents** (std::vector< int > v_reagents)
- std::vector< int > **getAllProducts** ()
- void **setAllProducts** (std::vector< int > v_products)
- std::vector< int > **getAllParameters** ()
- void **setAllParameters** (std::vector< int > v_parameters)
- int **GetReagentNo** ()
- void **SetReagentNo** (std::vector< int >(int i))
- int **GetProductNo** ()
- void **SetProductNo** (std::vector< int >(int i))
- int **GetOarameterNo** ()
- void **SetParameterNo** (std::vector< int >(int i))
- QString **getEquation** ()
- void **setEquation** (QString v_equation)
- bool **getTag** ()
- void **setTag** (bool v_tag)
- int **ReagentsCount** ()
- int **ProductsCount** ()
- int **ParametersCount** ()
- TModelMetabolite & **Reagent** (const int index)
- TModelMetabolite & **Product** (const int index)
- TModelMetabolite & **Parameter** (const int index)

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

- asimov_library.h

5.6 TPathway Class Reference

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

- asimov_library.h

5.7 TRawInput Class Reference

Definición de la clase TRawInput que implementa un tipo de dato para poder gestionar los archivos de entrada del programa.

```
#include <asimov_library.h>
```

Public Member Functions

- TRawInput (QString *v_source=nullptr)

  Constructor por defecto de la clase.
- ~**TRawInput** ()

  Destructor de instancias de tipo TRawInput.
- QString **getSource** ()
- void **setSource** (QString *v_source)
- bool **getLoaded** ()
- bool **loadFromFile** ()
- void **setToFile** ()
- void **Edit** (QTextEdit *editor)
- void **newRawInput** ()
- unsigned short **verifyModel** ()
- bool **createModel** (TPathway &v_model)
- void **clean** ()

5.7.1 Detailed Description

Definición de la clase TRawInput que implementa un tipo de dato para poder gestionar los archivos de entrada del programa.

5.7.2 Constructor & Destructor Documentation

5.7.2.1 TRawInput()

```
TRawInput::TRawInput (
            QString * v_source = nullptr )
```

Constructor por defecto de la clase.

Parameters

v_source	Apunta a nullptr por defecto.

Postcondition

Genera una instancia de la clase TRawInput con su contenido vacío.

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

- asimov_library.h
- asimov_library.cpp

5.8 TRunConfig Class Reference

Public Member Functions

- **TRunConfig** (double v_initTime=0, double v_endTime=0, size_t v_cycles=0, QString v_paramList="")

- double **getInitTime** ()
- void **setInitTime** (double t)
- double **getEndTime** ()
- void **setEndTime** (double t)
- size_t **getCycles** ()
- void **setCycles** (size_t value)
- QString **getParamList** ()
- void **setParamList** (QString pList)

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

- asimov_library.h

Chapter 6

File Documentation

6.1 asimov_library.h File Reference

```
#include <QTextEdit>
#include <QString>
```

Classes

- class TRawInput

  Definición de la clase TRawInput que implementa un tipo de dato para poder gestionar los archivos de entrada del programa.
- class TModelMetabolite
- class TModelParameter
- class TModelReaction
- class TRunConfig
- class TFrameData
- class TPathway

6.1.1 Detailed Description

Version

1.0

Date

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Author

Grupo ASIMOV @title Librería para proyecto interdisciplinar de modelización del proceso de la glucólisis en una célula

6.2 asimov_library.h

Go to the documentation of this file.

```
00001
00009 #ifndef ASIMOV_LIBRARY_H
00010 #define ASIMOV_LIBRARY_H
00011 #include <QTextEdit>
00012 #include<QString>
00013
00014
00015 #endif // ASIMOV_LIBRARY_H
00016
00017 class TPathway;
00018
00019
00024 class TRawInput
00025 {
00026     private:    // private members
00030         bool m_loaded;
00034         QString* m_source;
00035
00036     public:
00042         TRawInput(QString* v_source = nullptr);
00043
00048         ~TRawInput();
00049
00050         //getters/setters
00051         QString getSource();
00052         void setSource(QString* v_source);
00053         bool getLoaded();
00054
00055         //public methods
00056         bool loadFromFile();
00057         void setToFile();
00058         void Edit(QTextEdit* editor);
00059         void newRawInput();
00060         unsigned short verifyModel();
00061         bool createModel(TPathway& v_model);
00062         void clean();
00063 };
00064 //=========================================================
00065
00066
00067 // ---------------------------------------------------------
00068 //                      TModelMetabolite
00069 // ---------------------------------------------------------
00070
00071
00072 class TModelMetabolite
00073 {
00074 private:
00075     QString m_name;
00076     QString m_id;
00077     double m_initValue;
00078     double m_topValue;
00079     double m_bottomValue;
00080     double m_value;
00081     double m_precision;
00082     bool m_tag;
00083
00084 public:
00085     // constructor
00086     TModelMetabolite(QString m_name, QString m_id, double m_initValue, double m_topValue,
00087                      double m_bottomValue, double m_value, double m_precision, bool m_tag);
00088
00089     // getters/setters
00090     QString getName();
00091     QString getId();
00092     double getInitValue();
00093     double getTopValue();
00094     double getBottomValue();
00095     double getValue();
00096     double getPrecision();
00097     bool getTag();
00098
00099     void setValue(double v_value);
00100     void setTag(bool v_tag);
00101
00102     // other methods
00103     double range();
00104
00105 };
00106
00107
00108 // ---------------------------------------------------------
```

```
00109 //                    TModelParameter
00110 // ------------------------------------------------------
00111
00112
00113 class TModelParameter
00114 {
00115     private:    // private members
00116         static short int s_counter;
00117         short int m_index;
00118         QString m_id;
00119         QString m_description;
00120         double m_value;
00121         double m_precision;
00122         bool m_tag;
00123
00124     public:
00125         // constructor por defecto
00126        /* TModelParameter(/*short int v_Index = -1 QString m_ID = "",
00127                         QString m_Description = "", double m_Value = 0,
00128                         double m_Precision = 0, bool m_Tag = false);*/
00129
00130         TModelParameter(QString m_ID, QString m_Description, double m_Value,double m_Precision, bool
      m_Tag);
00131
00132         short int getIndex();
00133         //void setIndex(short int v_index);
00134         QString getId();
00135         void setid(QString v_id);
00136         QString getDescription();
00137         void setDescription(QString v_description);
00138         double getValue();
00139         void setValue(double v_value);
00140         double getPrecision();
00141         void setPrecision(double v_precision);
00142         bool getTag();
00143         void setTag(bool v_tag);
00144 };
00145
00146
00147
00148 // ------------------------------------------------------
00149 //                    TModelReaction
00150 // ------------------------------------------------------
00151
00152
00153 class TModelReaction
00154 {
00155     private:    // private members
00156         short int m_index;
00157         QString m_id;
00158         QString m_description;
00159         std::vector<int> m_reagent;
00160         std::vector<int> m_product;
00161         std::vector<int> m_parameter;
00162         QString m_equation;
00163         bool m_tag;
00164
00165     public:     // constructors
00166         TModelReaction(short int v_Index = -1, QString v_ID = "",
00167                        QString v_Description = "", std::vector<int> v_Reagent= { 0 },
00168                        std::vector<int> v_Product = { 0 },
00169                        std::vector<int> v_Parameter= { 0 }, QString v_Equation= "",
00170                        bool v_Tag = false);
00171
00172     public:     // getters/setters
00173         short int getIndex();
00174         void setIndex(short int v_index);
00175         QString getId();
00176         void setid(QString v_id);
00177         QString getDescription();
00178         void setDescription(QString v_description);
00179         std::vector<int> getAllReagents();
00180         void setAllReagents(std::vector<int> v_reagents);
00181         std::vector<int> getAllProducts();
00182         void setAllProducts(std::vector<int> v_products);
00183         std::vector<int> getAllParameters();
00184         void setAllParameters(std::vector<int> v_parameters);
00185         int GetReagentNo ();
00186         void SetReagentNo(std::vector<int>(int i));
00187         int GetProductNo ();
00188         void SetProductNo(std::vector<int>(int i));
00189         int GetOarameterNo ();
00190         void SetParameterNo(std::vector<int>(int i));
00191         QString getEquation();
00192         void setEquation(QString v_equation);
00193         bool getTag();
00194         void setTag(bool v_tag);
```

```
00195
00196     public:     //public methods
00197         int ReagentsCount();
00198         int ProductsCount();
00199         int ParametersCount();
00200         TModelMetabolite &Reagent(const int index);
00201         TModelMetabolite &Product(const int index);
00202         TModelMetabolite &Parameter(const int index);
00203
00204 };
00205
00206
00207 // ---------------------------------------------------------
00208 //                     TRunConfig
00209 // ---------------------------------------------------------
00210
00211
00212 class TRunConfig
00213 {
00214     private:    // private members
00215         double m_initTime;
00216         double m_endTime;
00217         size_t m_cycles;
00218         QString m_paramList;
00219
00220
00221     public:     // constructors
00222         TRunConfig(double v_initTime = 0, double v_endTime    = 0,
00223                    size_t v_cycles   = 0, QString v_paramList = ""):
00224                    m_initTime(v_initTime), m_endTime (v_endTime),
00225                    m_cycles (v_cycles), m_paramList (v_paramList){};
00226
00227     public:     // getters/setters
00228         double getInitTime();
00229         void setInitTime(double t);
00230         double getEndTime();
00231         void setEndTime(double t);
00232         size_t getCycles();
00233         void setCycles(size_t value);
00234         QString getParamList();
00235         void setParamList(QString pList);
00236
00237
00238     public:     //public methods
00239
00240 };
00241
00242
00243 // ---------------------------------------------------------
00244 //                     TFrameData
00245 // ---------------------------------------------------------
00246
00247
00248 class TFrameData
00249 {
00250 private:    // private members
00251
00252 public:     // constructors
00253
00254 public:     // getters/setters
00255
00256 public:     //public methods
00257
00258 };
00259
00260
00261 // ---------------------------------------------------------
00262 //                     TPathway
00263 // ---------------------------------------------------------
00264
00265
00266 class TPathway
00267 {
00268 private:    // private members
00269
00270 public:     // constructors
00271
00272 public:     // getters/setters
00273
00274 public:     //public methods
00275
00276 };
00277
00278
```

6.3 main_asimov.h

```
00001 #ifndef MAIN_ASIMOV_H
00002 #define MAIN_ASIMOV_H
00003
00004 #include <QMainWindow>
00005 #include "asimov_library.h"
00006
00007 QT_BEGIN_NAMESPACE
00008 namespace Ui {
00009 class main_asimov;
00010 }
00011 QT_END_NAMESPACE
00012
00013 class main_asimov : public QMainWindow
00014 {
00015     Q_OBJECT
00016
00017 public:
00018     main_asimov(QWidget *parent = nullptr);
00019     ~main_asimov();
00020
00021
00022 private slots:
00023     void on_actionAbrir_triggered();
00024
00025     void on_pushButton_clicked();
00026
00027     void on_buttomMetanode_clicked();
00028
00029     void on_parameter_button_clicked();
00030
00031     void on_actionGuardar_triggered();
00032
00033 private:
00034     Ui::main_asimov *ui;
00035     TRawInput rawInput;
00036 };
00037 #endif // MAIN_ASIMOV_H
```

Index