My Vensin

Generated by Doxygen 1.10.0

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

- Flow . . . . . **??**
  - FlowIMP . . . . . **??**
    - Exponencial . . . . . **??**
    - Flow_unit_test . . . . . **??**
    - Logistical . . . . . **??**
- Model . . . . . **??**
  - ModelIMP . . . . . **??**
- System . . . . . **??**
  - SystemIMP . . . . . **??**

Chapter 2

Class Index

2.1 Class List

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

Exponencial . . . . . ??
Flow . . . . . ??
Flow_unit_test . . . . . ??
FlowIMP . . . . . ??
Logistical . . . . . ??
Model . . . . . ??
ModelIMP . . . . . ??
System . . . . . ??
SystemIMP . . . . . ??

Chapter 3

File Index

3.1 File List

Here is a list of all files with brief descriptions:

/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/Flow.h . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/FlowIMP.cpp ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/FlowIMP.h . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/Model.h . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/ModelIMP.cpp ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/ModelIMP.h ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/System.h . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/SystemIMP.cpp ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/SystemIMP.h ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_tests/src/Exponencial.cpp . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_tests/src/Exponencial.h . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_tests/src/Functional_tests.cpp . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_tests/src/Functional_tests.h . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_tests/src/Logistical.cpp . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_tests/src/Logistical.h . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_tests/src/main.cpp . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/unit_tests/src/main.cpp . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/unit_tests/src/unit_Flow.cpp . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/unit_tests/src/unit_Flow.h . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/unit_tests/src/unit_Model.cpp . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/unit_tests/src/unit_Model.h . . . ??

/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/unit_↩
tests/src/unit_System.cpp . . . . . ??
/home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/unit_↩
tests/src/unit_System.h . . . . . ??

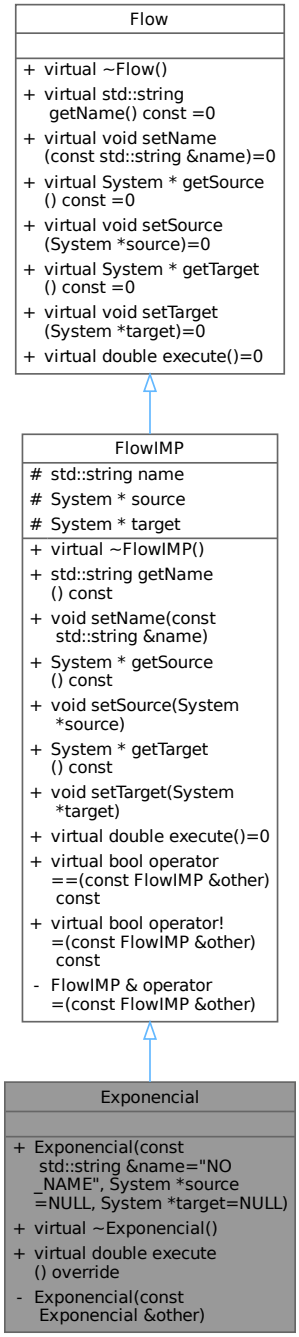
Chapter 4

Class Documentation

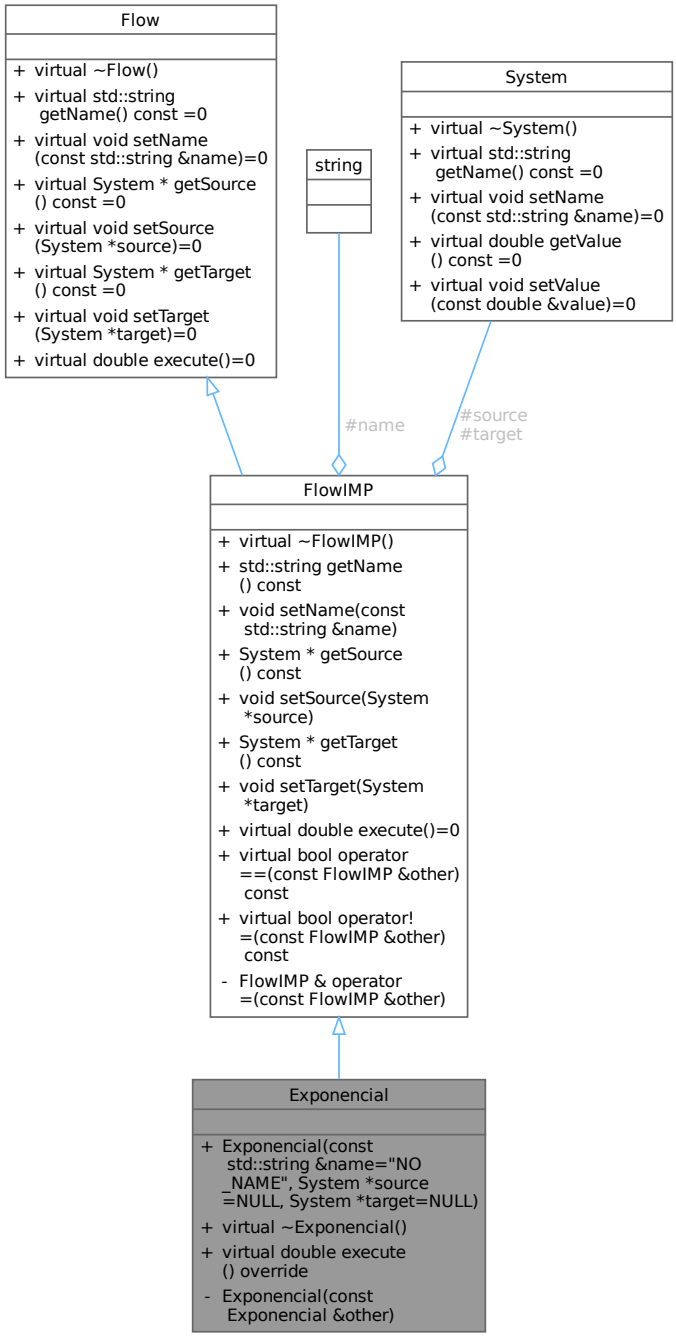
4.1 Exponencial Class Reference

`#include <Exponencial.h>`

Inheritance diagram for Exponencial:



Collaboration diagram for Exponencial:



Public Member Functions

- Exponencial (const std::string &name="NO_NAME", System *source=NULL, System *target=NULL)

  Construct a new Exponencial by name, source and target.
- virtual ~Exponencial ()

  This destructor is a virtual destructor of the Class.
- virtual double execute () override

  Pure virtual method that will contain an equation that will be executed in the flow by the model.

Public Member Functions inherited from FlowIMP

- virtual ~FlowIMP ()

  This destructor is a virtual destructor of the class.
- std::string getName () const

  This method returns the name of a flow.
- void setName (const std::string &name)

  This method assigns a string to the name of a flow obj.
- System * getSource () const

  This method returns the source system poiter.
- void setSource (System *source)

  This method assigns a system poiter to the source of a flow obj.
- System * getTarget () const

  This method returns the target system poiter.
- void setTarget (System *target)

  This method assigns a system poiter to the target of a flow obj.
- virtual bool operator== (const FlowIMP &other) const

  This method is overloading the '==' operator, compare two flows objs.
- virtual bool operator!= (const FlowIMP &other) const

  This method is overloading the '!=' operator, compare two flows objs.

Public Member Functions inherited from Flow

- virtual ~Flow ()

  This destructor is a virtual destructor of the class.

Private Member Functions

- Exponencial (const Exponencial &other)

  Construct a new Exponencial by a obj.

Additional Inherited Members

Protected Attributes inherited from FlowIMP

- std::string name
- System * source
- System * target

4.1.1 Constructor & Destructor Documentation

4.1.1.1 Exponencial() [1/2]

```
Exponencial::Exponencial (
            const Exponencial & other )  [private]
```

Construct a new Exponencial by a obj.

Parameters

other	Exponencial obj

```
00011                                                {
00012     this->name = other.name;
00013     this->source = other.source;
00014     this->target = other.target;
00015 }
```

References FlowIMP::name, FlowIMP::source, and FlowIMP::target.

4.1.1.2 Exponencial() [2/2]

```
Exponencial::Exponencial (
            const std::string & name = "NO_NAME",
            System * source = NULL,
            System * target = NULL )
```

Construct a new Exponencial by name, source and target.

Parameters

name	string with default value "NO_NAME"
source	System pointer with default value NULL
target	System pointer with default value NULL

```
00004                                                                                {
00005     this->name = name;
00006     this->source = source;
00007     this->target = target;
00008 }
```

References FlowIMP::name, FlowIMP::source, and FlowIMP::target.

4.1.1.3 ~Exponencial()

```
Exponencial::~Exponencial ( )  [virtual]
```

This destructor is a virtual destructor of the Class.

```
00018 {}
```

4.1.2 Member Function Documentation

4.1.2.1 execute()

```
double Exponencial::execute ( )  [override], [virtual]
```

Pure virtual method that will contain an equation that will be executed in the flow by the model.

Returns

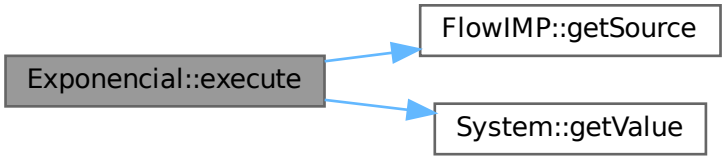
double

Implements FlowIMP.

```
00020                               {
00021     return getSource()->getValue() * 0.01;
00022 }
```

References FlowIMP::getSource(), and System::getValue().

Here is the call graph for this function:



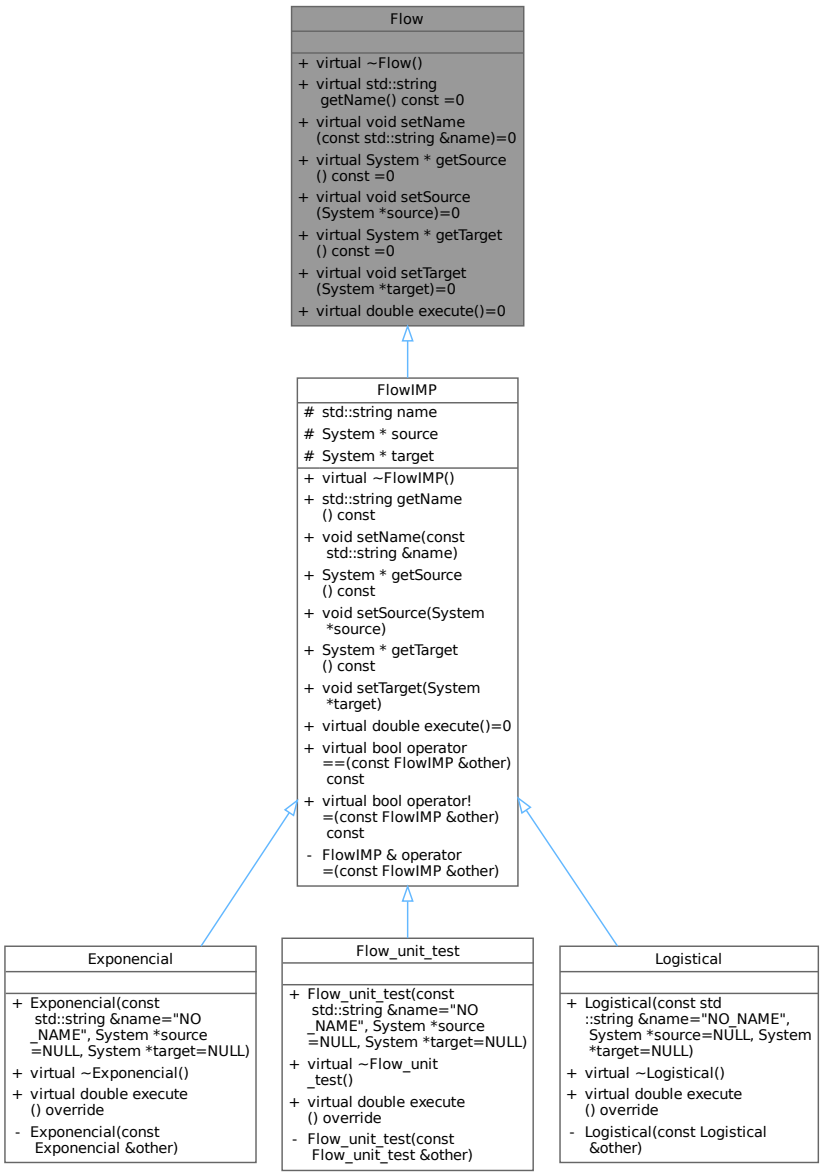
The documentation for this class was generated from the following files:

- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_↩ tests/src/Exponencial.h
- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_↩ tests/src/Exponencial.cpp

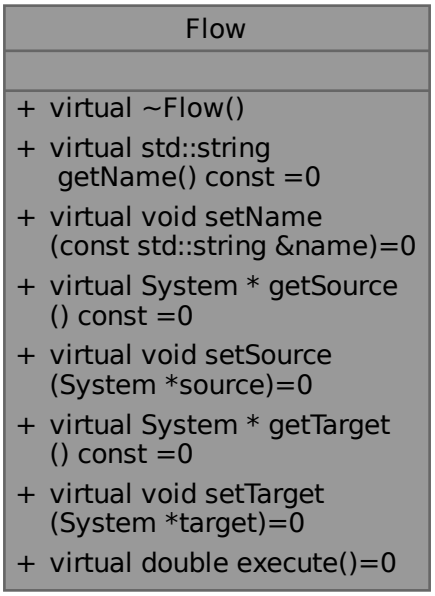
4.2 Flow Class Reference

`#include <Flow.h>`

Inheritance diagram for Flow:



Collaboration diagram for Flow:



Public Member Functions

- virtual ~Flow ()

  This destructor is a virtual destructor of the class.
- virtual std::string getName () const =0

  This method returns the name of a flow.
- virtual void setName (const std::string &name)=0

  This method assigns a string to the name of a flow obj.
- virtual System * getSource () const =0

  This method returns the source system poiter.
- virtual void setSource (System *source)=0

  This method assigns a system poiter to the source of a flow obj.
- virtual System * getTarget () const =0

  This method returns the target system poiter.
- virtual void setTarget (System *target)=0

  This method assigns a system poiter to the target of a flow obj.
- virtual double execute ()=0

  Pure virtual method that will be inherited by subclasses created by the user, this one will contain an equation that will be executed in the flow by the model.

4.2.1 Constructor & Destructor Documentation

4.2.1.1 ~Flow()

```
virtual Flow::~Flow ( )  [inline], [virtual]
```

This destructor is a virtual destructor of the class.
```
00024 {};
```

Referenced by test_Flow_destructor().

Here is the caller graph for this function:

4.2.2 Member Function Documentation

4.2.2.1 execute()

```
virtual double Flow::execute ( )  [pure virtual]
```

Pure virtual method that will be inherited by subclasses created by the user, this one will contain an equation that will be executed in the flow by the model.

Returns

double

Implemented in Exponencial, Logistical, Flow_unit_test, and FlowIMP.

Referenced by test_Flow_execute().

Here is the caller graph for this function:

4.2.2.2 getName()

```
virtual std::string Flow::getName ( ) const  [pure virtual]
```

This method returns the name of a flow.

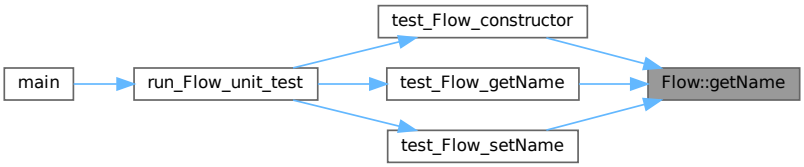
Returns

a string containing the name is returned

Implemented in FlowIMP.

Referenced by test_Flow_constructor(), test_Flow_getName(), and test_Flow_setName().

Here is the caller graph for this function:



4.2.2.3 getSource()

```
virtual System * Flow::getSource ( ) const  [pure virtual]
```

This method returns the source system poiter.

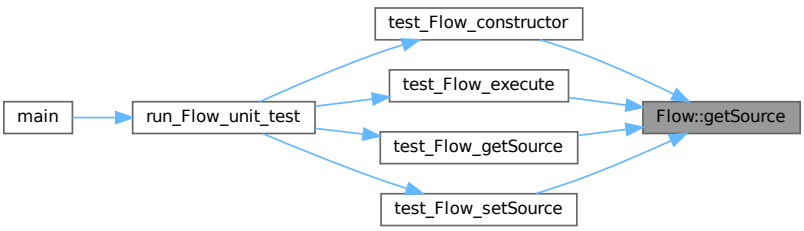
Returns

a system poiter containing the source memory address is returned

Implemented in FlowIMP.

Referenced by test_Flow_constructor(), test_Flow_execute(), test_Flow_getSource(), and test_Flow_setSource().

Here is the caller graph for this function:



4.2.2.4 getTarget()

```
virtual System * Flow::getTarget ( ) const  [pure virtual]
```

This method returns the target system poiter.

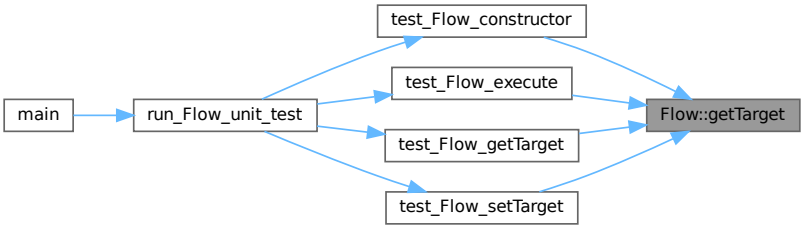
Returns

a system poiter containing the target memory address is returned

Implemented in FlowIMP.

Referenced by test_Flow_constructor(), test_Flow_execute(), test_Flow_getTarget(), and test_Flow_setTarget().

Here is the caller graph for this function:



4.2.2.5 setName()

```
virtual void Flow::setName (
            const std::string & name )  [pure virtual]
```

This method assigns a string to the name of a flow obj.

Parameters

name	string must be passed to the method

Implemented in FlowIMP.

Referenced by test_Flow_setName().

Here is the caller graph for this function:

4.2.2.6 setSource()

```
virtual void Flow::setSource (
            System * source )  [pure virtual]
```

This method assigns a system poiter to the source of a flow obj.

Parameters

source	system poiter must be passed to the method

Implemented in FlowIMP.

Referenced by test_Flow_setSource().

Here is the caller graph for this function:

4.2.2.7 setTarget()

```
virtual void Flow::setTarget (
            System * target )  [pure virtual]
```

This method assigns a system poiter to the target of a flow obj.

Parameters

target	system poiter must be passed to the method

Implemented in FlowIMP.

Referenced by test_Flow_setTarget().

Here is the caller graph for this function:

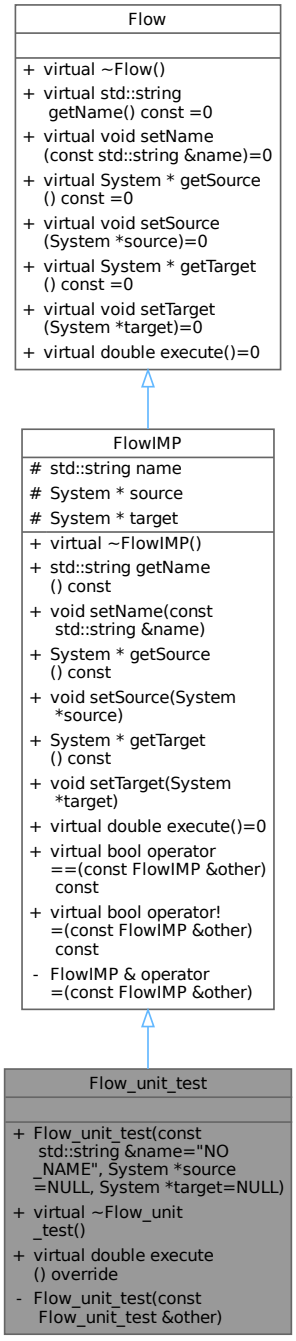
The documentation for this class was generated from the following file:

- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/Flow.h

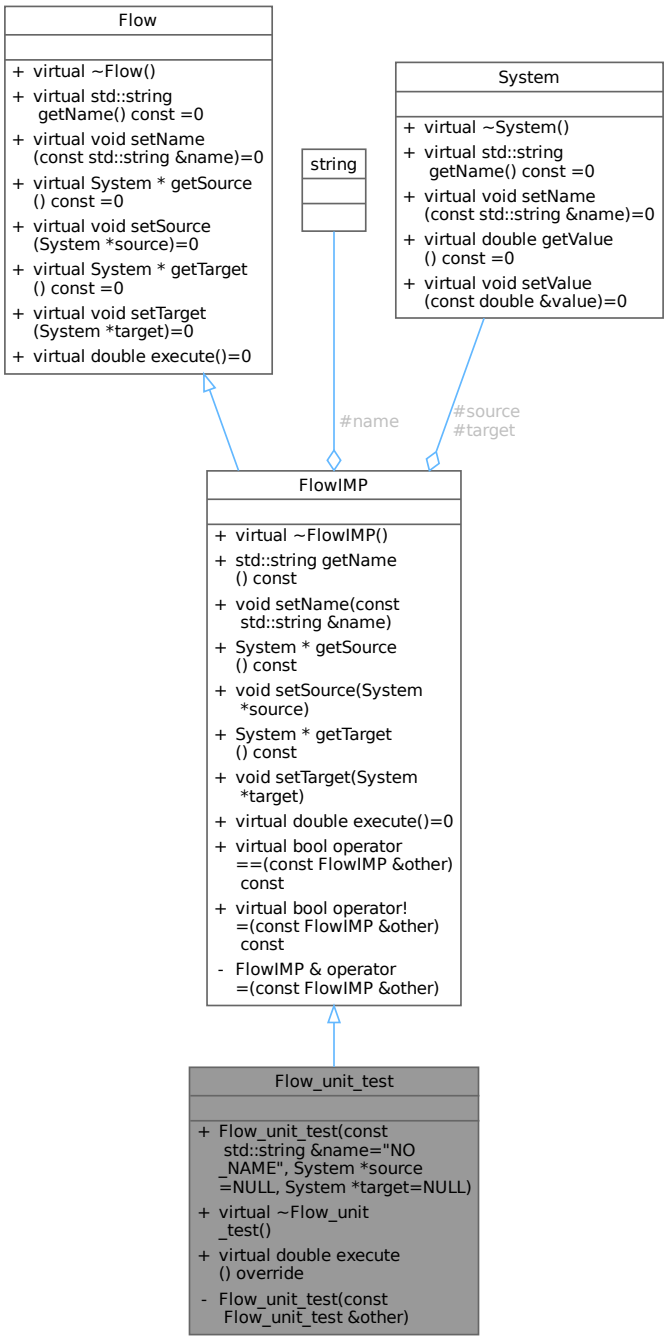
4.3 Flow_unit_test Class Reference

`#include <unit_Flow.h>`

Inheritance diagram for Flow_unit_test:



Collaboration diagram for Flow_unit_test:



Public Member Functions

- Flow_unit_test (const std::string &name="NO_NAME", System *source=NULL, System *target=NULL)

  Construct a new Flow_unit_test by name, source and target.
- virtual ~Flow_unit_test ()

  This destructor is a virtual destructor of the Class.
- virtual double execute () override

  Pure virtual method that will contain an equation that will be executed in the flow by the model.

Public Member Functions inherited from FlowIMP

- virtual ~FlowIMP ()

  This destructor is a virtual destructor of the class.
- std::string getName () const

  This method returns the name of a flow.
- void setName (const std::string &name)

  This method assigns a string to the name of a flow obj.
- System * getSource () const

  This method returns the source system poiter.
- void setSource (System *source)

  This method assigns a system poiter to the source of a flow obj.
- System * getTarget () const

  This method returns the target system poiter.
- void setTarget (System *target)

  This method assigns a system poiter to the target of a flow obj.
- virtual bool operator== (const FlowIMP &other) const

  This method is overloading the '==' operator, compare two flows objs.
- virtual bool operator!= (const FlowIMP &other) const

  This method is overloading the '!=' operator, compare two flows objs.

Public Member Functions inherited from Flow

- virtual ~Flow ()

  This destructor is a virtual destructor of the class.

Private Member Functions

- Flow_unit_test (const Flow_unit_test &other)

  Construct a new Exponencial by a obj.

Additional Inherited Members

Protected Attributes inherited from FlowIMP

- std::string name
- System * source
- System * target

4.3.1 Constructor & Destructor Documentation

4.3.1.1 Flow_unit_test() [1/2]

```
Flow_unit_test::Flow_unit_test (
            const Flow_unit_test & other )  [private]
```

Construct a new Exponencial by a obj.

Parameters

other	Exponencial obj

```
00010                                                   {
00011     this->name = other.name;
00012     this->source = other.source;
00013     this->target = other.target;
00014 }
```

References FlowIMP::name, FlowIMP::source, and FlowIMP::target.

4.3.1.2 Flow_unit_test() [2/2]

```
Flow_unit_test::Flow_unit_test (
            const std::string & name = "NO_NAME",
            System * source = NULL,
            System * target = NULL )
```

Construct a new Flow_unit_test by name, source and target.

Parameters

name	string with default value "NO_NAME"
source	System pointer with default value NULL
target	System pointer with default value NULL

```
00003                                                                                   {
00004     this->name = name;
00005     this->source = source;
00006     this->target = target;
00007 }
```

References FlowIMP::name, FlowIMP::source, and FlowIMP::target.

4.3.1.3 ~Flow_unit_test()

```
Flow_unit_test::~Flow_unit_test ( )  [virtual]
```

This destructor is a virtual destructor of the Class.

```
00017 {}
```

4.3.2 Member Function Documentation

4.3.2.1 execute()

```
double Flow_unit_test::execute ( )  [override], [virtual]
```

Pure virtual method that will contain an equation that will be executed in the flow by the model.

Returns

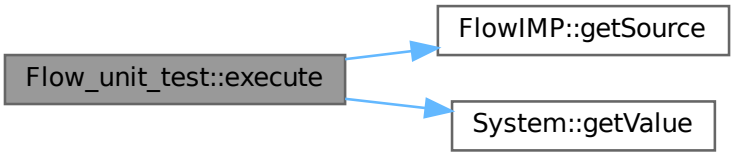
double

Implements FlowIMP.

```
00019                                {
00020     return getSource()->getValue();
00021 }
```

References FlowIMP::getSource(), and System::getValue().

Here is the call graph for this function:



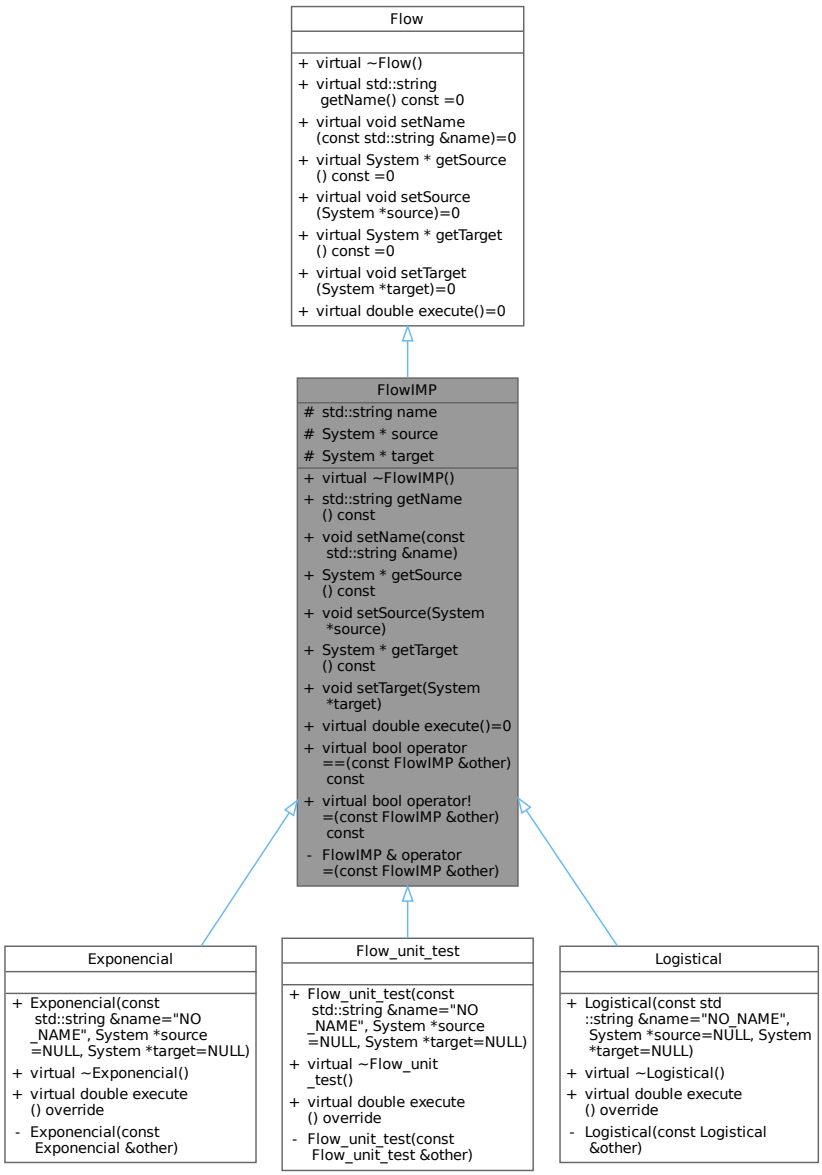
The documentation for this class was generated from the following files:

- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/unit_↩ tests/src/unit_Flow.h
- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/unit_↩ tests/src/unit_Flow.cpp

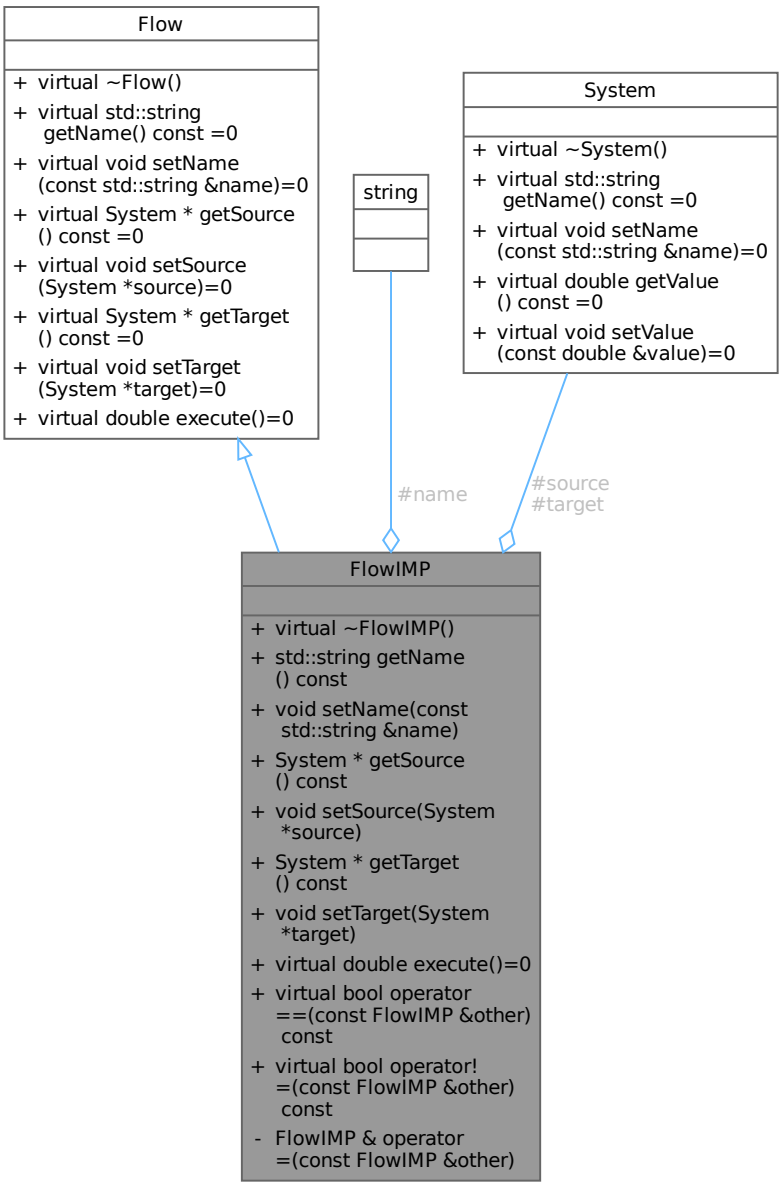
4.4 FlowIMP Class Reference

`#include <FlowIMP.h>`

Inheritance diagram for FlowIMP:



Collaboration diagram for FlowIMP:



Public Member Functions

- virtual ~FlowIMP ()

  This destructor is a virtual destructor of the class.
- std::string getName () const

  This method returns the name of a flow.
- void setName (const std::string &name)

  This method assigns a string to the name of a flow obj.
- System * getSource () const

  This method returns the source system poiter.

- void setSource (System *source)

  This method assigns a system poiter to the source of a flow obj.
- System * getTarget () const

  This method returns the target system poiter.
- void setTarget (System *target)

  This method assigns a system poiter to the target of a flow obj.
- virtual double execute ()=0

  Pure virtual method that will be inherited by subclasses created by the user, this one will contain an equation that will be executed in the flow by the model.
- virtual bool operator== (const FlowIMP &other) const

  This method is overloading the '==' operator, compare two flows objs.
- virtual bool operator!= (const FlowIMP &other) const

  This method is overloading the '!=' operator, compare two flows objs.

Public Member Functions inherited from Flow

- virtual ~Flow ()

  This destructor is a virtual destructor of the class.

Protected Attributes

- std::string name
- System * source
- System * target

Private Member Functions

- FlowIMP & operator= (const FlowIMP &other)

  This method is overloading the '=' operator, "cloning" from one flow to another.

4.4.1 Constructor & Destructor Documentation

4.4.1.1 ~FlowIMP()

```
FlowIMP::~FlowIMP ( )  [virtual]
```

This destructor is a virtual destructor of the class.

```
00004 {}
```

4.4.2 Member Function Documentation

4.4.2.1 execute()

```
virtual double FlowIMP::execute ( )  [pure virtual]
```

Pure virtual method that will be inherited by subclasses created by the user, this one will contain an equation that will be executed in the flow by the model.

Returns

double

Implements Flow.

Implemented in Exponencial, Logistical, and Flow_unit_test.

4.4.2.2 getName()

```
std::string FlowIMP::getName ( ) const  [virtual]
```

This method returns the name of a flow.

Returns

a string containing the name is returned

Implements Flow.

```
00008 { return name; }
```

References name.

4.4.2.3 getSource()

```
System * FlowIMP::getSource ( ) const  [virtual]
```

This method returns the source system poiter.

Returns

a system poiter containing the source memory address is returned

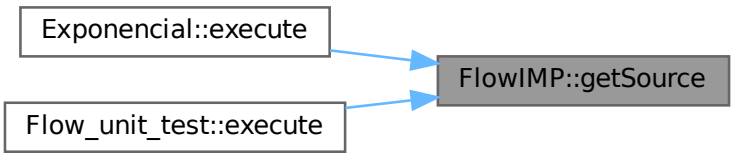
Implements Flow.

```
00011 { return source; }
```

References source.

Referenced by Exponencial::execute(), and Flow_unit_test::execute().

Here is the caller graph for this function:



4.4.2.4 getTarget()

```
System * FlowIMP::getTarget ( ) const  [virtual]
```

This method returns the target system poiter.

Returns

a system poiter containing the target memory address is returned

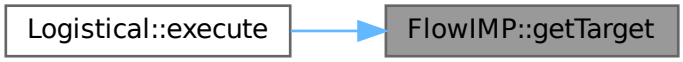
Implements Flow.

```
00014 { return target; }
```

References target.

Referenced by Logistical::execute().

Here is the caller graph for this function:



4.4.2.5 operator"!=()

```
bool FlowIMP::operator!= (
            const FlowIMP & other ) const  [virtual]
```

This method is overloading the '!=' operator, compare two flows objs.

Parameters

other	flow obj to be compare must be passed

Returns

A bool is returned, false if they are equal and true if not

```
00033                                                 {
00034     return (name != other.name || source != other.source || target != other.target);
00035 }
```

References name, source, and target.

4.4.2.6 operator=()

```
FlowIMP & FlowIMP::operator= (
            const FlowIMP & other )  [private]
```

This method is overloading the '=' operator, "cloning" from one flow to another.

Parameters

other	flow obj to be cloned must be passed

Returns

A flow is returned that is a clone of what was passed to the method

```
00019                                                {
00020     if(other == *this) return *this;
00021     name = other.name;
00022     source = other.source;
00023     target = other.target;
00024     return *this;
00025 }
```

References name, source, and target.

4.4.2.7 operator==()

```
bool FlowIMP::operator== (
            const FlowIMP & other ) const  [virtual]
```

This method is overloading the '==' operator, compare two flows objs.

Parameters

other	flow obj to be compare must be passed

Returns

A bool is returned, true if they are equal and false if not

```
00028                                                    {
00029     return (name == other.name && source == other.source && target == other.target);
00030 }
```

References name, source, and target.

4.4.2.8 setName()

```
void FlowIMP::setName (
            const std::string & name )  [virtual]
```

This method assigns a string to the name of a flow obj.

Parameters

name	string must be passed to the method

Implements Flow.

```
00009 { this->name = name; }
```

References name.

Referenced by test_Flow_equal().

Here is the caller graph for this function:

4.4.2.9 setSource()

```
void FlowIMP::setSource (
            System * source )  [virtual]
```

This method assigns a system poiter to the source of a flow obj.

Parameters

source	system poiter must be passed to the method

Implements Flow.

```
00012 { this->source = source; }
```

References source.

4.4.2.10 setTarget()

```
void FlowIMP::setTarget (
            System * target )  [virtual]
```

This method assigns a system poiter to the target of a flow obj.

Parameters

target	system poiter must be passed to the method

Implements Flow.

```
00015 { this->target = target; }
```

References target.

4.4.3 Member Data Documentation

4.4.3.1 name

```
std::string FlowIMP::name  [protected]
```

Name string attribute.

Referenced by Exponencial::Exponencial(), Exponencial::Exponencial(), Flow_unit_test::Flow_unit_test(), Flow_unit_test::Flow_unit_test(), getName(), Logistical::Logistical(), Logistical::Logistical(), operator!=(), operator=(), operator==(), and setName().

4.4.3.2 source

```
System* FlowIMP::source  [protected]
```

Source system pointer attribute.

Referenced by Exponencial::Exponencial(), Exponencial::Exponencial(), Flow_unit_test::Flow_unit_test(), Flow_unit_test::Flow_unit_test(), getSource(), Logistical::Logistical(), Logistical::Logistical(), operator!=(), operator=(), operator==(), and setSource().

4.4.3.3 target

```
System* FlowIMP::target  [protected]
```

Target system pointer attribute.

Referenced by Exponencial::Exponencial(), Exponencial::Exponencial(), Flow_unit_test::Flow_unit_test(), Flow_unit_test::Flow_unit_test(), getTarget(), Logistical::Logistical(), Logistical::Logistical(), operator!=(), operator=(), operator==(), and setTarget().

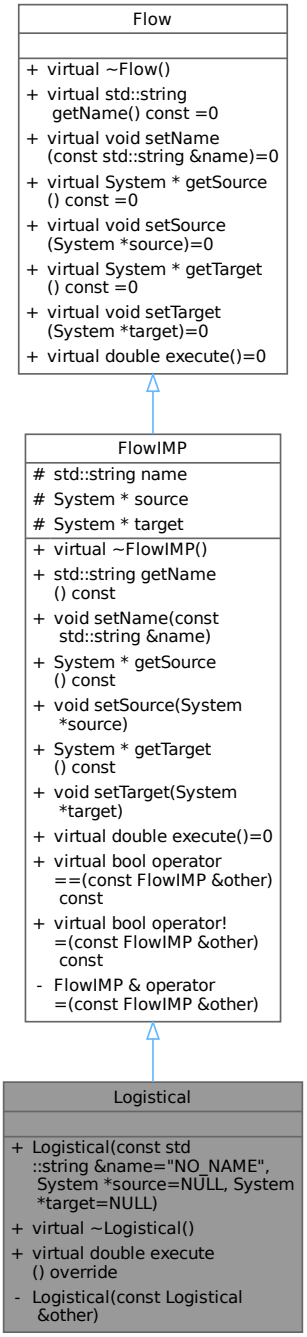
The documentation for this class was generated from the following files:

- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/FlowIMP.h
- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/FlowIMP.cpp

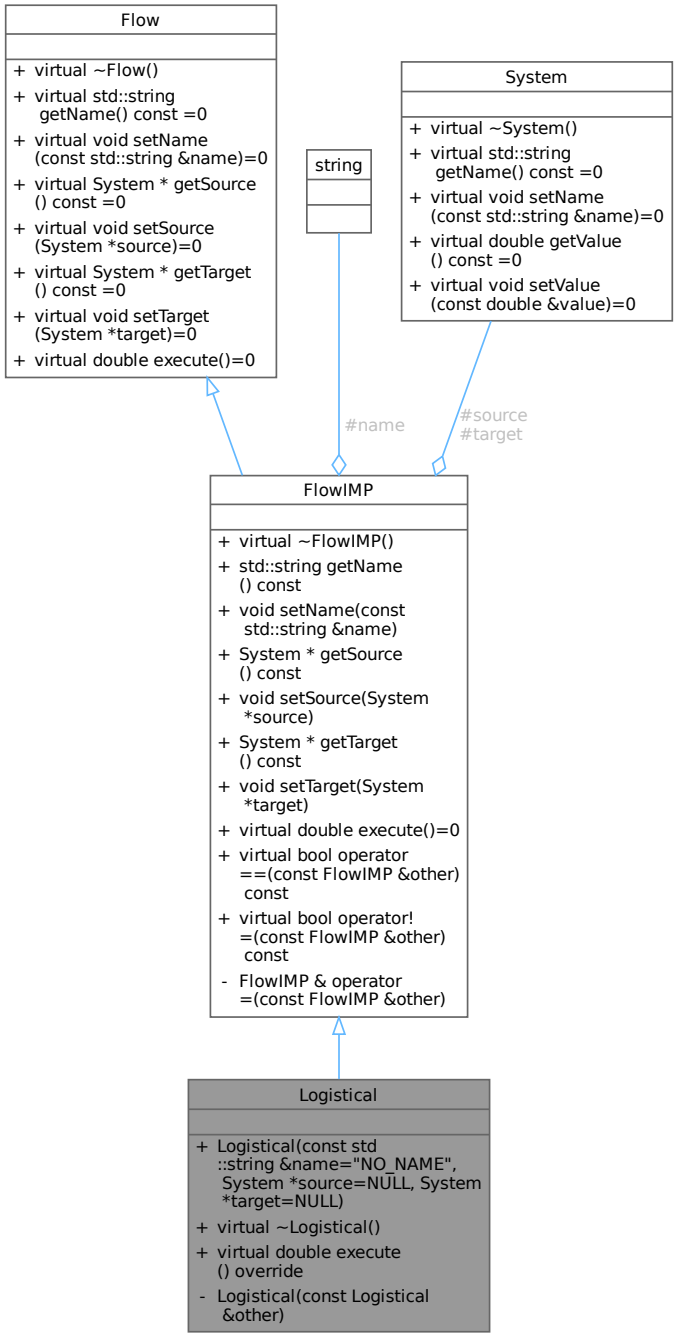
4.5 Logistical Class Reference

```
#include <Logistical.h>
```

Inheritance diagram for Logistical:



Collaboration diagram for Logistical:



Public Member Functions

- Logistical (const std::string &name="NO_NAME", System *source=NULL, System *target=NULL)

  Construct a new Logistical by name, source and target.
- virtual ~Logistical ()

  This destructor is a virtual destructor of the Class.
- virtual double execute () override

  Pure virtual method that will contain an equation that will be executed in the flow by the model.

Public Member Functions inherited from FlowIMP

- virtual ~FlowIMP ()

  This destructor is a virtual destructor of the class.
- std::string getName () const

  This method returns the name of a flow.
- void setName (const std::string &name)

  This method assigns a string to the name of a flow obj.
- System * getSource () const

  This method returns the source system poiter.
- void setSource (System *source)

  This method assigns a system poiter to the source of a flow obj.
- System * getTarget () const

  This method returns the target system poiter.
- void setTarget (System *target)

  This method assigns a system poiter to the target of a flow obj.
- virtual bool operator== (const FlowIMP &other) const

  This method is overloading the '==' operator, compare two flows objs.
- virtual bool operator!= (const FlowIMP &other) const

  This method is overloading the '!=' operator, compare two flows objs.

Public Member Functions inherited from Flow

- virtual ~Flow ()

  This destructor is a virtual destructor of the class.

Private Member Functions

- Logistical (const Logistical &other)

  Construct a new Logistical by a obj.

Additional Inherited Members

Protected Attributes inherited from FlowIMP

- std::string name
- System * source
- System * target

4.5.1 Constructor & Destructor Documentation

4.5.1.1 Logistical() [1/2]

```
Logistical::Logistical (
            const Logistical & other )  [private]
```

Construct a new Logistical by a obj.

Parameters

other	Logistical obj

```
00011                                                {
00012     this->name = other.name;
00013     this->source = other.source;
00014     this->target = other.target;
00015 }
```

References FlowIMP::name, FlowIMP::source, and FlowIMP::target.

4.5.1.2 Logistical() [2/2]

```
Logistical::Logistical (
              const std::string & name = "NO_NAME",
              System * source = NULL,
              System * target = NULL )
```

Construct a new Logistical by name, source and target.

Parameters

name	string with default value "NO_NAME"
source	System pointer with default value NULL
target	System pointer with default value NULL

```
00004                                                                                {
00005     this->name = name;
00006     this->source = source;
00007     this->target = target;
00008 }
```

References FlowIMP::name, FlowIMP::source, and FlowIMP::target.

4.5.1.3 ~Logistical()

```
Logistical::~Logistical ( )  [virtual]
```

This destructor is a virtual destructor of the Class.

```
00018 {}
```

4.5.2 Member Function Documentation

4.5.2.1 execute()

```
double Logistical::execute ( )  [override], [virtual]
```

Pure virtual method that will contain an equation that will be executed in the flow by the model.

Returns

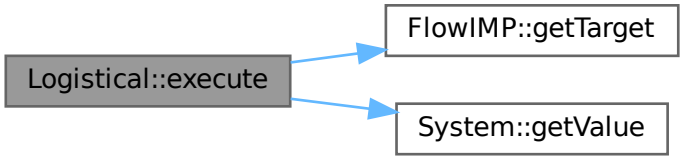
double

Implements FlowIMP.

```
00020                           {
00021     return 0.01 * getTarget()->getValue() * (1.0 - getTarget()->getValue() / 70.0);
00022 }
```

References FlowIMP::getTarget(), and System::getValue().

Here is the call graph for this function:



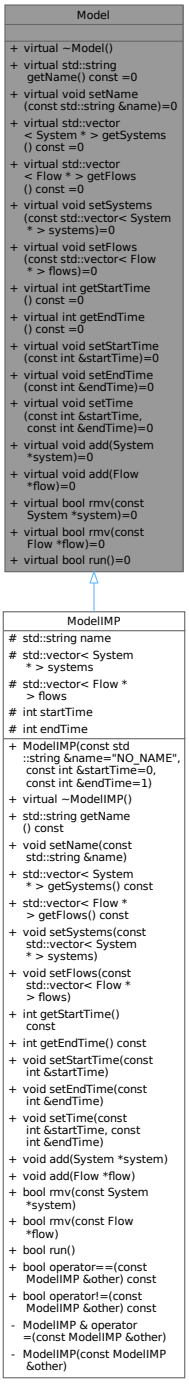
The documentation for this class was generated from the following files:

- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_↩ tests/src/Logistical.h
- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/tests/functional_↩ tests/src/Logistical.cpp

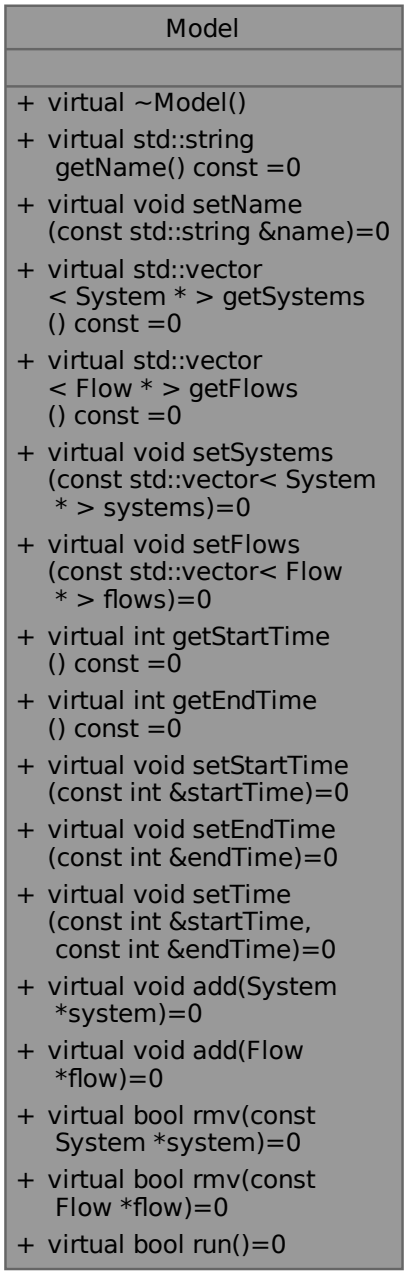
4.6 Model Class Reference

`#include <Model.h>`

Inheritance diagram for Model:



Collaboration diagram for Model:



Public Types

- typedef std::vector< System * >::iterator systemIterator

  typedef vetors iterators
- typedef std::vector< Flow * >::iterator flowIterator

Public Member Functions

- virtual ∼Model ()

  This destructor is a virtual destructor of the class.
- virtual std::string getName () const =0

  This method returns the name of a Model.
- virtual void setName (const std::string &name)=0

  This method assigns a string to the name of a Model.
- virtual std::vector< System * > getSystems () const =0

  This method returns the vector of Systems.
- virtual std::vector< Flow * > getFlows () const =0

  This method returns the vector of flows.
- virtual void setSystems (const std::vector< System * > systems)=0

  This method assigns a vector to the systems of a Model.
- virtual void setFlows (const std::vector< Flow * > flows)=0

  This method assigns a vector to the flows of a Model.
- virtual int getStartTime () const =0

  This method returns the startTime of a Model.
- virtual int getEndTime () const =0

  This method returns the end of a Model.
- virtual void setStartTime (const int &startTime)=0

  This method assigns a int to the startTime of a Model.
- virtual void setEndTime (const int &endTime)=0

  This method assigns a int to the endTime of a Model.
- virtual void setTime (const int &startTime, const int &endTime)=0

  This method assigns a int to the startTime and endTime of a Model.
- virtual void add (System *system)=0

  This method add a System pointer to the vector of a Model.
- virtual void add (Flow *flow)=0

  This method add a Flow pointer to the vector of a Model.
- virtual bool rmv (const System *system)=0

  This method remove a System pointer of the vector of a Model.
- virtual bool rmv (const Flow *flow)=0

  This method remove a Flow pointer of the vector of a Model.
- virtual bool run ()=0

  This method run all model.

4.6.1 Member Typedef Documentation

4.6.1.1 flowIterator

```
typedef std::vector<Flow*>::iterator Model::flowIterator
```

4.6.1.2 systemIterator

```
typedef std::vector<System*>::iterator Model::systemIterator
```

typedef vetors iterators

4.6.2 Constructor & Destructor Documentation

4.6.2.1 ~Model()

```
virtual Model::~Model ( )  [inline], [virtual]
```

This destructor is a virtual destructor of the class.
```
00032 {};
```

Referenced by test_Model_destructor().

Here is the caller graph for this function:

4.6.3 Member Function Documentation

4.6.3.1 add() [1/2]

```
virtual void Model::add (
            Flow * flow )  [pure virtual]
```

This method add a Flow pointer to the vector of a Model.

Parameters

flow	Flow pointer must be passed to the method

Implemented in ModelIMP.

4.6.3.2 add() [2/2]

```
virtual void Model::add (
            System * system )  [pure virtual]
```

This method add a System pointer to the vector of a Model.

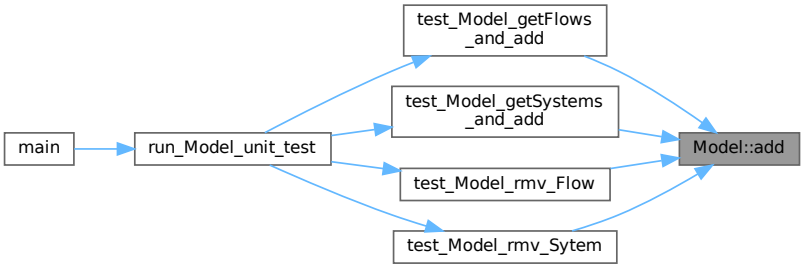
Parameters

system	System pointer must be passed to the method

Implemented in ModelIMP.

Referenced by test_Model_getFlows_and_add(), test_Model_getSystems_and_add(), test_Model_rmv_Flow(), and test_Model_rmv_Sytem().

Here is the caller graph for this function:



4.6.3.3 getEndTime()

```
virtual int Model::getEndTime ( ) const  [pure virtual]
```

This method returns the end of a Model.

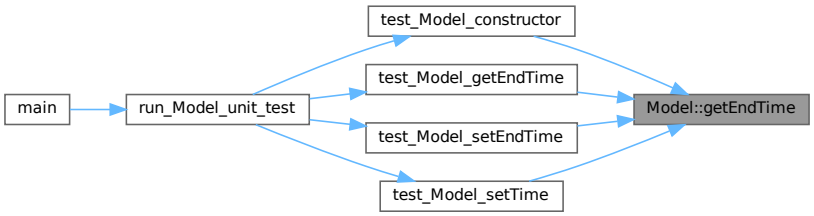
Returns

a int containing the end is returned

Implemented in ModelIMP.

Referenced by test_Model_constructor(), test_Model_getEndTime(), test_Model_setEndTime(), and test_Model_setTime().

Here is the caller graph for this function:



4.6.3.4 getFlows()

```
virtual std::vector< Flow * > Model::getFlows ( ) const  [pure virtual]
```

This method returns the vector of flows.

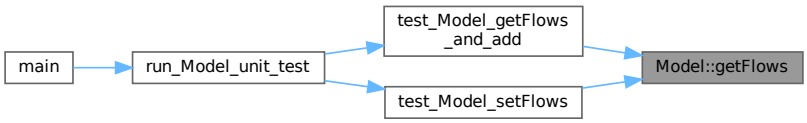
Returns

a vector containing Flows is returned

Implemented in ModelIMP.

Referenced by test_Model_getFlows_and_add(), and test_Model_setFlows().

Here is the caller graph for this function:



4.6.3.5 getName()

```
virtual std::string Model::getName ( ) const  [pure virtual]
```

This method returns the name of a Model.

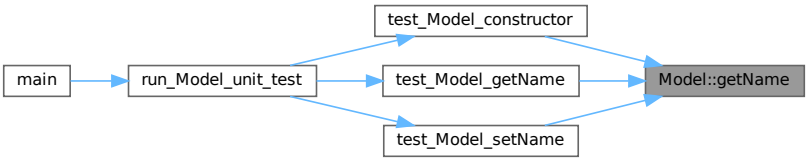
Returns

a string containing the name is returned

Implemented in ModelIMP.

Referenced by test_Model_constructor(), test_Model_getName(), and test_Model_setName().

Here is the caller graph for this function:



4.6.3.6 getStartTime()

```
virtual int Model::getStartTime ( ) const  [pure virtual]
```

This method returns the startTime of a Model.

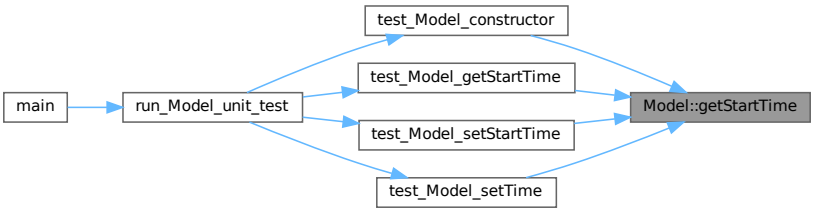
Returns

a int containing the startTime is returned

Implemented in ModelIMP.

Referenced by test_Model_constructor(), test_Model_getStartTime(), test_Model_setStartTime(), and test_Model_setTime().

Here is the caller graph for this function:



4.6.3.7 getSystems()

```
virtual std::vector< System * > Model::getSystems ( ) const  [pure virtual]
```

This method returns the vector of Systems.

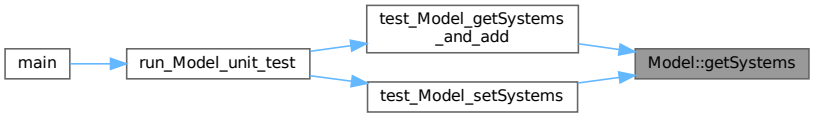
Returns

a vector containing Systems is returned

Implemented in ModelIMP.

Referenced by test_Model_getSystems_and_add(), and test_Model_setSystems().

Here is the caller graph for this function:



4.6.3.8 rmv() [1/2]

```
virtual bool Model::rmv (
            const Flow * flow )  [pure virtual]
```

This method remove a Flow pointer of the vector of a Model.

Parameters

flow	Flow pointer iterator must be passed to the method

Returns

a bool value, true if can remove, false if not

Implemented in ModelIMP.

4.6.3.9 rmv() [2/2]

```
virtual bool Model::rmv (
            const System * system )  [pure virtual]
```

This method remove a System pointer of the vector of a Model.

Parameters

system	System pointer iterator must be passed to the method

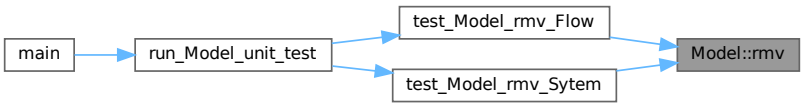
Returns

a bool value, true if can remove, false if not

Implemented in ModelIMP.

Referenced by test_Model_rmv_Flow(), and test_Model_rmv_Sytem().

Here is the caller graph for this function:



4.6.3.10 run()

```
virtual bool Model::run ( )  [pure virtual]
```

This method run all model.

Returns

a bool value, true if can run, false if not

Implemented in ModelIMP.

4.6.3.11 setEndTime()

```
virtual void Model::setEndTime (
            const int & endTime )  [pure virtual]
```

This method assigns a int to the endTime of a Model.

Parameters

endTime	int must be passed to the method

Implemented in ModelIMP.

Referenced by test_Model_setEndTime().

Here is the caller graph for this function:

4.6.3.12 setFlows()

```
virtual void Model::setFlows (
            const std::vector< Flow * > flows )  [pure virtual]
```

This method assigns a vector to the flows of a Model.

Parameters

flows	int must be passed to the method

Implemented in ModelIMP.

Referenced by test_Model_setFlows().

Here is the caller graph for this function:

4.6.3.13 setName()

```
virtual void Model::setName (
            const std::string & name )  [pure virtual]
```

This method assigns a string to the name of a Model.

Parameters

name	string must be passed to the method

Implemented in ModelIMP.

Referenced by test_Model_setName().

Here is the caller graph for this function:

4.6.3.14 setStartTime()

```
virtual void Model::setStartTime (
            const int & startTime )  [pure virtual]
```

This method assigns a int to the startTime of a Model.

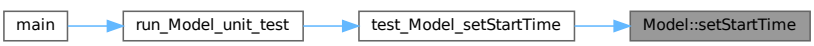
Parameters

startTime	int must be passed to the method

Implemented in ModelIMP.

Referenced by test_Model_setStartTime().

Here is the caller graph for this function:



4.6.3.15 setSystems()

```
virtual void Model::setSystems (
            const std::vector< System * > systems )  [pure virtual]
```

This method assigns a vector to the systems of a Model.

Parameters

systems	int must be passed to the method

Implemented in ModelIMP.

Referenced by test_Model_setSystems().

Here is the caller graph for this function:

4.6.3.16 setTime()

```
virtual void Model::setTime (
            const int & startTime,
            const int & endTime )  [pure virtual]
```

This method assigns a int to the startTime and endTime of a Model.

Parameters

startTime	int must be passed to the method
endTime	int must be passed to the method

Implemented in ModelIMP.

Referenced by test_Model_setTime().

Here is the caller graph for this function:

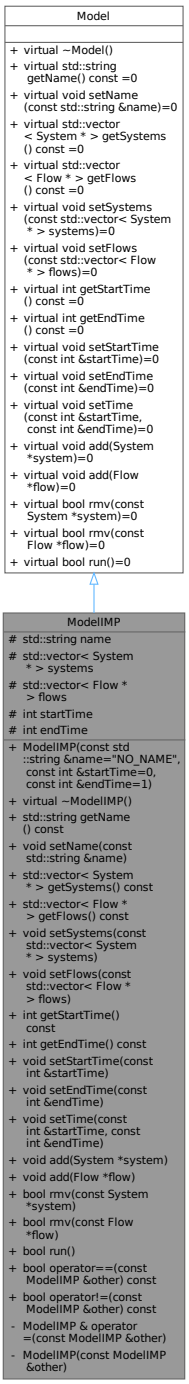
The documentation for this class was generated from the following file:

- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/Model.h

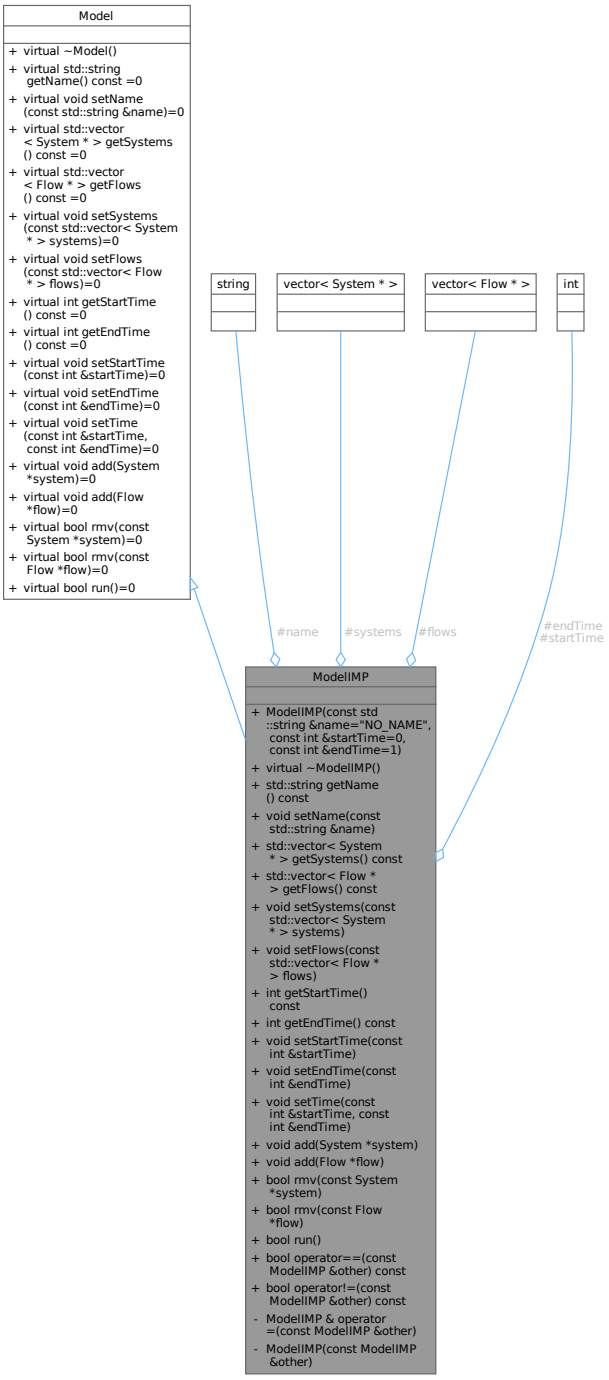
4.7 ModelIMP Class Reference

`#include <ModelIMP.h>`

Inheritance diagram for ModelIMP:



Collaboration diagram for ModelIMP:



Public Member Functions

- ModelIMP (const std::string &name="NO_NAME", const int &startTime=0, const int &endTime=1)

  Construct a new Model by name and sart and end time.
- virtual ~ModelIMP ()

  This destructor is a virtual destructor of the class.
- std::string getName () const

This method returns the name of a Model.

- void setName (const std::string &name)

  This method assigns a string to the name of a Model.
- std::vector< System * > getSystems () const

  This method returns the vector of Systems.
- std::vector< Flow * > getFlows () const

  This method returns the vector of flows.
- void setSystems (const std::vector< System * > systems)

  This method assigns a vector to the systems of a Model.
- void setFlows (const std::vector< Flow * > flows)

  This method assigns a vector to the flows of a Model.
- int getStartTime () const

  This method returns the startTime of a Model.
- int getEndTime () const

  This method returns the end of a Model.
- void setStartTime (const int &startTime)

  This method assigns a int to the startTime of a Model.
- void setEndTime (const int &endTime)

  This method assigns a int to the endTime of a Model.
- void setTime (const int &startTime, const int &endTime)

  This method assigns a int to the startTime and endTime of a Model.
- void add (System *system)

  This method add a System pointer to the vector of a Model.
- void add (Flow *flow)

  This method add a Flow pointer to the vector of a Model.
- bool rmv (const System *system)

  This method remove a System pointer of the vector of a Model.
- bool rmv (const Flow *flow)

  This method remove a Flow pointer of the vector of a Model.
- bool run ()

  This method run all model.
- bool operator== (const ModelIMP &other) const

  This method is overloading the '==' operator, compare two models objs.
- bool operator!= (const ModelIMP &other) const

  This method is overloading the '!=' operator, compare two models objs.

Public Member Functions inherited from Model

- virtual ~Model ()

  This destructor is a virtual destructor of the class.

Protected Attributes

- std::string name
- std::vector< System * > systems
- std::vector< Flow * > flows
- int startTime
- int endTime

Private Member Functions

- ModelIMP & operator= (const ModelIMP &other)

  This method is overloading the '=' operator, "cloning" from one Model to another.
- ModelIMP (const ModelIMP &other)

  Construct a new Model by a obj.

Additional Inherited Members

Public Types inherited from Model

- typedef std::vector< System * >::iterator systemIterator

  typedef vetors iterators
- typedef std::vector< Flow * >::iterator flowIterator

4.7.1 Constructor & Destructor Documentation

4.7.1.1 ModelIMP() [1/2]

```
ModelIMP::ModelIMP (
            const ModelIMP & other )  [private]
```

Construct a new Model by a obj.

Parameters

other	Model obj

```
00006                                       : name(other.name), startTime(other.startTime),
      endTime(other.endTime) {
00007     flows.clear();
00008     systems.clear();
00009     for (auto i : other.flows) flows.push_back(i);
00010     for (auto i : other.systems) systems.push_back(i);
00011 }
```

References flows, and systems.

4.7.1.2 ModelIMP() [2/2]

```
ModelIMP::ModelIMP (
            const std::string & name = "NO_NAME",
            const int & startTime = 0,
            const int & endTime = 1 )
```

Construct a new Model by name and sart and end time.

Parameters

name	string with default value "NO_NAME"
startTime	int with default value 0
endTime	int with default value 1

```
00004 : name(name), startTime(startTime), endTime(endTime) {}
```

4.7.1.3 ~ModelIMP()

```
ModelIMP::~ModelIMP ( )  [virtual]
```

This destructor is a virtual destructor of the class.

```
00014 {systems.clear(); flows.clear();}
```

References flows, and systems.

4.7.2 Member Function Documentation

4.7.2.1 add() [1/2]

```
void ModelIMP::add (
            Flow * flow )  [virtual]
```

This method add a Flow pointer to the vector of a Model.

Parameters

flow	Flow pointer must be passed to the method

Implements Model.

```
00035 { flows.push_back(flow); }
```

References flows.

4.7.2.2 add() [2/2]

```
void ModelIMP::add (
            System * system )  [virtual]
```

This method add a System pointer to the vector of a Model.

Parameters

system	System pointer must be passed to the method

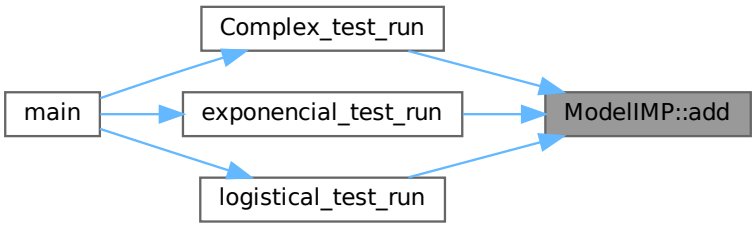
Implements Model.

```
00034 { systems.push_back(system); }
```

References systems.

Referenced by Complex_test_run(), exponencial_test_run(), and logistical_test_run().

Here is the caller graph for this function:



4.7.2.3 getEndTime()

```
int ModelIMP::getEndTime ( ) const  [virtual]
```

This method returns the end of a Model.

Returns

a int containing the end is returned

Implements Model.

```
00027 { return endTime; }
```

References endTime.

4.7.2.4 getFlows()

```
std::vector< Flow * > ModelIMP::getFlows ( ) const  [virtual]
```

This method returns the vector of flows.

Returns

a vector containing Flows is returned

Implements Model.

```
00022 { return flows;};
```

References flows.

4.7.2.5 getName()

```
std::string ModelIMP::getName ( ) const  [virtual]
```

This method returns the name of a Model.

Returns

a string containing the name is returned

Implements Model.

```
00018 { return name; }
```

References name.

4.7.2.6 getStartTime()

```
int ModelIMP::getStartTime ( ) const  [virtual]
```

This method returns the startTime of a Model.

Returns

a int containing the startTime is returned

Implements Model.

```
00026 { return startTime; }
```

References startTime.

4.7.2.7 getSystems()

```
std::vector< System * > ModelIMP::getSystems ( ) const  [virtual]
```

This method returns the vector of Systems.

Returns

a vector containing Systems is returned

Implements Model.

```
00021 { return systems;}
```

References systems.

4.7.2.8 operator"!=()

```
bool ModelIMP::operator!= (
            const ModelIMP & other ) const
```

This method is overloading the '!=' operator, compare two models objs.

Parameters

other	model obj to be compare must be passed

Returns

A bool is returned, false if they are equal and true if not

```
00109                                                 {
00110     return (name != other.name || systems != other.systems || flows != other.flows || startTime !=
      other.startTime || endTime != other.endTime);
00111 }
```

References endTime, flows, name, startTime, and systems.

4.7.2.9 operator=()

```
ModelIMP & ModelIMP::operator= (
            const ModelIMP & other )  [private]
```

This method is overloading the '=' operator, "cloning" from one Model to another.

Parameters

other	Model obj to be cloned must be passed

Returns

A Model is returned that is a clone of what was passed to the method

```
00092                                                 {
00093     if(other == *this) return *this;
00094     name = other.name;
00095     systems = other.systems;
00096     flows.clear();
00097     systems.clear();
00098     for (auto i : other.flows) flows.push_back(i);
00099     for (auto i : other.systems) systems.push_back(i);
00100     startTime = other.startTime;
00101     endTime = other.endTime;
00102     return *this;
00103 }
```

References endTime, flows, name, startTime, and systems.

4.7.2.10 operator==()

```
bool ModelIMP::operator== (
            const ModelIMP & other ) const
```

This method is overloading the '==' operator, compare two models objs.

Parameters

other	model obj to be compare must be passed

Returns

A bool is returned, true if they are equal and false if not

```
00105                                                 {
00106     return (name == other.name && systems == other.systems && flows == other.flows && startTime ==
      other.startTime && endTime == other.endTime);
00107 }
```

References endTime, flows, name, startTime, and systems.

4.7.2.11 rmv() [1/2]

```
bool ModelIMP::rmv (
            const Flow * flow )  [virtual]
```

This method remove a Flow pointer of the vector of a Model.

Parameters

flow	Flow pointer iterator must be passed to the method

Returns

a bool value, true if can remove, false if not

Implements Model.

```
00045                                       {
00046     for(flowIterator i = flows.begin(); i < flows.end(); i++)
00047         if(*i == flow){
00048             flows.erase(i);
00049             return true;
00050         }
00051     return false;
00052 }
```

References flows.

4.7.2.12 rmv() [2/2]

```
bool ModelIMP::rmv (
            const System * system )  [virtual]
```

This method remove a System pointer of the vector of a Model.

Parameters

system	System pointer iterator must be passed to the method

Returns

a bool value, true if can remove, false if not

Implements Model.

```
00037                                       {
```

```
00038     for(systemIterator i = systems.begin(); i < systems.end(); i++)
00039         if(*i == system){
00040             systems.erase(i);
00041             return true;
00042         }
00043     return false;
00044 }
```

References systems.

4.7.2.13 run()

```
bool ModelIMP::run ( )  [virtual]
```

This method run all model.

Returns

a bool value, true if can run, false if not

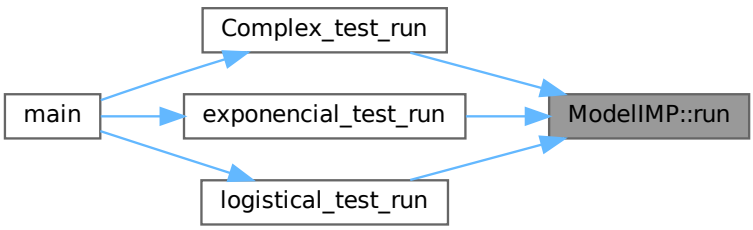
Implements Model.

```
00056                   {
00057     std::vector<double> flowValue;
00058     flowIterator f;
00059     std::vector<double>::iterator d;
00060     double calcValue;
00061
00062     for(int i = startTime; i < endTime; i++){
00063
00064         f = flows.begin();
00065
00066         while (f != flows.end()) {
00067             flowValue.push_back((*f)->execute());
00068             f++;
00069         }
00070
00071         f = flows.begin();
00072         d = flowValue.begin();
00073
00074         while(f != flows.end()){
00075             calcValue = (*f)->getSource()->getValue() - (*d);
00076             (*f)->getSource()->setValue(calcValue);
00077             calcValue = (*f)->getTarget()->getValue() + (*d);
00078             (*f)->getTarget()->setValue(calcValue);
00079             f++;
00080             d++;
00081         }
00082
00083         flowValue.clear();
00084
00085     }
00086
00087     return true;
00088 }
```

References endTime, flows, and startTime.

Referenced by Complex_test_run(), exponencial_test_run(), and logistical_test_run().

Here is the caller graph for this function:



4.7.2.14 setEndTime()

```
void ModelIMP::setEndTime (
            const int & endTime )  [virtual]
```

This method assigns a int to the endTime of a Model.

Parameters

endTime	int must be passed to the method

Implements Model.

```
00029 { this->endTime = endTime; }
```

References endTime.

4.7.2.15 setFlows()

```
void ModelIMP::setFlows (
            const std::vector< Flow * > flows )  [virtual]
```

This method assigns a vector to the flows of a Model.

Parameters

flows	int must be passed to the method

Implements Model.

```
00024 { for(auto i : flows) this->flows.push_back(i);}
```

References flows.

4.7.2.16 setName()

```
void ModelIMP::setName (
            const std::string & name )  [virtual]
```

This method assigns a string to the name of a Model.

Parameters

name	string must be passed to the method

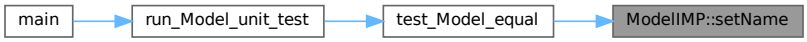
Implements Model.

```
00019 { this->name = name; }
```

References name.

Referenced by test_Model_equal().

Here is the caller graph for this function:



4.7.2.17 setStartTime()

```
void ModelIMP::setStartTime (
            const int & startTime )  [virtual]
```

This method assigns a int to the startTime of a Model.

Parameters

startTime	int must be passed to the method

Implements Model.

```
00028 { this->startTime = startTime; }
```

References startTime.

4.7.2.18 setSystems()

```
void ModelIMP::setSystems (
            const std::vector< System * > systems )  [virtual]
```

This method assigns a vector to the systems of a Model.

Parameters

systems	int must be passed to the method

Implements Model.

```
00023 { for(auto i : systems) this->systems.push_back(i);}
```

References systems.

4.7.2.19 setTime()

```
void ModelIMP::setTime (
            const int & startTime,
            const int & endTime )  [virtual]
```

This method assigns a int to the startTime and endTime of a Model.

Parameters

startTime	int must be passed to the method
endTime	int must be passed to the method

Implements Model.

```
00030 { this->startTime = startTime; this->endTime = endTime; }
```

References endTime, and startTime.

4.7.3 Member Data Documentation

4.7.3.1 endTime

```
int ModelIMP::endTime  [protected]
```

End time simulation integer attribute.

Referenced by getEndTime(), operator!=(), operator=(), operator==(), run(), setEndTime(), and setTime().

4.7.3.2 flows

```
std::vector<Flow*> ModelIMP::flows  [protected]
```

Flow pointers vector.

Referenced by add(), getFlows(), ModelIMP(), operator!=(), operator=(), operator==(), rmv(), run(), setFlows(), and ~ModelIMP().

4.7.3.3 name

```
std::string ModelIMP::name  [protected]
```

Name string attribute.

Referenced by getName(), operator!=(), operator=(), operator==(), and setName().

4.7.3.4 startTime

```
int ModelIMP::startTime  [protected]
```

Start time simulation integer attribute.

Referenced by getStartTime(), operator!=(), operator=(), operator==(), run(), setStartTime(), and setTime().

4.7.3.5 systems

```
std::vector<System*> ModelIMP::systems  [protected]
```

System pointers vector.

Referenced by add(), getSystems(), ModelIMP(), operator!=(), operator=(), operator==(), rmv(), setSystems(), and ~ModelIMP().

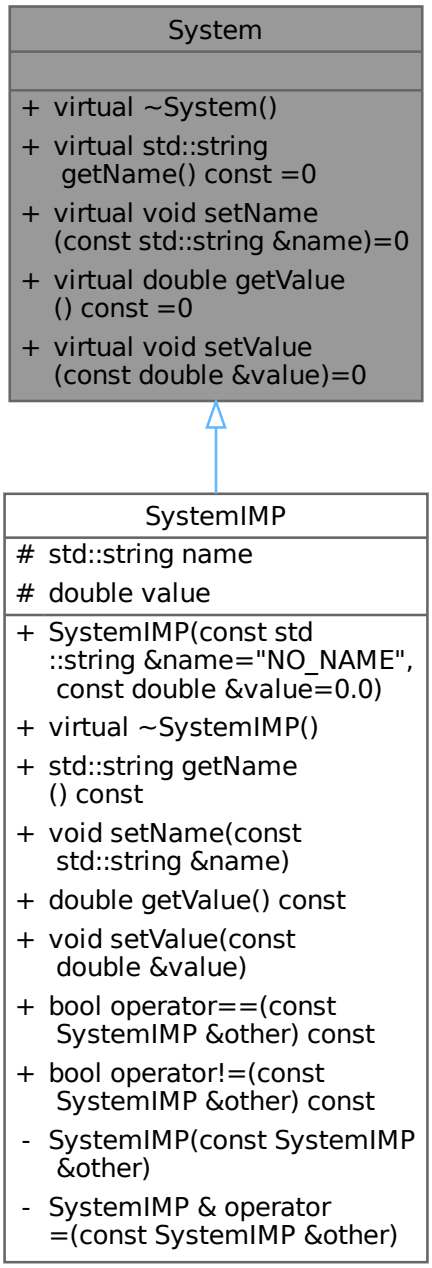
The documentation for this class was generated from the following files:

- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/ModelIMP.h
- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/ModelIMP.cpp

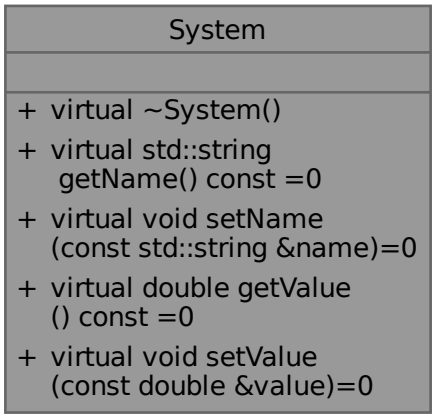
4.8 System Class Reference

```
#include <System.h>
```

Inheritance diagram for System:



Collaboration diagram for System:



Public Member Functions

- virtual ~System ()

  This destructor is a virtual destructor of the Class.
- virtual std::string getName () const =0

  This method returns the name of a system.
- virtual void setName (const std::string &name)=0

  This method assigns a string to the name of a system.
- virtual double getValue () const =0

  This method returns the value of a system.
- virtual void setValue (const double &value)=0

  This method assigns a double to the value of a system.

4.8.1 Constructor & Destructor Documentation

4.8.1.1 ~System()

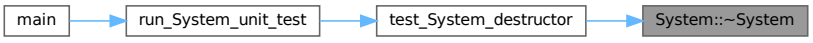
```
virtual System::~System ( )  [inline], [virtual]
```

This destructor is a virtual destructor of the Class.

```
00024 {};
```

Referenced by test_System_destructor().

Here is the caller graph for this function:



4.8.2 Member Function Documentation

4.8.2.1 getName()

```
virtual std::string System::getName ( ) const  [pure virtual]
```

This method returns the name of a system.

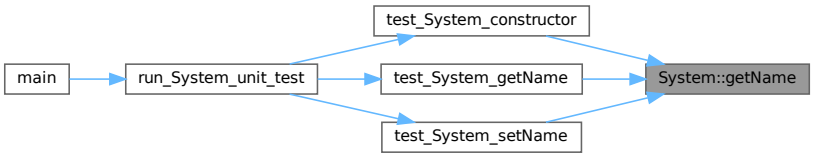
Returns

a string containing the name is returned

Implemented in SystemIMP.

Referenced by test_System_constructor(), test_System_getName(), and test_System_setName().

Here is the caller graph for this function:



4.8.2.2 getValue()

```
virtual double System::getValue ( ) const  [pure virtual]
```

This method returns the value of a system.

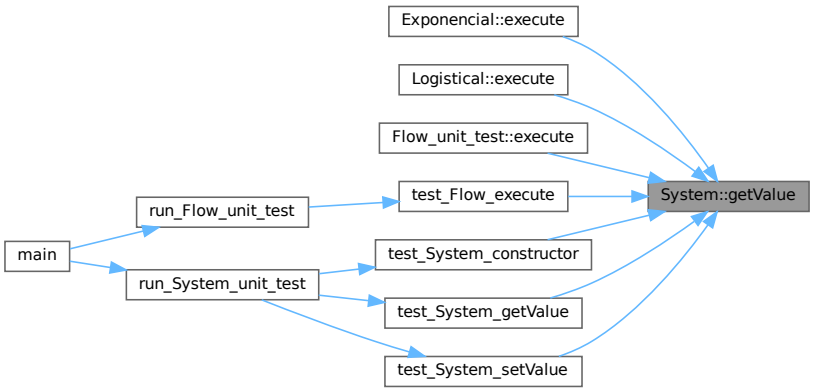
Returns

a double containing the value is returned

Implemented in SystemIMP.

Referenced by Exponencial::execute(), Logistical::execute(), Flow_unit_test::execute(), test_Flow_execute(), test_System_constructor(), test_System_getValue(), and test_System_setValue().

Here is the caller graph for this function:



4.8.2.3 setName()

```
virtual void System::setName (
            const std::string & name )  [pure virtual]
```

This method assigns a string to the name of a system.

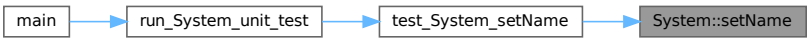
Parameters

name	string must be passed to the method

Implemented in SystemIMP.

Referenced by test_System_setName().

Here is the caller graph for this function:



4.8.2.4 setValue()

```
virtual void System::setValue (
            const double & value )  [pure virtual]
```

This method assigns a double to the value of a system.

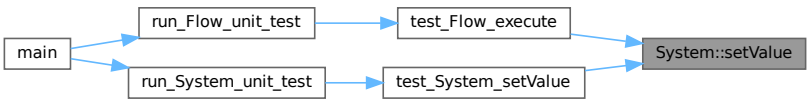
Parameters

value	double must be passed to the method

Implemented in SystemIMP.

Referenced by test_Flow_execute(), and test_System_setValue().

Here is the caller graph for this function:



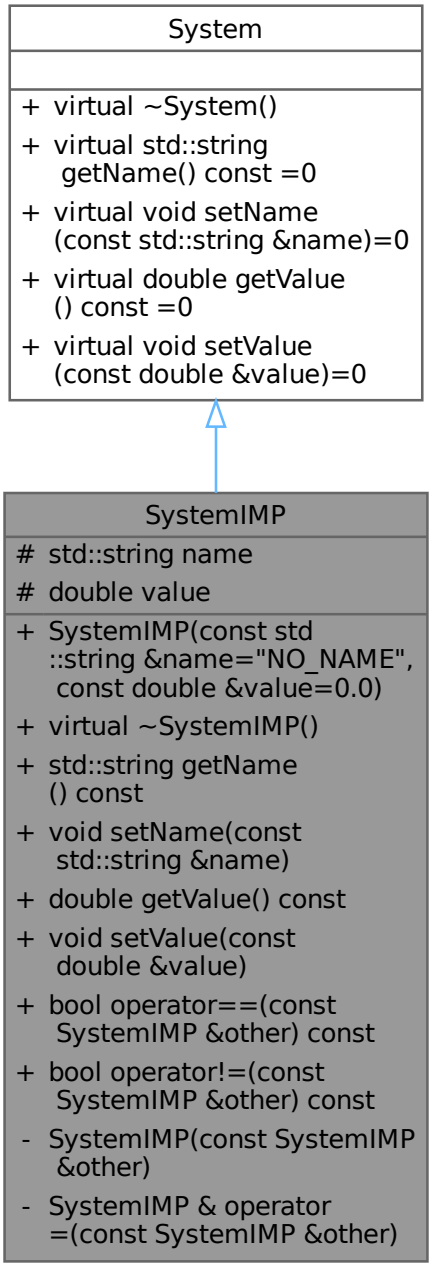
The documentation for this class was generated from the following file:

- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/System.h

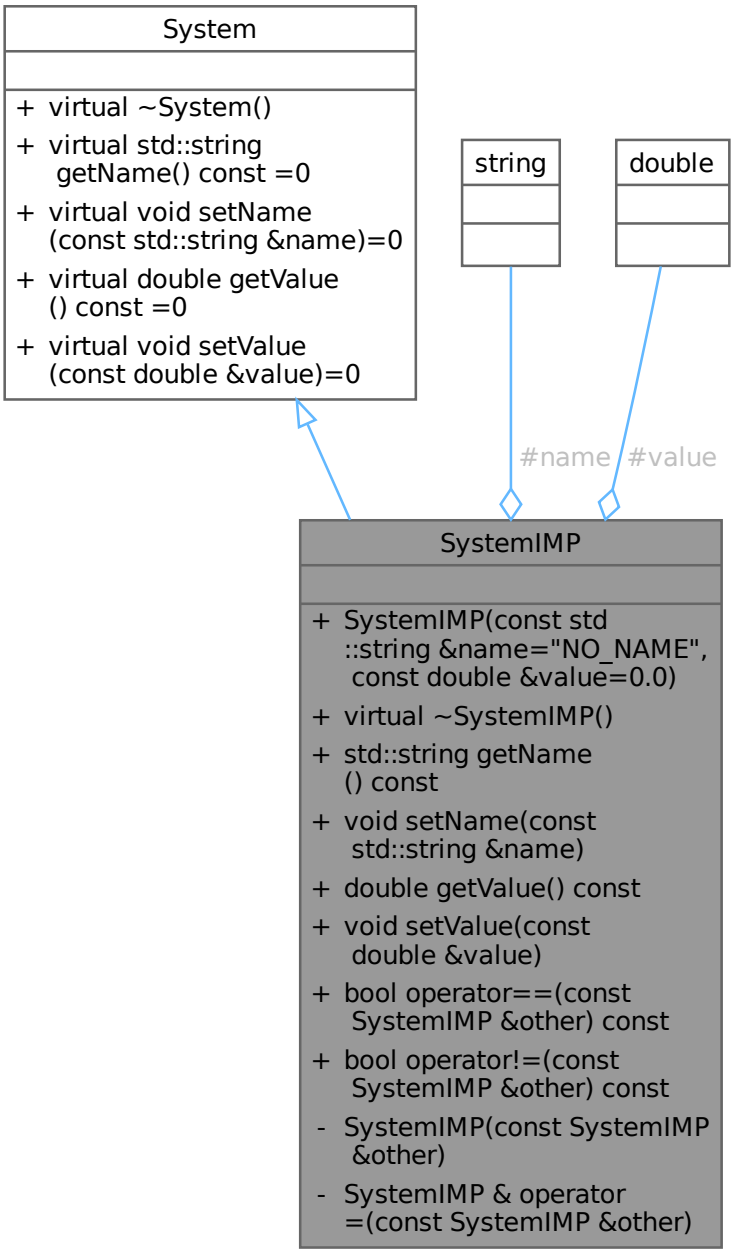
4.9 SystemIMP Class Reference

`#include <SystemIMP.h>`

Inheritance diagram for SystemIMP:



Collaboration diagram for SystemIMP:



Public Member Functions

- SystemIMP (const std::string &name="NO_NAME", const double &value=0.0)

  Construct a new System by name and value.
- virtual ~SystemIMP ()

  This destructor is a virtual destructor of the Class.
- std::string getName () const

This method returns the name of a system.

- void setName (const std::string &name)

  This method assigns a string to the name of a system.
- double getValue () const

  This method returns the value of a system.
- void setValue (const double &value)

  This method assigns a double to the value of a system.
- bool operator== (const SystemIMP &other) const

  This method is overloading the '==' operator, compare two systems objs.
- bool operator!= (const SystemIMP &other) const

  This method is overloading the '!=' operator, compare two systems objs.

Public Member Functions inherited from System

- virtual ~System ()

  This destructor is a virtual destructor of the Class.

Protected Attributes

- std::string name
- double value

Private Member Functions

- SystemIMP (const SystemIMP &other)

  Construct a new System by a obj.
- SystemIMP & operator= (const SystemIMP &other)

  This method is overloading the '=' operator, "cloning" from one system to another.

4.9.1 Constructor & Destructor Documentation

4.9.1.1 SystemIMP() [1/2]

```
SystemIMP::SystemIMP (
            const SystemIMP & other )  [private]
```

Construct a new System by a obj.

Parameters

other	System obj

```
00006 : name(other.name), value(other.value) {}
```

4.9.1.2 SystemIMP() [2/2]

```
SystemIMP::SystemIMP (
```

```
            const std::string & name = "NO_NAME",
            const double & value = 0.0 )
```

Construct a new System by name and value.

Parameters

name	string with default value "NO_NAME"
value	double with default value 0.0

```
00004 : name(name), value(value) {}
```

4.9.1.3 ~SystemIMP()

```
SystemIMP::~SystemIMP ( )  [virtual]
```

This destructor is a virtual destructor of the Class.

```
00009 {};
```

4.9.2 Member Function Documentation

4.9.2.1 getName()

```
std::string SystemIMP::getName ( ) const  [virtual]
```

This method returns the name of a system.

Returns

a string containing the name is returned

Implements System.

```
00013 { return name; }
```

References name.

4.9.2.2 getValue()

```
double SystemIMP::getValue ( ) const  [virtual]
```

This method returns the value of a system.

Returns

a double containing the value is returned

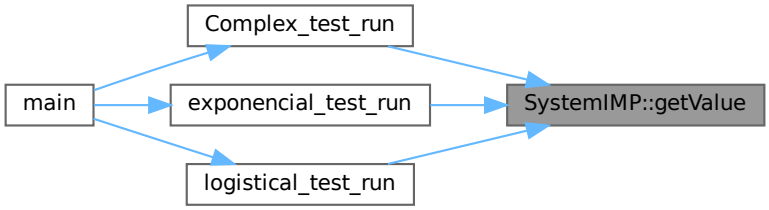
Implements System.

```
00016 { return value; }
```

References value.

Referenced by Complex_test_run(), exponencial_test_run(), and logistical_test_run().

Here is the caller graph for this function:



4.9.2.3 operator"!=()

```
bool SystemIMP::operator!= (
            const SystemIMP & other ) const
```

This method is overloading the '!=' operator, compare two systems objs.

Parameters

other	system obj to be compare must be passed

Returns

A bool is returned, false if they are equal and true if not

```
00034                                                   {
00035     return (name != other.name || value != other.value);
00036     // Compare todos os membros para verificar igualdade
00037 }
```

References name, and value.

4.9.2.4 operator=()

```
SystemIMP & SystemIMP::operator= (
            const SystemIMP & other )  [private]
```

This method is overloading the '=' operator, "cloning" from one system to another.

Parameters

other	system obj to be cloned must be passed

Returns

A system is returned that is a clone of what was passed to the method

```
00021                                                   {
00022     if(other == *this) return *this;
00023     name = other.name;
00024     value = other.value;
00025     return *this;
00026 }
```

References name, and value.

4.9.2.5 operator==()

```
bool SystemIMP::operator== (
            const SystemIMP & other ) const
```

This method is overloading the '==' operator, compare two systems objs.

Parameters

other	system obj to be compare must be passed

Returns

A bool is returned, true if they are equal and false if not

```
00028                                                   {
00029     return (name == other.name && value == other.value);
00030     // Compare todos os membros para verificar igualdade
00031 }
```

References name, and value.

4.9.2.6 setName()

```
void SystemIMP::setName (
            const std::string & name )  [virtual]
```

This method assigns a string to the name of a system.

Parameters

name	string must be passed to the method

Implements System.

```
00014 { this->name = name; }
```

References name.

4.9.2.7 setValue()

```
void SystemIMP::setValue (
            const double & value )  [virtual]
```

This method assigns a double to the value of a system.

Parameters

value	double must be passed to the method

Implements System.

```
00017 { this->value = value; }
```

References value.

4.9.3 Member Data Documentation

4.9.3.1 name

```
std::string SystemIMP::name  [protected]
```

Name string attribute.

Referenced by getName(), operator!=(), operator=(), operator==(), and setName().

4.9.3.2 value

```
double SystemIMP::value  [protected]
```

Value double attribute.

Referenced by getValue(), operator!=(), operator=(), operator==(), and setValue().

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

- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/SystemIMP.h
- /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/SystemIMP.cpp

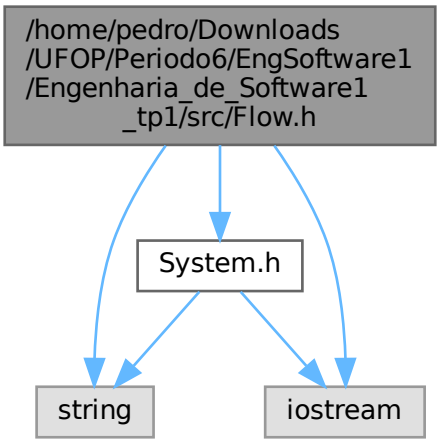
Chapter 5

File Documentation

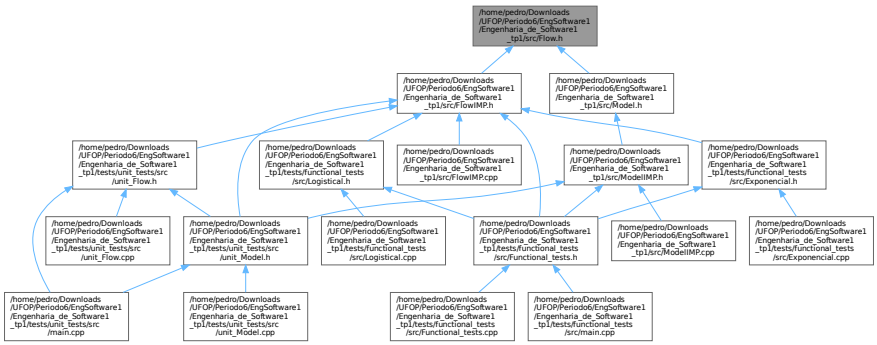
5.1 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/Flow.h File Reference

```
#include "System.h"
#include <string>
#include <iostream>
```

Include dependency graph for Flow.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Flow

5.2 Flow.h

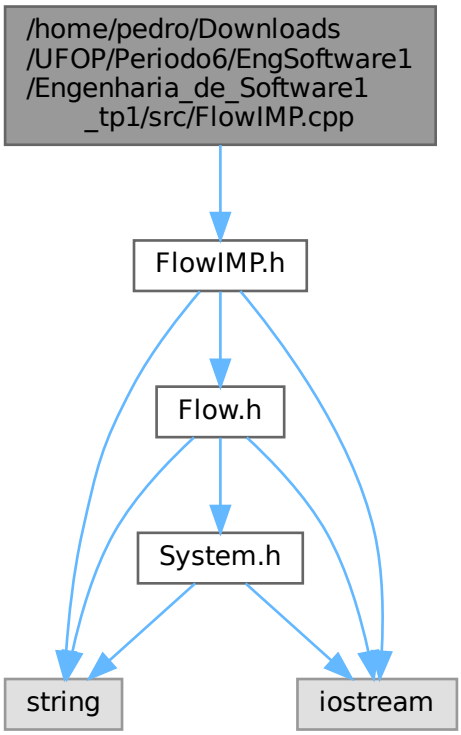
Go to the documentation of this file.

```
00001 /***********************************************
00002  * @file Flow.h
00003  * @author Pedro Augusto Sousa Gonçalves
00004  * @brief This file represents the flow Interface
00005 ***********************************************/
00006
00007 #ifndef FLOW_H
00008 #define FLOW_H
00009
00010 #include "System.h"
00011 #include <string>
00012 #include <iostream>
00013
00014 /*****************************************************************************************
00015  *@brief The Flow Interface is the Interface that defines the methods to be implemented
00016 *****************************************************************************************/
00017
00018 class Flow{
00019     public:
00020         //Destructor
00024         virtual ~Flow() {};
00025
00026         //Geters e seters
00027         //Name
00032         virtual std::string getName() const = 0;
00037         virtual void setName(const std::string& name) = 0;
00038         //Source
00043         virtual System* getSource() const = 0;
00048         virtual void setSource(System* source) = 0;
00049         //Target
00054         virtual System* getTarget() const = 0;
00059         virtual void setTarget(System* target) = 0;
00060
00061         //Metodos
00066         virtual double execute() = 0;
00067 };
00068
00069
00070 #endif
```

5.3 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/FlowIMP.cpp File Reference

```
#include "FlowIMP.h"
```

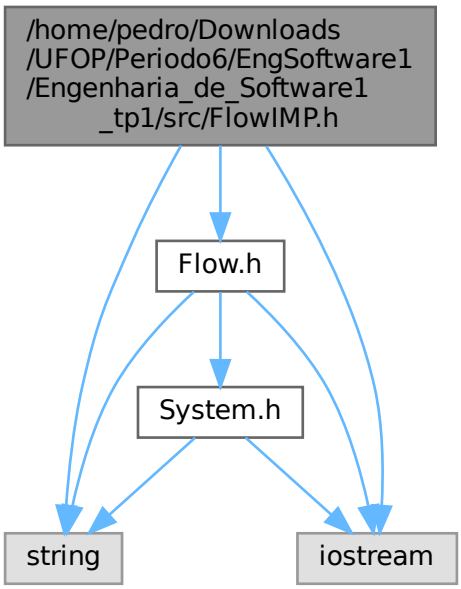
Include dependency graph for FlowIMP.cpp:



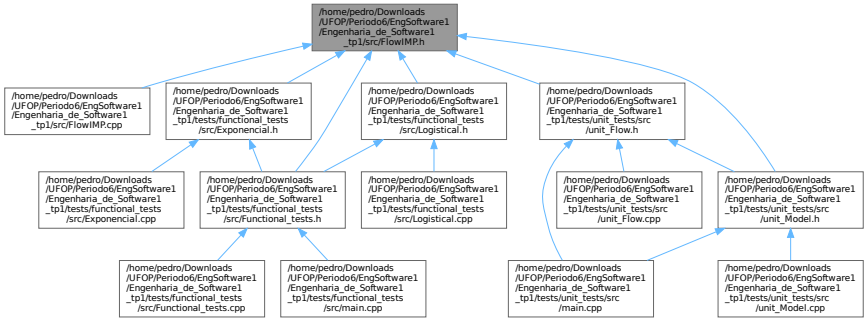
5.4 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/FlowIMP.h File Reference

```
#include "Flow.h"
#include <string>
#include <iostream>
```

Include dependency graph for FlowIMP.h:



This graph shows which files directly or indirectly include this file:



Classes

- class FlowIMP

5.5 FlowIMP.h

Go to the documentation of this file.

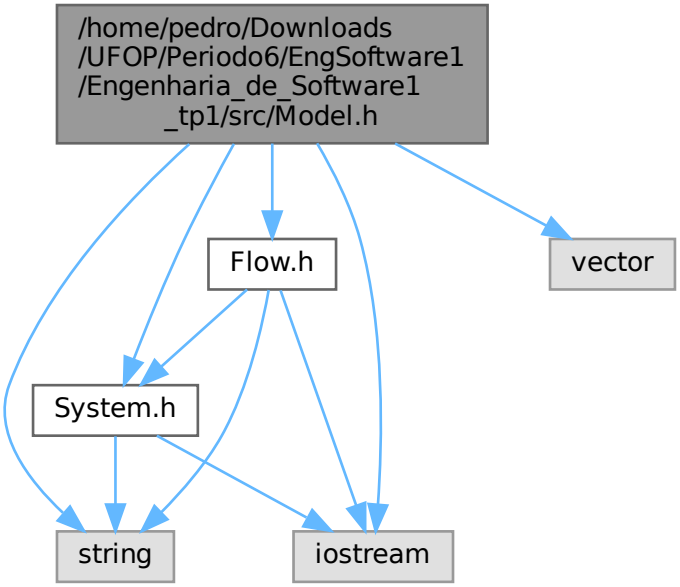
```
00001 /***********************************************
00002  * @file FlowIMP.h
00003  * @author Pedro Augusto Sousa Gonçalves
```

```
00004  * @brief This file represents the flow implementation
00005 ***********************************************/
00006
00007 #ifndef FLOWIMP_H
00008 #define FLOWIMP_H
00009
00010 #include "Flow.h"
00011 #include <string>
00012 #include <iostream>
00013
00014 /*****************************************************************************
00015  *@brief The Flow implementation defines the attributes and implements the methods
00016 *****************************************************************************/
00017
00018 class FlowIMP : public Flow{
00019     private:
00025         FlowIMP& operator=(const FlowIMP& other); // Operador de atribuição
00026
00027     protected:
00028         std::string name;
00029         System* source;
00030         System* target;
00032     public:
00033         //Destructor
00037         virtual ~FlowIMP();
00038
00039         //Geters e seters
00040         //Name
00045         std::string getName() const;
00050         void setName(const std::string& name);
00051         //Source
00056         System* getSource() const;
00061         void setSource(System* source);
00062         //Target
00067         System* getTarget() const;
00072         void setTarget(System* target);
00073
00074         //Metodos
00079         virtual double execute() = 0;
00080
00081         //Sobrecarga de operadores
00087         virtual bool operator==(const FlowIMP& other) const; // Operador de igualdade
00093         virtual bool operator!=(const FlowIMP& other) const; // Operador de diferença
00094 };
00095
00096
00097 #endif
```

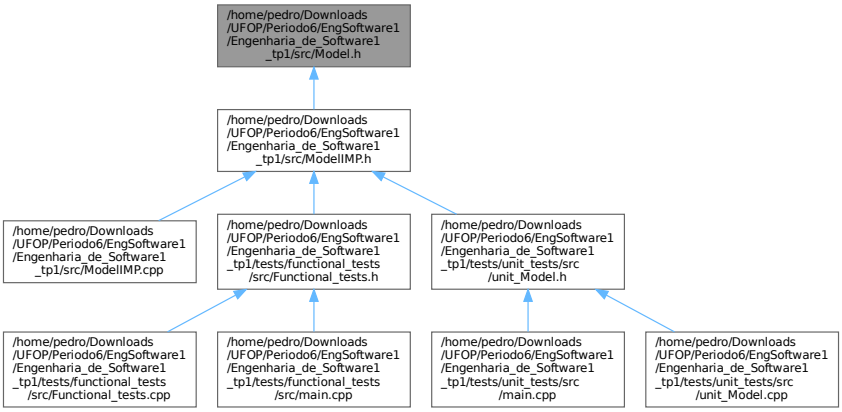
5.6 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/Model.h File Reference

```
#include "System.h"
#include "Flow.h"
#include <string>
#include <iostream>
#include <vector>
```

Include dependency graph for Model.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Model

5.7 Model.h

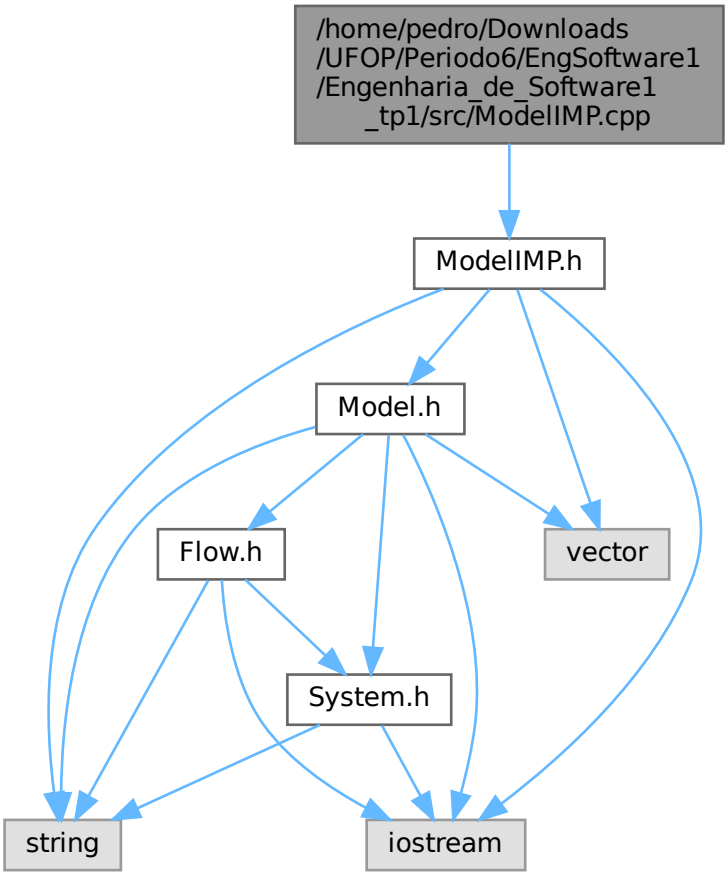
Go to the documentation of this file.

```
00001 /************************************************
00002  * @file Model.h
00003  * @author Pedro Augusto Sousa Gonçalves
00004  * @brief This file represents the simulation model
00005 ************************************************/
00006
00007 #ifndef MODEL_H
00008 #define MODEL_H
00009
00010 #include "System.h"
00011 #include "Flow.h"
00012 #include <string>
00013 #include <iostream>
00014 #include <vector>
00015
00016
      /*****************************************************************************************************************
00017  *@brief This class represents the general simulation model, it contains figures for simulation and
      its execution.
00018
      *****************************************************************************************************************/
00019 class Model{
00020     public:
00021         //Iteradores
00025         typedef std::vector<System*>::iterator systemIterator;
00026         typedef std::vector<Flow*>::iterator flowIterator;
00027
00028         //Destrutor
00032         virtual ~Model() {};
00033
00034         //Geters e seters
00035         //Name
00040         virtual std::string getName() const = 0;
00045         virtual void setName(const std::string& name) = 0;
00046         //Vector
00051         virtual std::vector<System*> getSystems() const = 0;
00056         virtual std::vector<Flow*> getFlows() const = 0;
00061         virtual void setSystems(const std::vector<System*> systems) = 0;
00066         virtual void setFlows(const std::vector<Flow*> flows) = 0;
00067         //Time
00072         virtual int getStartTime() const = 0;
00077         virtual int getEndTime() const = 0;
00082         virtual void setStartTime(const int& startTime) = 0;
00087         virtual void setEndTime(const int& endTime) = 0;
00093         virtual void setTime(const int& startTime, const int& endTime) = 0;
00094
00095         //Metodos
00096         //add
00101         virtual void add(System* system) = 0;
00106         virtual void add(Flow* flow) = 0;
00107         //remove
00113         virtual bool rmv(const System* system) = 0;
00119         virtual bool rmv(const Flow* flow) = 0;
00120         //Others
00125         virtual bool run() = 0;
00126
00127 };
00128
00129 #endif
```

5.8 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/ModelIMP.cpp File Reference

```
#include "ModelIMP.h"
```

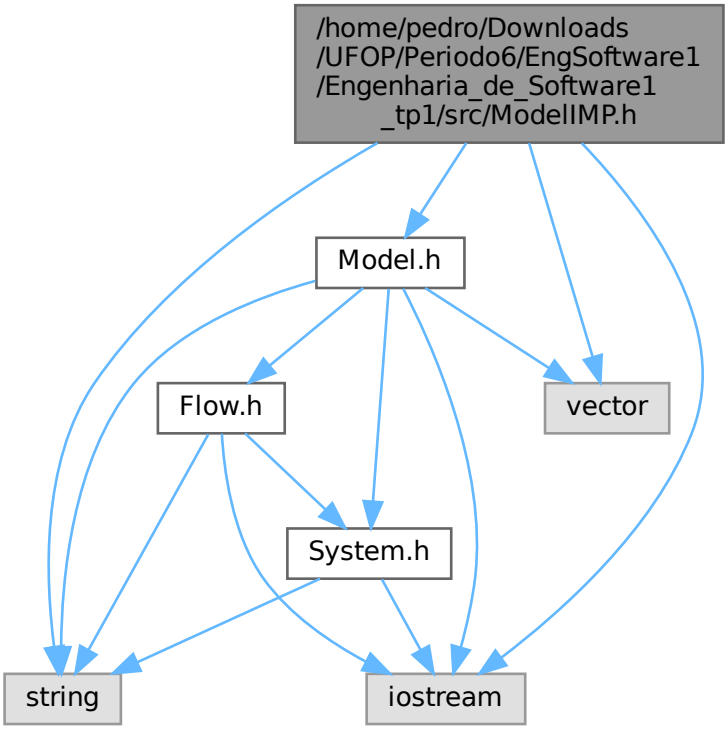
Include dependency graph for ModelIMP.cpp:



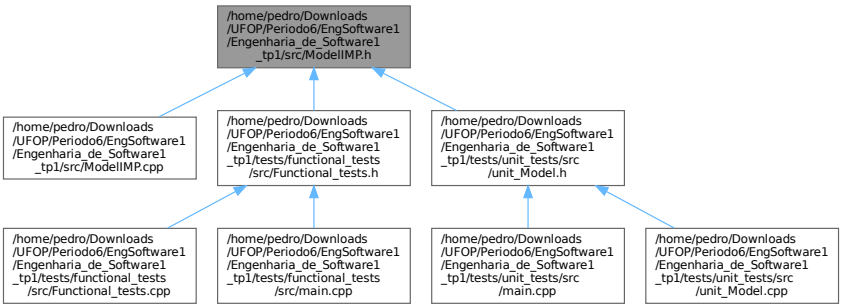
5.9 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/Engenharia_de_Software1_tp1/src/ModelIMP.h File Reference

```
#include "Model.h"
#include <string>
#include <iostream>
#include <vector>
```

Include dependency graph for ModelIMP.h:



This graph shows which files directly or indirectly include this file:



Classes

- class ModelIMP

5.10 ModelIMP.h

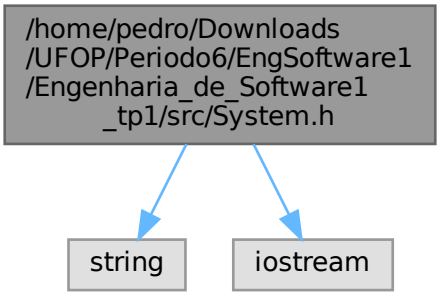
Go to the documentation of this file.

```
00001 /*****************************************************
00002  * @file ModelIMP.h
00003  * @author Pedro Augusto Sousa Gonçalves
00004  * @brief This file represents the model implementation
00005 *****************************************************/
00006
00007 #ifndef MODELIMP_H
00008 #define MODELIMP_H
00009
00010 #include "Model.h"
00011 #include <string>
00012 #include <iostream>
00013 #include <vector>
00014
00015 /*****************************************************************************
00016  *@brief This class implementation defines the attributes and implements the methods
00017 *****************************************************************************/
00018 class ModelIMP : public Model{
00019     private:
00025         ModelIMP& operator=(const ModelIMP& other); // Operador de atribuição
00030         ModelIMP(const ModelIMP& other); //Copia outro flow
00031
00032     protected:
00033         std::string name;
00034         std::vector<System*> systems;
00035         std::vector<Flow*> flows;
00036         int startTime;
00037         int endTime;
00039     public:
00040         //Contructors
00047         ModelIMP(const std::string& name = "NO_NAME", const int& startTime = 0, const int& endTime =
      1);
00048
00049         //Destrutor
00053         virtual ~ModelIMP();
00054
00055         //Geters e seters
00056         //Name
00061         std::string getName() const;
00066         void setName(const std::string& name);
00067         //Vector
00072         std::vector<System*> getSystems() const;
00077         std::vector<Flow*> getFlows() const;
00082         void setSystems(const std::vector<System*> systems);
00087         void setFlows(const std::vector<Flow*> flows);
00088         //Time
00093         int getStartTime() const;
00098         int getEndTime() const;
00103         void setStartTime(const int& startTime);
00108         void setEndTime(const int& endTime);
00114         void setTime(const int& startTime, const int& endTime);
00115
00116         //Metodos
00117         //add
00122         void add(System* system);
00127         void add(Flow* flow);
00128         //remove
00134         bool rmv(const System* system);
00140         bool rmv(const Flow* flow);
00141         //Others
00146         bool run();
00147
00148         //Sobrecarga de operadores
00154         bool operator==(const ModelIMP& other) const; // Operador de igualdade
00160         bool operator!=(const ModelIMP& other) const; // Operador de igualdade
00161 };
00162
00163 #endif
```

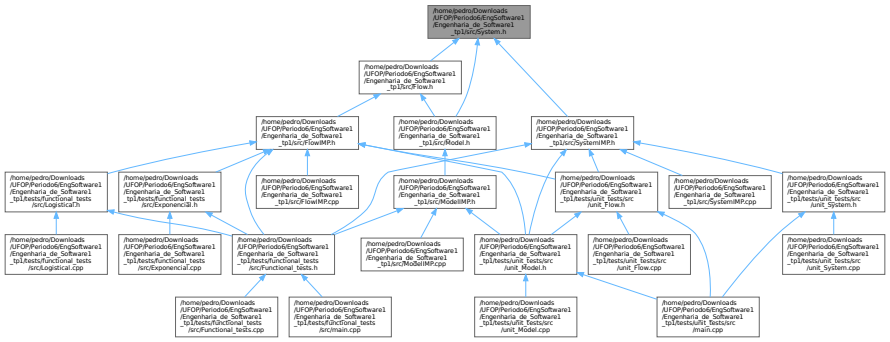
5.11 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/src/System.h File Reference

```
#include <string>
#include <iostream>
```

Include dependency graph for System.h:



This graph shows which files directly or indirectly include this file:



Classes

- class System

5.12 System.h

Go to the documentation of this file.

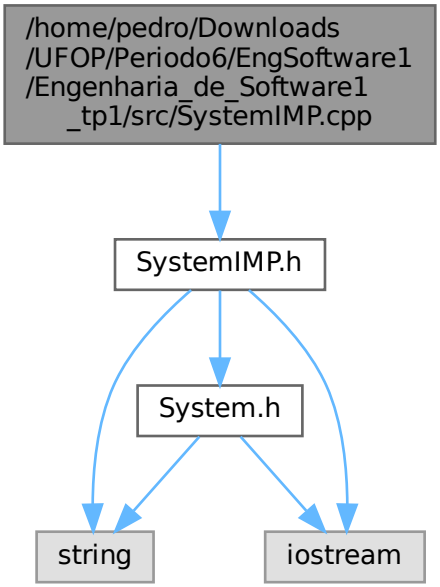
```
00001 /*************************************************
00002  * @file System.h
00003  * @author Pedro Augusto Sousa Gonçalves
00004  * @brief This file represents the System interface
00005 *************************************************/
00006
00007 #ifndef SYSTEM_H
00008 #define SYSTEM_H
00009
00010 //Bibliotecas
00011 #include <string>
00012 #include <iostream>
00013
00014 /*****************************************************************************************
00015  *@brief The System Interface is the Interface that defines the methods to be implemented
00016 *****************************************************************************************/
```

```
00017
00018 class System{
00019     public:
00020         //Destructors
00024         virtual ~System() {};
00025
00026         //Geters e seters
00027         //Nome
00032         virtual std::string getName() const = 0;
00037         virtual void setName(const std::string& name) = 0;
00038         //Value
00043         virtual double getValue() const = 0;
00048         virtual void setValue(const double& value) = 0;
00049 };
00050
00051 #endif
```

5.13 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/src/SystemIMP.cpp File Reference

```
#include "SystemIMP.h"
```

Include dependency graph for SystemIMP.cpp:

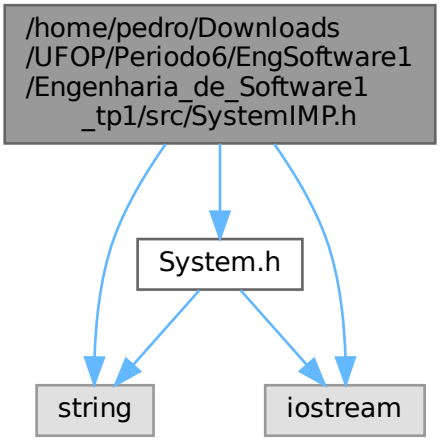


5.14 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/src/SystemIMP.h File Reference

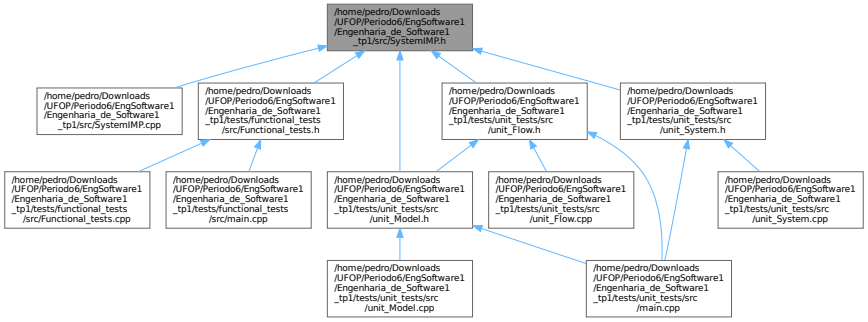
```
#include "System.h"
#include <string>
```

```
#include <iostream>
```

Include dependency graph for SystemIMP.h:



This graph shows which files directly or indirectly include this file:



Classes

- class SystemIMP

5.15 SystemIMP.h

Go to the documentation of this file.

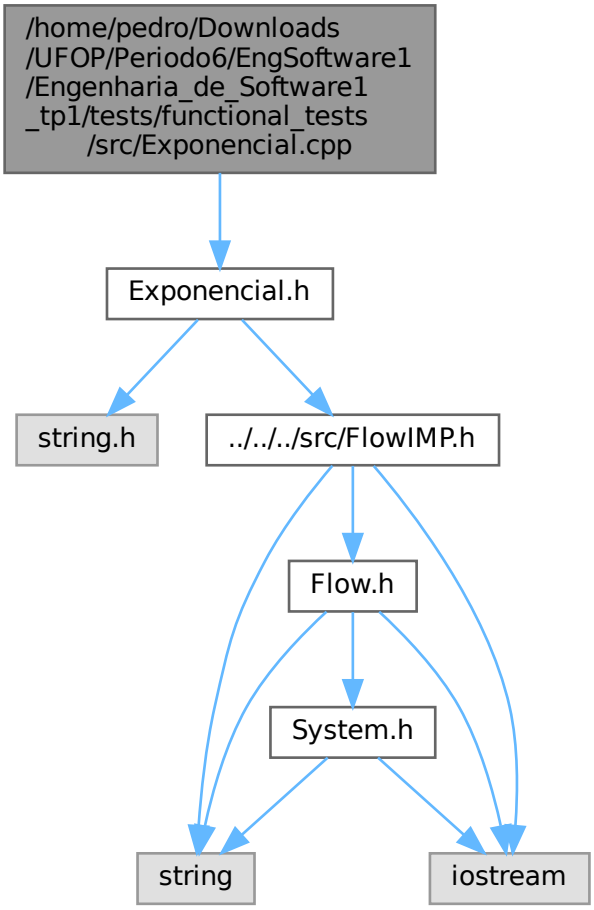
```
00001 /*****************************************************
00002  * @file SystemIMP.h
00003  * @author Pedro Augusto Sousa Gonçalves
00004  * @brief This file represents the system implementation
00005 *****************************************************/
00006
00007 #ifndef SYSTEMIMP_H
00008 #define SYSTEMIMP_H
```

```
00009
00010 //Bibliotecas
00011 #include "System.h"
00012 #include <string>
00013 #include <iostream>
00014
00015 /*****************************************************************************************
00016  *@brief The System implementation defines the attributes and implements the methods
00017 *****************************************************************************************/
00018
00019 class SystemIMP : public System{
00020     private:
00025         SystemIMP(const SystemIMP& other); //Copia outro system
00031         SystemIMP& operator=(const SystemIMP& other);  // Operador de atribuição
00032
00033     protected:
00034         std::string name;
00035         double value;
00037     public:
00038         //Contructors
00044         SystemIMP(const std::string& name = "NO_NAME", const double& value = 0.0);
00045
00049         //Destructors
00050         virtual ~SystemIMP();
00051
00052         //Geters e seters
00053         //Nome
00058         std::string getName() const;
00063         void setName(const std::string& name);
00064         //Value
00069         double getValue() const;
00074         void setValue(const double& value);
00075
00076         //Sobrecarga de operadores
00082         bool operator==(const SystemIMP& other) const;  // Operador de igualdade
00088         bool operator!=(const SystemIMP& other) const;  // Operador de diferença
00089 };
00090
00091 #endif
```

5.16 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/functional_tests/src/↩ Exponencial.cpp File Reference

```
#include "Exponencial.h"
```

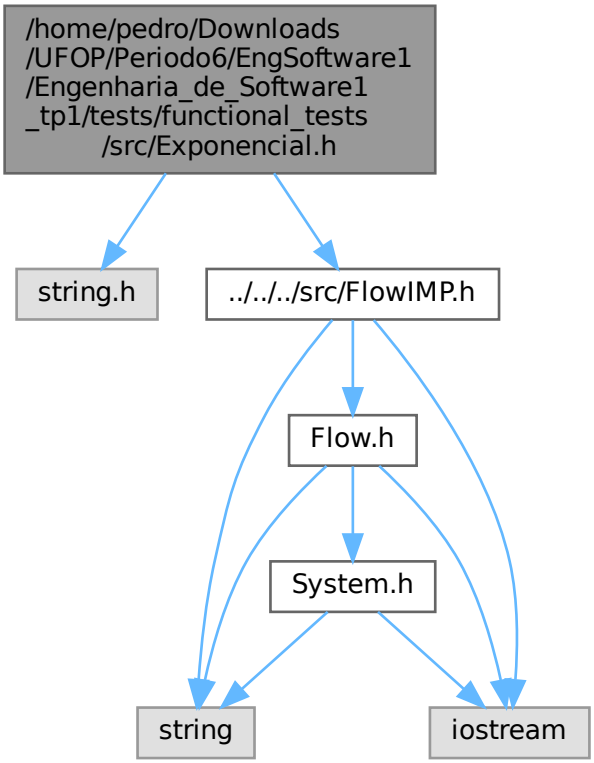
Include dependency graph for Exponencial.cpp:



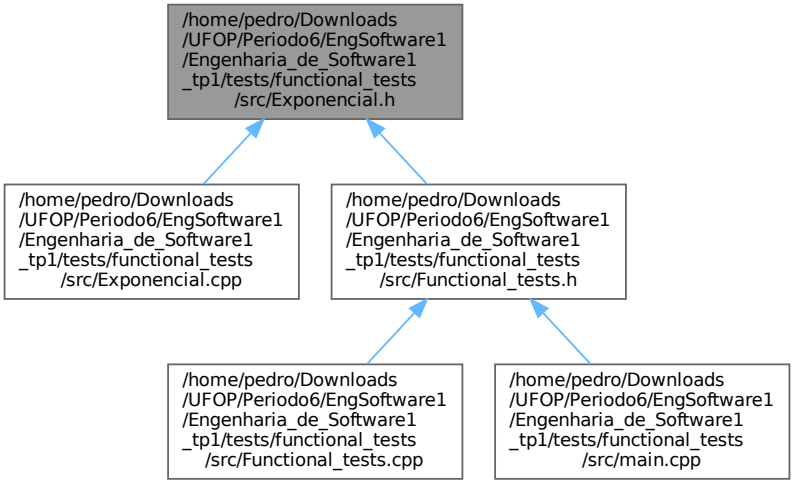
5.17 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/functional_tests/src/↩ Exponencial.h File Reference

```
#include <string.h>
#include "../../../src/FlowIMP.h"
```

Include dependency graph for Exponencial.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Exponencial

5.18 Exponencial.h

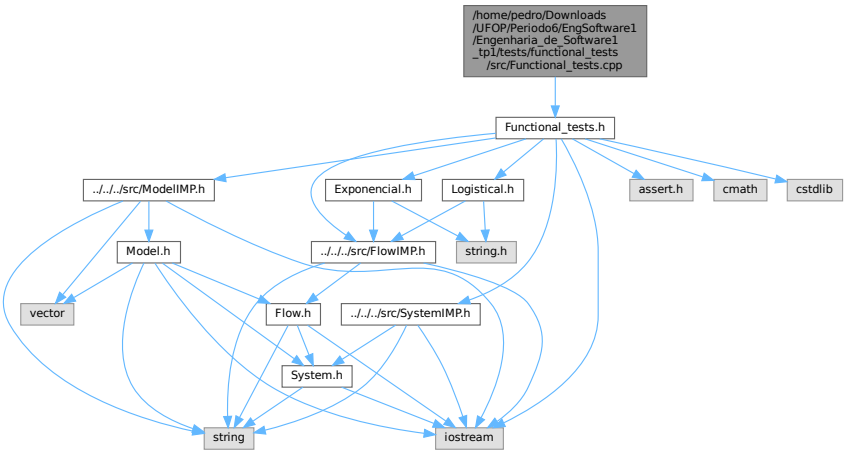
Go to the documentation of this file.

```
00001 /************************************************************
00002  * @file Exponencial.h
00003  * @author Pedro Augusto Sousa Gonçalves
00004  * @brief This file represents the exponential simulation flow
00005 ************************************************************/
00006
00007 #ifndef EXPONENCIAL_DEF
00008 #define EXPONENCIAL_DEF
00009
00010 #include <string.h>
00011 #include "../../../src/FlowIMP.h"
00012
00013
      /*****************************************************************************************************************
00014  * @brief This Flow class connects two systems and through the entered equation transfers values from
      one system to another
00015
      *****************************************************************************************************************/
00016 class Exponencial : public FlowIMP{
00017     private:
00022         Exponencial(const Exponencial& other);
00023
00024     public:
00025         //Contructor
00032         Exponencial(const std::string& name = "NO_NAME", System* source = NULL, System* target =
      NULL);
00033
00034         //Destructor
00038         virtual ~Exponencial();
00039
00040         //Metodos
00045         virtual double execute() override;
00046 };
00047
00048 #endif
```

5.19 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/functional_tests/src/↩ Functional_tests.cpp File Reference

```
#include "Functional_tests.h"
```

Include dependency graph for Functional_tests.cpp:



Functions

- void exponencial_test_run ()

  This function performs the exponential functional test.
- void logistical_test_run ()

  This function performs the logistic test.
- void Complex_test_run ()

  This function runs the "complex" test, which has multiple systems and flows.

5.19.1 Function Documentation

5.19.1.1 Complex_test_run()

```
void Complex_test_run ( )
```

This function runs the "complex" test, which has multiple systems and flows.

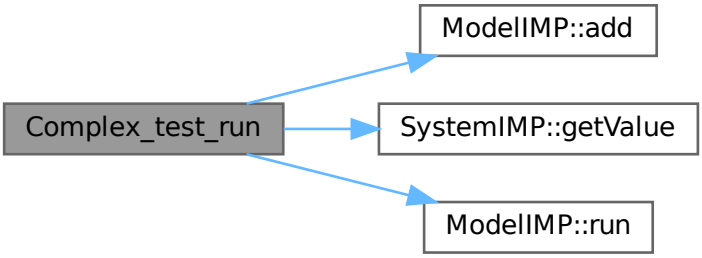
```
00057                       {
00058     std::cout « "  Complex functional test" « std::endl;
00059
00060     ModelIMP* model = new ModelIMP("Model", 0, 100);
00061     SystemIMP* q1 = new SystemIMP("q1", 100.0);
00062     SystemIMP* q2 = new SystemIMP("q2", 0.0);
00063     SystemIMP* q3 = new SystemIMP("q3", 100.0);
00064     SystemIMP* q4 = new SystemIMP("q4", 0.0);
00065     SystemIMP* q5 = new SystemIMP("q5", 0.0);
00066     Exponencial* f = new Exponencial("f", q1, q2);
00067     Exponencial* t = new Exponencial("t", q2, q3);
00068     Exponencial* u = new Exponencial("u", q3, q4);
00069     Exponencial* v = new Exponencial("v", q4, q1);
00070     Exponencial* g = new Exponencial("g", q1, q3);
00071     Exponencial* r = new Exponencial("r", q2, q5);
```

```
00072
00073     model->add(q1);
00074     model->add(q2);
00075     model->add(q3);
00076     model->add(q4);
00077     model->add(q5);
00078     model->add(f);
00079     model->add(t);
00080     model->add(u);
00081     model->add(v);
00082     model->add(g);
00083     model->add(r);
00084
00085     model->run();
00086
00087     assert(fabs((round((q1->getValue() * 10000)) - 10000 * 31.8513)) < 0.0001);
00088     assert(fabs((round((q2->getValue() * 10000)) - 10000 * 18.4003)) < 0.0001);
00089     assert(fabs((round((q3->getValue() * 10000)) - 10000 * 77.1143)) < 0.0001);
00090     assert(fabs((round((q4->getValue() * 10000)) - 10000 * 56.1728)) < 0.0001);
00091     assert(fabs((round((q5->getValue() * 10000)) - 10000 * 16.4612)) < 0.0001);
00092
00093     delete model;
00094     delete q1;
00095     delete q2;
00096     delete q3;
00097     delete q4;
00098     delete q5;
00099     delete f;
00100     delete t;
00101     delete u;
00102     delete v;
00103     delete g;
00104     delete r;
00105
00106     std::cout « "  Complex functional test passed" « std::endl;
00107 }
```

References ModelIMP::add(), SystemIMP::getValue(), and ModelIMP::run().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:

5.19.1.2 exponencial_test_run()

```
void exponencial_test_run ( )
```

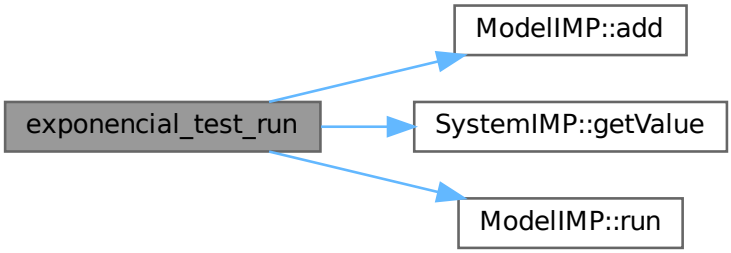
This function performs the exponential functional test.

```
00003                                {
00004     std::cout « "  Exponencial functional test" « std::endl;
00005
00006     SystemIMP* pop1 = new SystemIMP("pop1", 100.0);
00007     SystemIMP* pop2 = new SystemIMP("pop2", 0.0);
00008     Exponencial* exp = new Exponencial("exp", pop1, pop2);
00009     ModelIMP* exponencial = new ModelIMP("Exponencial", 0, 100);
00010
00011     //Add os systems e flows ao modelo
00012     exponencial->add(pop1);
00013     exponencial->add(pop2);
00014     exponencial->add(exp);
00015
00016     //Roda o modelo
00017     exponencial->run();
00018
00019     assert(fabs((round(pop1->getValue() * 10000) - 10000 * 36.6032)) < 0.0001);
00020     assert(fabs((round(pop2->getValue() * 10000) - 10000 * 63.3968)) < 0.0001);
00021
00022     delete(exponencial);
00023     delete(exp);
00024     delete(pop1);
00025     delete(pop2);
00026
00027     std::cout « "  Exponencial functional test passed\n" « std::endl;
00028 }
```

References ModelIMP::add(), SystemIMP::getValue(), and ModelIMP::run().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:

5.19.1.3 logistical_test_run()

```
void logistical_test_run ( )
```

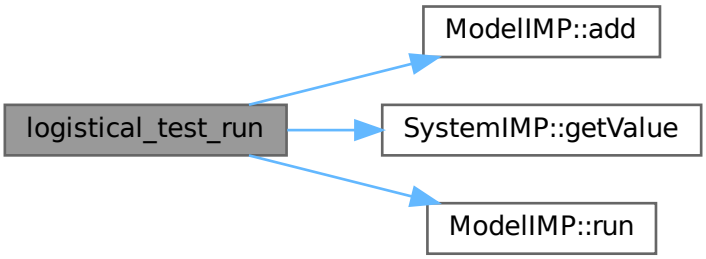
This function performs the logistic test.

```
00030                           {
00031     std::cout « "  Logistical functional test" « std::endl;
00032
00033     SystemIMP* p1 = new SystemIMP("p1", 100.0);
00034     SystemIMP* p2 = new SystemIMP("p2", 10.0);
00035     Logistical* log = new Logistical("log", p1, p2);
00036     ModelIMP* logistical = new ModelIMP("Logistical", 0, 100);
00037
00038     //Add os systems e flows ao modelo
00039     logistical->add(p1);
00040     logistical->add(p2);
00041     logistical->add(log);
00042
00043     //Roda o modelo
00044     logistical->run();
00045
00046     assert(fabs(round(p1->getValue() * 10000) - 10000 * 88.2167) < 0.0001);
00047     assert(fabs(round(p2->getValue() * 10000) - 10000 * 21.7833) < 0.0001);
00048
00049     delete(logistical);
00050     delete(log);
00051     delete(p1);
00052     delete(p2);
00053
00054     std::cout « "  Logistical functional test passed\n" « std::endl;
00055 }
```

References ModelIMP::add(), SystemIMP::getValue(), and ModelIMP::run().

Referenced by main().

Here is the call graph for this function:

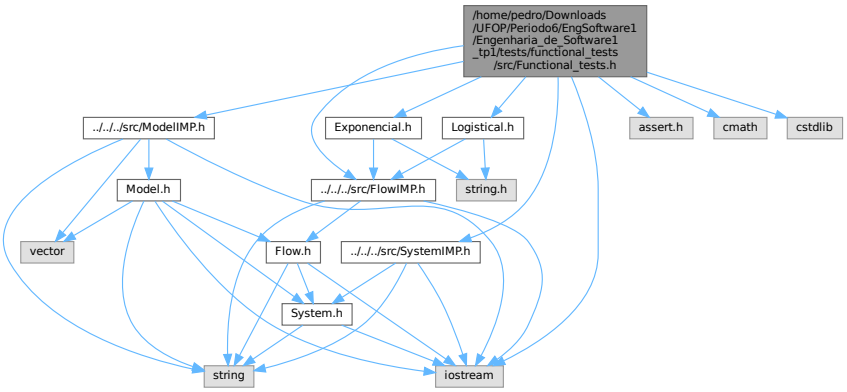


Here is the caller graph for this function:

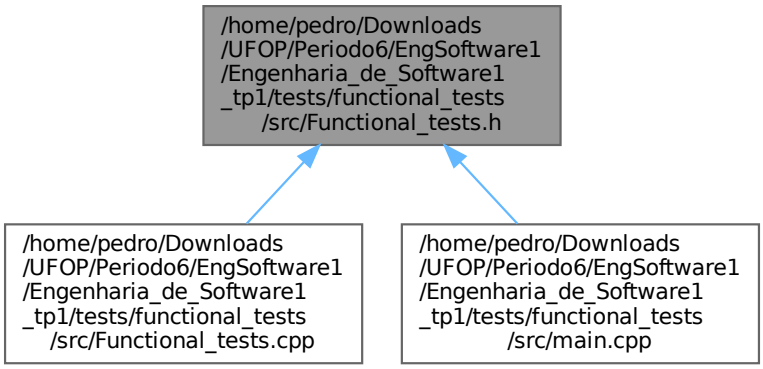
5.20 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/functional_tests/src/↩ Functional_tests.h File Reference

```
#include "../../../src/ModelIMP.h"
#include "../../../src/SystemIMP.h"
#include "../../../src/FlowIMP.h"
#include "Exponencial.h"
#include "Logistical.h"
#include <assert.h>
#include <cmath>
#include <iostream>
#include <cstdlib>
```

Include dependency graph for Functional_tests.h:



This graph shows which files directly or indirectly include this file:



Functions

- void exponencial_test_run ()

This function performs the exponential functional test.

- void logistical_test_run ()

  This function performs the logistic test.

- void Complex_test_run ()

  This function runs the "complex" test, which has multiple systems and flows.

5.20.1 Function Documentation

5.20.1.1 Complex_test_run()

```
void Complex_test_run ( )
```

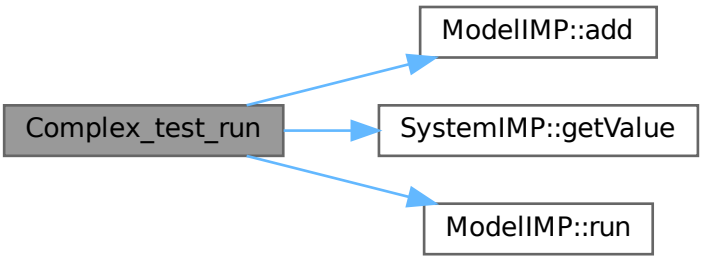
This function runs the "complex" test, which has multiple systems and flows.

```
00057                           {
00058     std::cout « "  Complex functional test" « std::endl;
00059
00060     ModelIMP* model = new ModelIMP("Model", 0, 100);
00061     SystemIMP* q1 = new SystemIMP("q1", 100.0);
00062     SystemIMP* q2 = new SystemIMP("q2", 0.0);
00063     SystemIMP* q3 = new SystemIMP("q3", 100.0);
00064     SystemIMP* q4 = new SystemIMP("q4", 0.0);
00065     SystemIMP* q5 = new SystemIMP("q5", 0.0);
00066     Exponencial* f = new Exponencial("f", q1, q2);
00067     Exponencial* t = new Exponencial("t", q2, q3);
00068     Exponencial* u = new Exponencial("u", q3, q4);
00069     Exponencial* v = new Exponencial("v", q4, q1);
00070     Exponencial* g = new Exponencial("g", q1, q3);
00071     Exponencial* r = new Exponencial("r", q2, q5);
00072
00073     model->add(q1);
00074     model->add(q2);
00075     model->add(q3);
00076     model->add(q4);
00077     model->add(q5);
00078     model->add(f);
00079     model->add(t);
00080     model->add(u);
00081     model->add(v);
00082     model->add(g);
00083     model->add(r);
00084
00085     model->run();
00086
00087     assert(fabs((round((q1->getValue() * 10000)) - 10000 * 31.8513)) < 0.0001);
00088     assert(fabs((round((q2->getValue() * 10000)) - 10000 * 18.4003)) < 0.0001);
00089     assert(fabs((round((q3->getValue() * 10000)) - 10000 * 77.1143)) < 0.0001);
00090     assert(fabs((round((q4->getValue() * 10000)) - 10000 * 56.1728)) < 0.0001);
00091     assert(fabs((round((q5->getValue() * 10000)) - 10000 * 16.4612)) < 0.0001);
00092
00093     delete model;
00094     delete q1;
00095     delete q2;
00096     delete q3;
00097     delete q4;
00098     delete q5;
00099     delete f;
00100     delete t;
00101     delete u;
00102     delete v;
00103     delete g;
00104     delete r;
00105
00106     std::cout « "  Complex functional test passed" « std::endl;
00107 }
```

References ModelIMP::add(), SystemIMP::getValue(), and ModelIMP::run().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:

5.20.1.2 exponencial_test_run()

```
void exponencial_test_run ( )
```

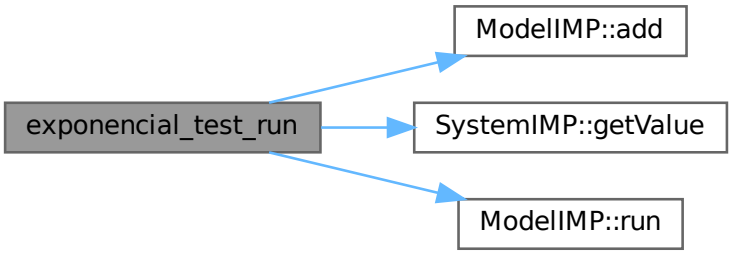
This function performs the exponential functional test.

```
00003                           {
00004     std::cout « "  Exponencial functional test" « std::endl;
00005
00006     SystemIMP* pop1 = new SystemIMP("pop1", 100.0);
00007     SystemIMP* pop2 = new SystemIMP("pop2", 0.0);
00008     Exponencial* exp = new Exponencial("exp", pop1, pop2);
00009     ModelIMP* exponencial = new ModelIMP("Exponencial", 0, 100);
00010
00011     //Add os systems e flows ao modelo
00012     exponencial->add(pop1);
00013     exponencial->add(pop2);
00014     exponencial->add(exp);
00015
00016     //Roda o modelo
00017     exponencial->run();
00018
00019     assert(fabs((round(pop1->getValue() * 10000) - 10000 * 36.6032)) < 0.0001);
00020     assert(fabs((round(pop2->getValue() * 10000) - 10000 * 63.3968)) < 0.0001);
00021
00022     delete(exponencial);
00023     delete(exp);
00024     delete(pop1);
00025     delete(pop2);
00026
00027     std::cout « "  Exponencial functional test passed\n" « std::endl;
00028 }
```

References ModelIMP::add(), SystemIMP::getValue(), and ModelIMP::run().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:

5.20.1.3 logistical_test_run()

```
void logistical_test_run ( )
```

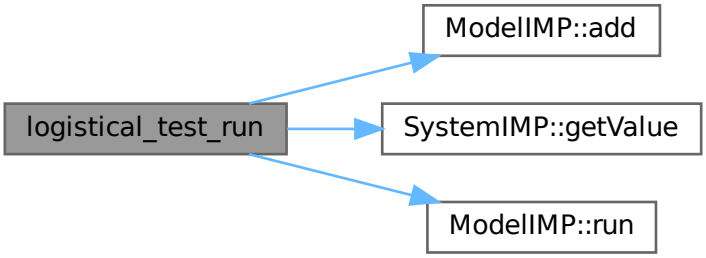
This function performs the logistic test.

```
00030                           {
00031     std::cout « "  Logistical functional test" « std::endl;
00032
00033     SystemIMP* p1 = new SystemIMP("p1", 100.0);
00034     SystemIMP* p2 = new SystemIMP("p2", 10.0);
00035     Logistical* log = new Logistical("log", p1, p2);
00036     ModelIMP* logistical = new ModelIMP("Logistical", 0, 100);
00037
00038     //Add os systems e flows ao modelo
00039     logistical->add(p1);
00040     logistical->add(p2);
00041     logistical->add(log);
00042
00043     //Roda o modelo
00044     logistical->run();
00045
00046     assert(fabs(round(p1->getValue() * 10000) - 10000 * 88.2167) < 0.0001);
00047     assert(fabs(round(p2->getValue() * 10000) - 10000 * 21.7833) < 0.0001);
00048
00049     delete(logistical);
00050     delete(log);
00051     delete(p1);
00052     delete(p2);
00053
00054     std::cout « "  Logistical functional test passed\n" « std::endl;
00055 }
```

References ModelIMP::add(), SystemIMP::getValue(), and ModelIMP::run().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:

5.21 Functional_tests.h

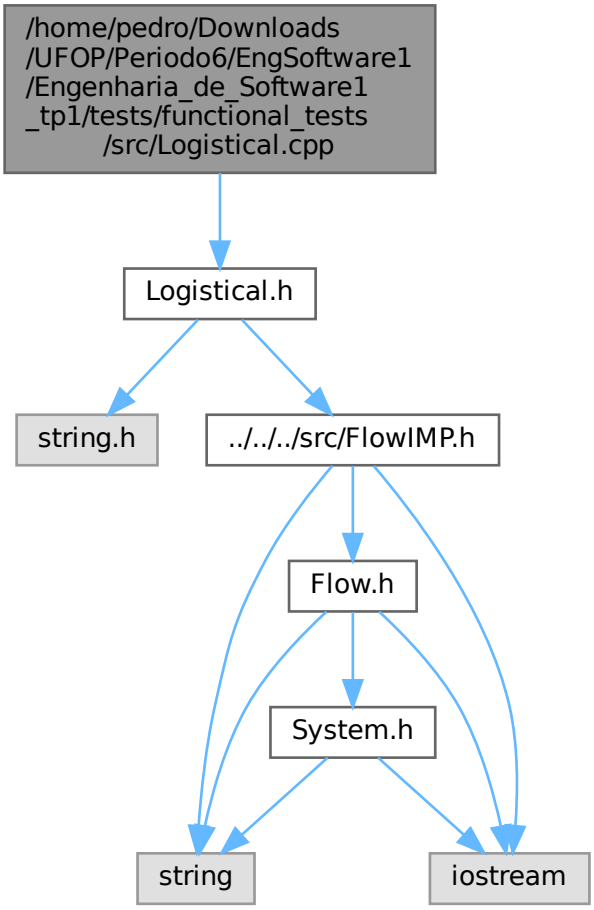
Go to the documentation of this file.

```
00001 /*************************************************************
00002  * @file Exponencial.h
00003  * @author Pedro Augusto Sousa Gonçalves
00004  * @brief This file represents the logistical simulation flow
00005 *************************************************************/
00006
00007 #ifndef FUNCTIONAL_TESTS_H
00008 #define FUNCTIONAL_TESTS_H
00009
00010 #include "../../../src/ModelIMP.h"
00011 #include "../../../src/SystemIMP.h"
00012 #include "../../../src/FlowIMP.h"
00013 #include "Exponencial.h"
00014 #include "Logistical.h"
00015 #include <assert.h>
00016 #include <cmath>
00017 #include <iostream>
00018 #include <cstdlib>
00019
00020 /************************************
00021  * @brief execution of functional tests
00022 ************************************/
00023
00027 void exponencial_test_run();
00028
00032 void logistical_test_run();
00033
00037 void Complex_test_run();
00038
00039 #endif
```

5.22 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/functional_tests/src/↩ Logistical.cpp File Reference

```
#include "Logistical.h"
```

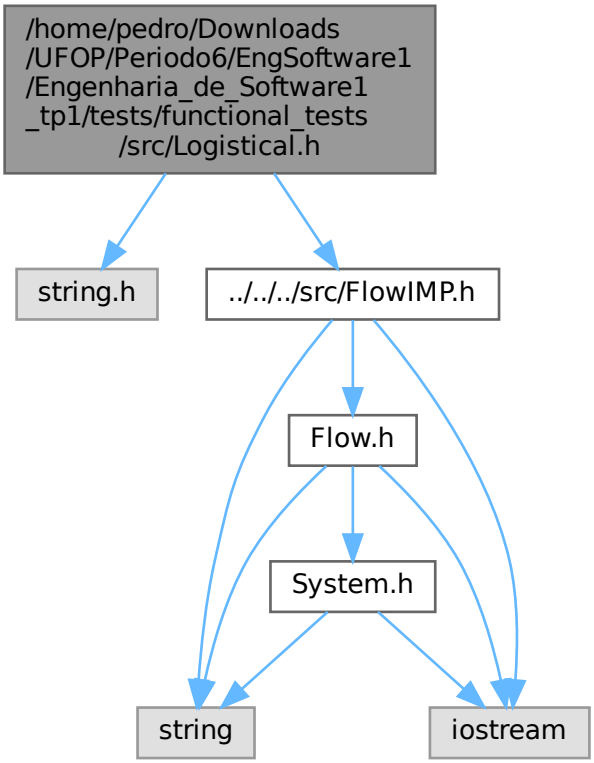
Include dependency graph for Logistical.cpp:



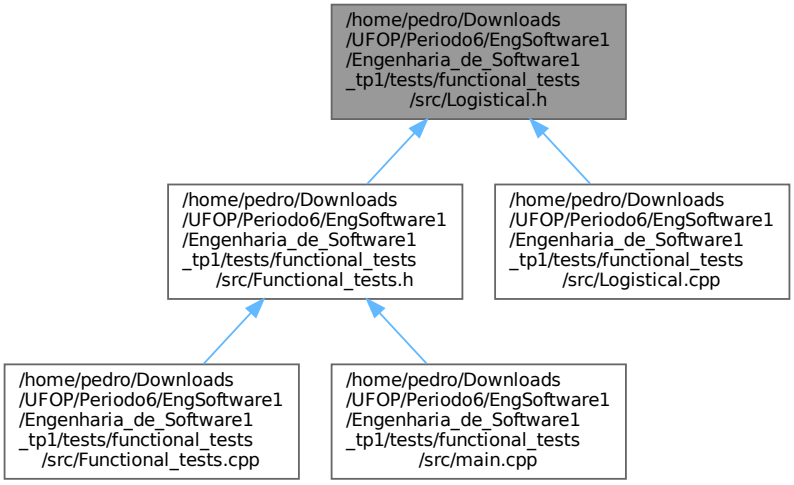
5.23 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/functional_tests/src/↩ Logistical.h File Reference

```
#include <string.h>
#include "../../../src/FlowIMP.h"
```

Include dependency graph for Logistical.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Logistical

5.24 Logistical.h

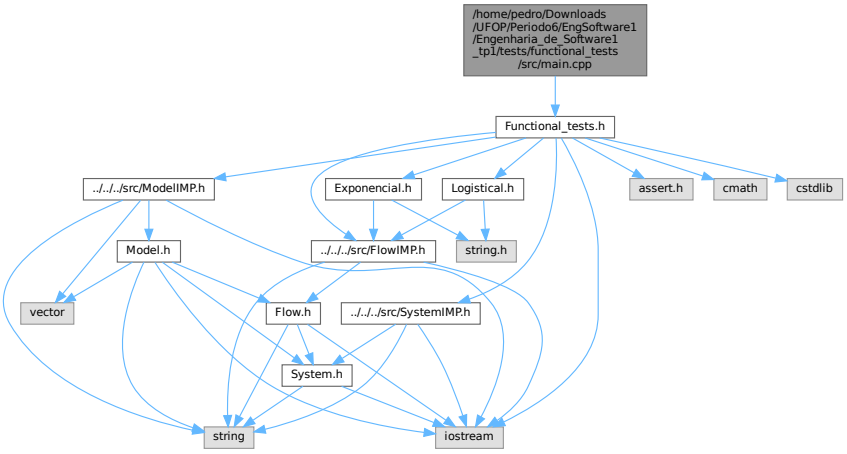
Go to the documentation of this file.

```
00001 /*************************************************************
00002  * @file Logistical.h
00003  * @author Pedro Augusto Sousa Gonçalves
00004  * @brief This file represents the logistical simulation flow
00005 *************************************************************/
00006
00007 #ifndef LOGISTICAL_DEF
00008 #define LOGISTICAL_DEF
00009
00010 #include <string.h>
00011 #include "../../../src/FlowIMP.h"
00012
00013 class Logistical : public FlowIMP{
00014     private:
00019         Logistical(const Logistical& other);
00020
00021     public:
00022         //Contructor
00029         Logistical(const std::string& name = "NO_NAME", System* source = NULL, System* target = NULL);
00030
00031         //Destructor
00035         virtual ~Logistical();
00036
00037         //Metodos
00042         virtual double execute() override;
00043 };
00044
00045 #endif
```

5.25 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/functional_tests/src/main.cpp File Reference

```
#include "Functional_tests.h"
```

Include dependency graph for main.cpp:



Functions

- int main ()

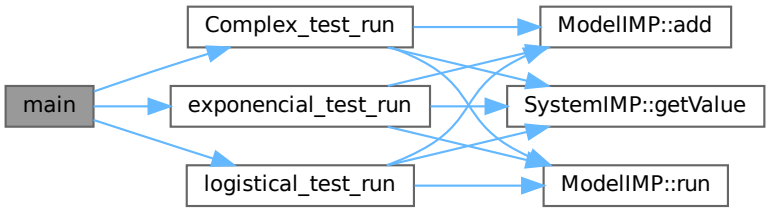
5.25.1 Function Documentation

5.25.1.1 main()

```
int main ( )
00003           {
00004     std::cout « "\nStart functional tests\n"
00005               « "*******************************************************\n";
00006     exponencial_test_run();
00007     logistical_test_run();
00008     Complex_test_run();
00009     std::cout « "*******************************************************\n"
00010               « "End functional tests\n\n";
00011     return 0;
00012 }
```

References Complex_test_run(), exponencial_test_run(), and logistical_test_run().

Here is the call graph for this function:

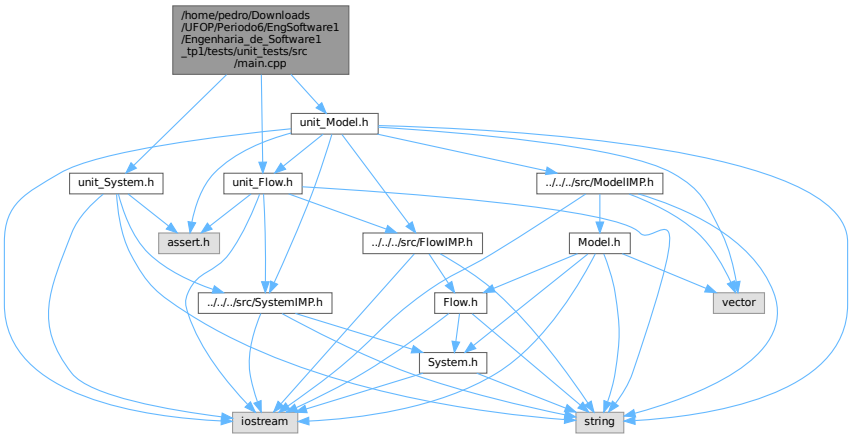


5.26 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/unit_tests/src/main.cpp File Reference

```
#include "unit_System.h"
#include "unit_Flow.h"
```

```
#include "unit_Model.h"
```

Include dependency graph for main.cpp:



Functions

- int main ()

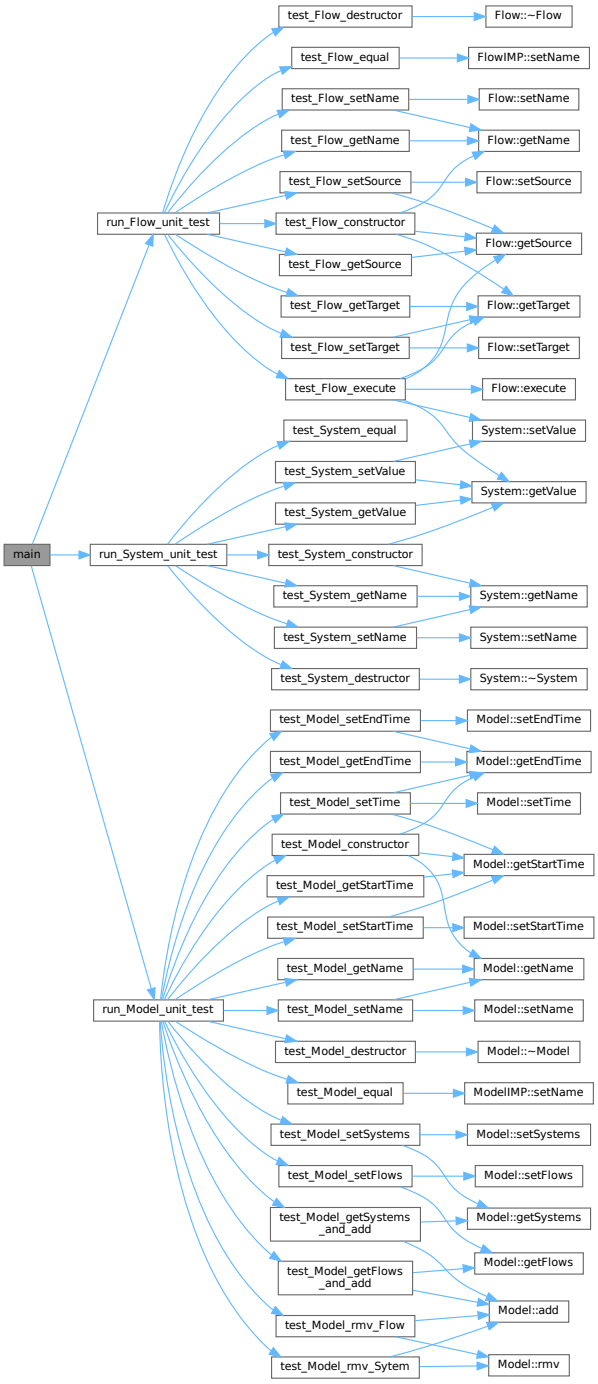
5.26.1 Function Documentation

5.26.1.1 main()

```
int main ( )
00005           {
00006     std::cout « "\nStart unit tests\n"
00007               « "******************************************************\n";
00008     run_System_unit_test();
00009     run_Flow_unit_test();
00010     run_Model_unit_test();
00011     std::cout « "******************************************************\n"
00012               « "End unit tests\n\n";
00013     return 0;
00014 }
```

References run_Flow_unit_test(), run_Model_unit_test(), and run_System_unit_test().

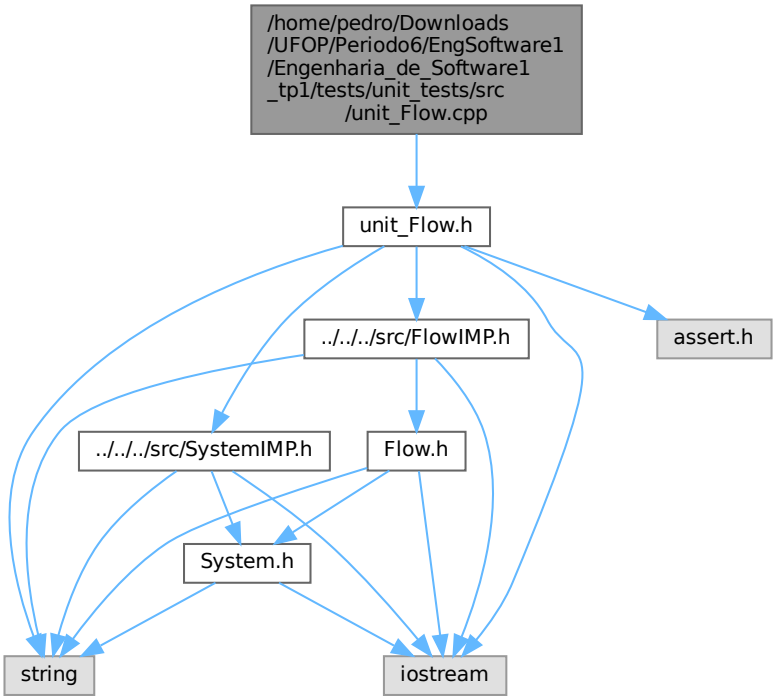
Here is the call graph for this function:



5.27 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/unit_tests/src/unit_Flow.cpp File Reference

```
#include "unit_Flow.h"
```

Include dependency graph for unit_Flow.cpp:



Functions

- void test_Flow_constructor ()

  This function run the unit test of the flow constructor.
- void test_Flow_destructor ()

  This function run the unit test of the flow destructor.
- void test_Flow_getName ()

  This function run the unit test of the flow getName.
- void test_Flow_getSource ()

  This function run the unit test of the flow getSource.
- void test_Flow_getTarget ()

  This function run the unit test of the flow getTarge.
- void test_Flow_setName ()

  This function run the unit test of the flow setName.
- void test_Flow_setSource ()

  This function run the unit test of the flow setSource.
- void test_Flow_setTarget ()

  This function run the unit test of the flow setTarge.
- void test_Flow_execute ()

  This function run the unit test of the flow execute.
- void test_Flow_equal ()

  This function run the unit test of the flow equal comparation.
- void run_Flow_unit_test ()

  This function run the unit tests of the flow.

5.27.1 Function Documentation

5.27.1.1 run_Flow_unit_test()

```
void run_Flow_unit_test ( )
```

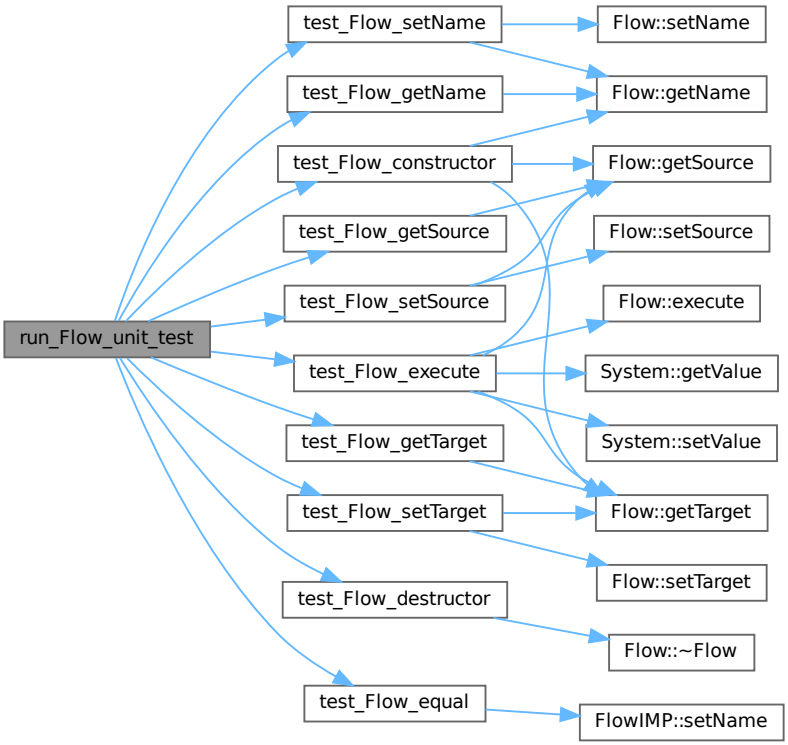
This function run the unit tests of the flow.

```
00189                           {
00190     std::cout « "    Start Flow unit tests\n";
00191     test_Flow_constructor();
00192     test_Flow_destructor();
00193     test_Flow_getName();
00194     test_Flow_getSource();
00195     test_Flow_getTarget();
00196     test_Flow_setName();
00197     test_Flow_setSource();
00198     test_Flow_setTarget();
00199     test_Flow_execute();
00200     test_Flow_equal();
00201     std::cout « "    End Flow unit tests\n\n";
00202 }
```

References test_Flow_constructor(), test_Flow_destructor(), test_Flow_equal(), test_Flow_execute(), test_Flow_getName(), test_Flow_getSource(), test_Flow_getTarget(), test_Flow_setName(), test_Flow_setSource(), and test_Flow_setTarget().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:

5.27.1.2 test_Flow_constructor()

```
void test_Flow_constructor ( )
```

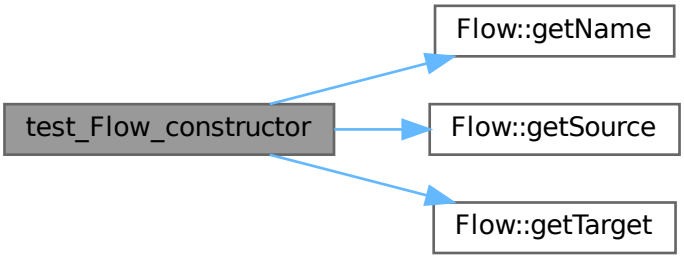
This function run the unit test of the flow constructor.

```
00023                                {
00024     std::cout « "        * Constructor tests\n";
00025     Flow* f1 = new Flow_unit_test();
00026     assert(f1->getName() == "NO_NAME");
00027     assert(f1->getSource() == NULL);
00028     assert(f1->getTarget() == NULL);
00029
00030     Flow* f2 = new Flow_unit_test("f2");
00031     assert(f2->getName() == "f2");
00032     assert(f2->getSource() == NULL);
00033     assert(f2->getTarget() == NULL);
00034
00035     System* s1 = new SystemIMP();
00036     Flow* f3 = new Flow_unit_test("f3", s1);
00037     assert(f3->getName() == "f3");
00038     assert(f3->getSource() == s1);
00039     assert(f3->getTarget() == NULL);
00040
00041     System* s2 = new SystemIMP();
00042     System* s3 = new SystemIMP();
00043     Flow* f4 = new Flow_unit_test("f4", s2, s3);
00044     assert(f4->getName() == "f4");
00045     assert(f4->getSource() == s2);
00046     assert(f4->getTarget() == s3);
00047
00048     delete f1;
00049     delete f2;
00050     delete s1;
00051     delete f3;
00052     delete s2;
00053     delete s3;
00054     delete f4;
00055 }
```

References Flow::getName(), Flow::getSource(), and Flow::getTarget().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.27.1.3 test_Flow_destructor()

```
void test_Flow_destructor ( )
```

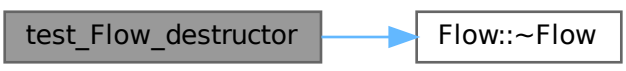
This function run the unit test of the flow destructor.

```
00057                                {
00058     std::cout « "         * Destructor tests\n";
00059     Flow* f1 = new Flow_unit_test();
00060     f1->~Flow();
00061 }
```

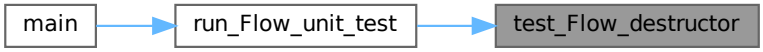
References Flow::~Flow().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.27.1.4 test_Flow_equal()

```
void test_Flow_equal ( )
```

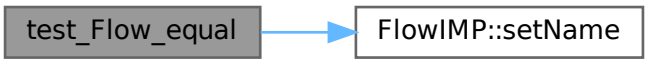
This function run the unit test of the flow equal comparation.

```
00175                       {
00176     std::cout « "         * Equal tests\n";
00177
00178     FlowIMP* f1 = new Flow_unit_test();
00179     FlowIMP* f2 = new Flow_unit_test();
00180     assert(*f1 == *f2);
00181
00182     f1->setName("f1");
00183     assert(*f1 != *f2);
00184
00185     delete f1;
00186     delete f2;
00187 }
```

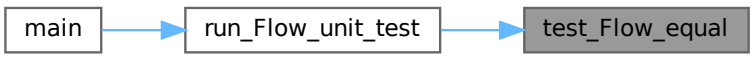
References FlowIMP::setName().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.27.1.5 test_Flow_execute()

```
void test_Flow_execute ( )
```

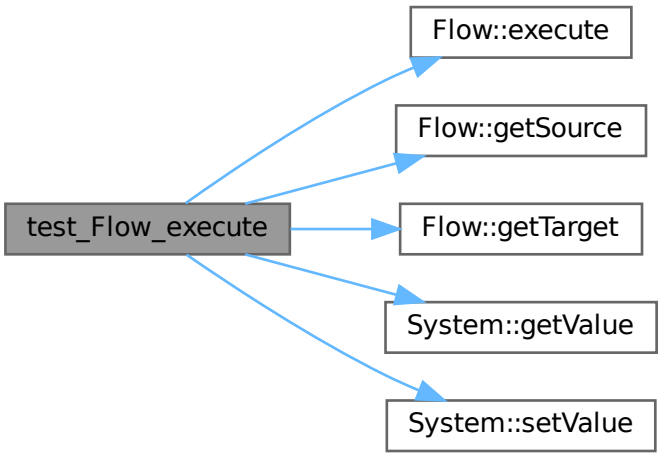
This function run the unit test of the flow execute.

```
00157                           {
00158     std::cout « "         * Execute tests\n";
00159
00160     System* s1 = new SystemIMP("s1", 100);
00161     System* s2 = new SystemIMP("s2", 0.0);
00162     Flow* f1 = new Flow_unit_test("f1", s1, s2);
00163     double result = f1->execute();
00164     f1->getTarget()->setValue(f1->getTarget()->getValue() + result);
00165     f1->getSource()->setValue(f1->getSource()->getValue() - result);
00166
00167     assert(s1->getValue() == 0);
00168     assert(s2->getValue() == 100);
00169
00170     delete s1;
00171     delete s2;
00172     delete f1;
00173 }
```

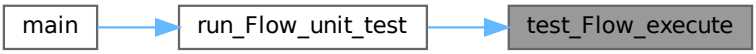
References Flow::execute(), Flow::getSource(), Flow::getTarget(), System::getValue(), and System::setValue().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.27.1.6 test_Flow_getName()

```
void test_Flow_getName ( )
```

This function run the unit test of the flow getName.

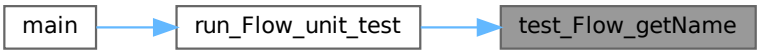
```
00063                           {
00064     std::cout « "         * getName tests\n";
00065     Flow* f1 = new Flow_unit_test();
00066     assert(f1->getName() == "NO_NAME");
00067
00068     Flow* f2 = new Flow_unit_test("f2");
00069     assert(f2->getName() == "f2");
00070
00071     delete f1;
00072     delete f2;
00073 }
```

References Flow::getName().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.27.1.7 test_Flow_getSource()

```
void test_Flow_getSource ( )
```

This function run the unit test of the flow getSource.

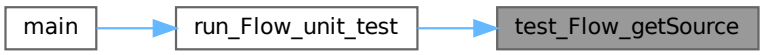
```
00075                            {
00076     std::cout « "         * getSource tests\n";
00077     Flow* f1 = new Flow_unit_test();
00078     assert(f1->getSource() == NULL);
00079
00080     System* s1 = new SystemIMP();
00081     Flow* f2 = new Flow_unit_test("f2", s1);
00082     assert(f2->getSource() == s1);
00083
00084     delete f1;
00085     delete s1;
00086     delete f2;
00087 }
```

References Flow::getSource().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.27.1.8 test_Flow_getTarget()

```
void test_Flow_getTarget ( )
```

This function run the unit test of the flow getTarge.

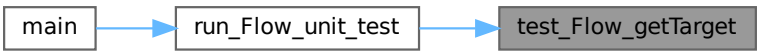
```
00089                                {
00090     std::cout « "        * getTarget tests\n";
00091     Flow* f1 = new Flow_unit_test();
00092     assert(f1->getTarget() == NULL);
00093
00094     System* s1 = new SystemIMP();
00095     System* s2 = new SystemIMP();
00096     Flow* f2 = new Flow_unit_test("f2", s1, s2);
00097     assert(f2->getTarget() == s2);
00098
00099     delete f1;
00100     delete s1;
00101     delete s2;
00102     delete f2;
00103 }
```

References Flow::getTarget().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.27.1.9 test_Flow_setName()

```
void test_Flow_setName ( )
```

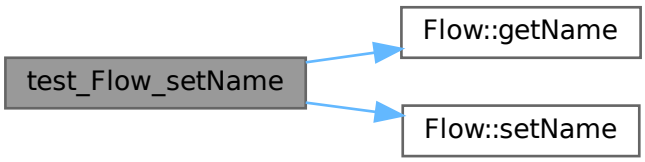
This function run the unit test of the flow setName.

```
00105                           {
00106     std::cout « "         * setName tests\n";
00107     Flow* f1 = new Flow_unit_test();
00108     f1->setName("f1");
00109     assert(f1->getName() != "NO_NAME");
00110
00111     Flow* f2 = new Flow_unit_test("f");
00112     f2->setName("f2");
00113     assert(f2->getName() == "f2");
00114
00115     delete f1;
00116     delete f2;
00117 }
```

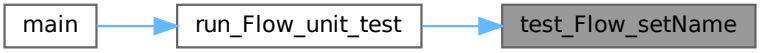
References Flow::getName(), and Flow::setName().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.27.1.10 test_Flow_setSource()

```
void test_Flow_setSource ( )
```

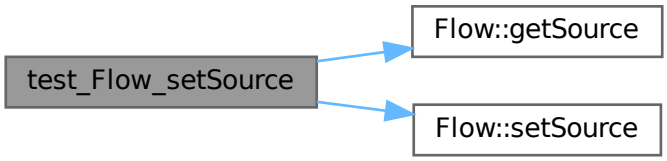
This function run the unit test of the flow setSource.

```
00119                                {
00120     std::cout « "        * setSource tests\n";
00121     System* s1 = new SystemIMP();
00122     Flow* f1 = new Flow_unit_test();
00123     f1->setSource(s1);
00124     assert(f1->getSource() != NULL);
00125
00126     System* s2 = new SystemIMP();
00127     Flow* f2 = new Flow_unit_test("f2", s1);
00128     f2->setSource(s2);
00129     assert(f2->getSource() == s2);
00130
00131     delete s1;
00132     delete s2;
00133     delete f1;
00134     delete f2;
00135 }
```

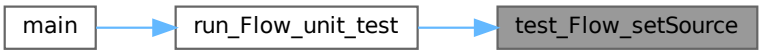
References Flow::getSource(), and Flow::setSource().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.27.1.11 test_Flow_setTarget()

```
void test_Flow_setTarget ( )
```

This function run the unit test of the flow setTarge.

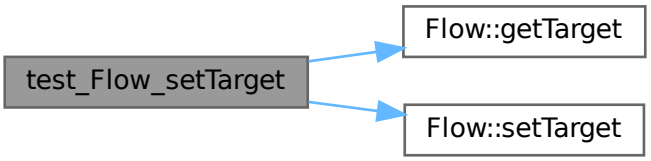
```
00137                                {
00138     std::cout « "        * setTarget tests\n";
00139     System* s1 = new SystemIMP();
```

```
00140     Flow* f1 = new Flow_unit_test();
00141     f1->setTarget(s1);
00142     assert(f1->getTarget() != NULL);
00143
00144     System* s2 = new SystemIMP();
00145     System* s3 = new SystemIMP();
00146     Flow* f2 = new Flow_unit_test("f2", s1, s2);
00147     f2->setTarget(s3);
00148     assert(f2->getTarget() == s3);
00149
00150     delete s1;
00151     delete s2;
00152     delete s3;
00153     delete f1;
00154     delete f2;
00155 }
```

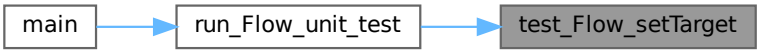
References Flow::getTarget(), and Flow::setTarget().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

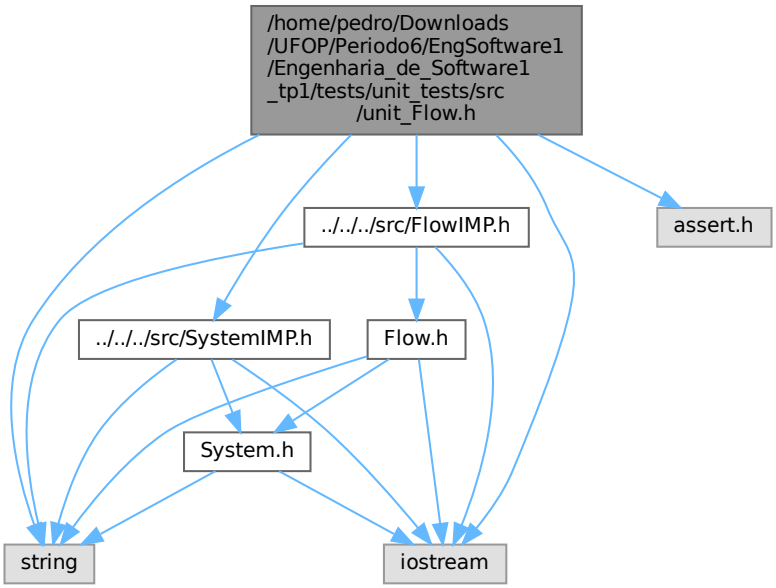


5.28 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/unit_tests/src/unit_Flow.h File Reference

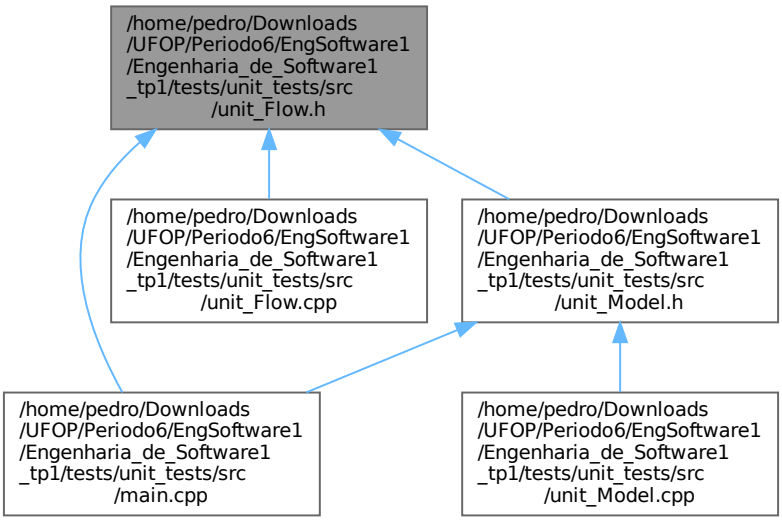
```
#include "../../../src/FlowIMP.h"
#include "../../../src/SystemIMP.h"
#include <iostream>
#include <string>
```

```
#include <assert.h>
```

Include dependency graph for unit_Flow.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Flow_unit_test

Functions

- void test_Flow_constructor ()

  This function run the unit test of the flow constructor.
- void test_Flow_destructor ()

  This function run the unit test of the flow destructor.
- void test_Flow_getName ()

  This function run the unit test of the flow getName.
- void test_Flow_getSource ()

  This function run the unit test of the flow getSource.
- void test_Flow_getTarget ()

  This function run the unit test of the flow getTarge.
- void test_Flow_setName ()

  This function run the unit test of the flow setName.
- void test_Flow_setSource ()

  This function run the unit test of the flow setSource.
- void test_Flow_setTarget ()

  This function run the unit test of the flow setTarge.
- void test_Flow_execute ()

  This function run the unit test of the flow execute.
- void test_Flow_equal ()

  This function run the unit test of the flow equal comparation.
- void run_Flow_unit_test ()

  This function run the unit tests of the flow.

5.28.1 Function Documentation

5.28.1.1 run_Flow_unit_test()

```
void run_Flow_unit_test ( )
```

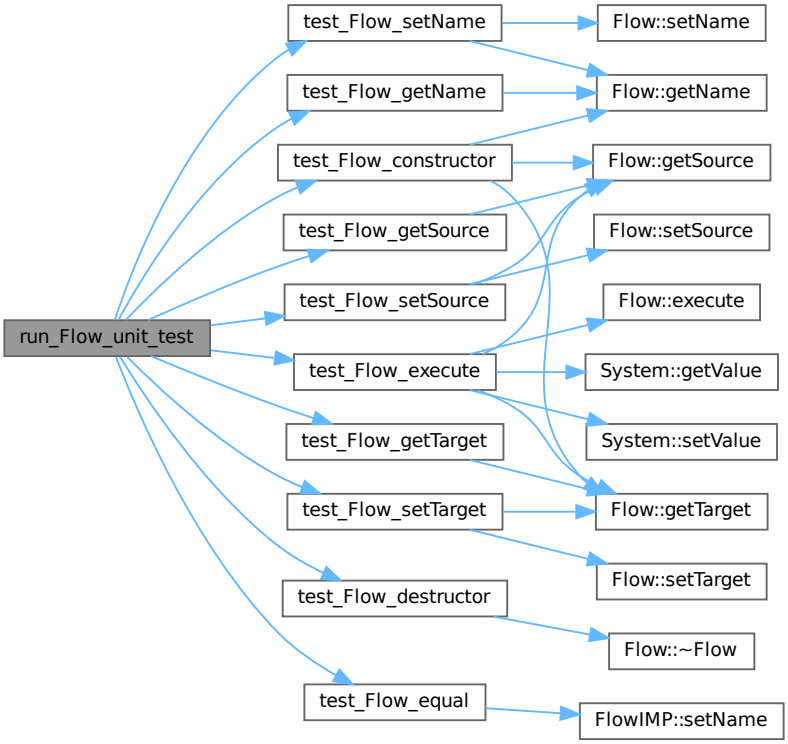
This function run the unit tests of the flow.

```
00189                                {
00190     std::cout « "    Start Flow unit tests\n";
00191     test_Flow_constructor();
00192     test_Flow_destructor();
00193     test_Flow_getName();
00194     test_Flow_getSource();
00195     test_Flow_getTarget();
00196     test_Flow_setName();
00197     test_Flow_setSource();
00198     test_Flow_setTarget();
00199     test_Flow_execute();
00200     test_Flow_equal();
00201     std::cout « "    End Flow unit tests\n\n";
00202 }
```

References test_Flow_constructor(), test_Flow_destructor(), test_Flow_equal(), test_Flow_execute(), test_Flow_getName(), test_Flow_getSource(), test_Flow_getTarget(), test_Flow_setName(), test_Flow_setSource(), and test_Flow_setTarget().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:

5.28.1.2 test_Flow_constructor()

```
void test_Flow_constructor ( )
```

This function run the unit test of the flow constructor.

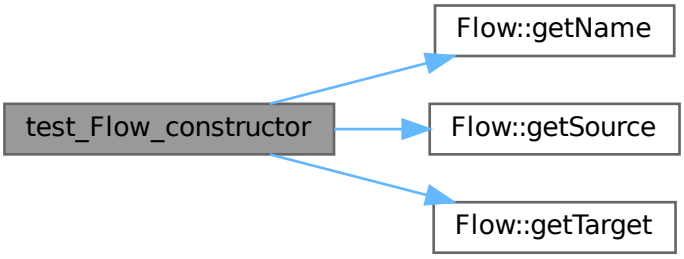
```
00023                                {
00024     std::cout « "        * Constructor tests\n";
00025     Flow* f1 = new Flow_unit_test();
00026     assert(f1->getName() == "NO_NAME");
00027     assert(f1->getSource() == NULL);
00028     assert(f1->getTarget() == NULL);
00029
00030     Flow* f2 = new Flow_unit_test("f2");
00031     assert(f2->getName() == "f2");
```

```
00032     assert(f2->getSource() == NULL);
00033     assert(f2->getTarget() == NULL);
00034
00035     System* s1 = new SystemIMP();
00036     Flow* f3 = new Flow_unit_test("f3", s1);
00037     assert(f3->getName() == "f3");
00038     assert(f3->getSource() == s1);
00039     assert(f3->getTarget() == NULL);
00040
00041     System* s2 = new SystemIMP();
00042     System* s3 = new SystemIMP();
00043     Flow* f4 = new Flow_unit_test("f4", s2, s3);
00044     assert(f4->getName() == "f4");
00045     assert(f4->getSource() == s2);
00046     assert(f4->getTarget() == s3);
00047
00048     delete f1;
00049     delete f2;
00050     delete s1;
00051     delete f3;
00052     delete s2;
00053     delete s3;
00054     delete f4;
00055 }
```

References Flow::getName(), Flow::getSource(), and Flow::getTarget().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.28.1.3 test_Flow_destructor()

```
void test_Flow_destructor ( )
```

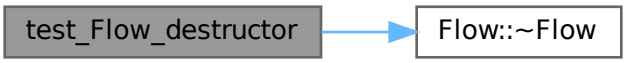
This function run the unit test of the flow destructor.

```
00057                                {
00058     std::cout « "        * Destructor tests\n";
00059     Flow* f1 = new Flow_unit_test();
00060     f1->~Flow();
00061 }
```

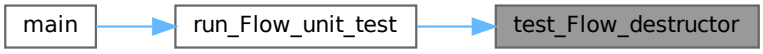
References Flow::~Flow().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.28.1.4 test_Flow_equal()

```
void test_Flow_equal ( )
```

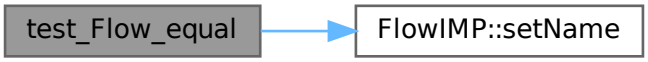
This function run the unit test of the flow equal comparation.

```
00175                        {
00176     std::cout « "        * Equal tests\n";
00177
00178     FlowIMP* f1 = new Flow_unit_test();
00179     FlowIMP* f2 = new Flow_unit_test();
00180     assert(*f1 == *f2);
00181
00182     f1->setName("f1");
00183     assert(*f1 != *f2);
00184
00185     delete f1;
00186     delete f2;
00187 }
```

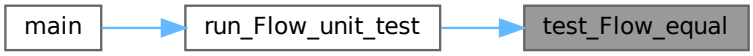
References FlowIMP::setName().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.28.1.5 test_Flow_execute()

```
void test_Flow_execute ( )
```

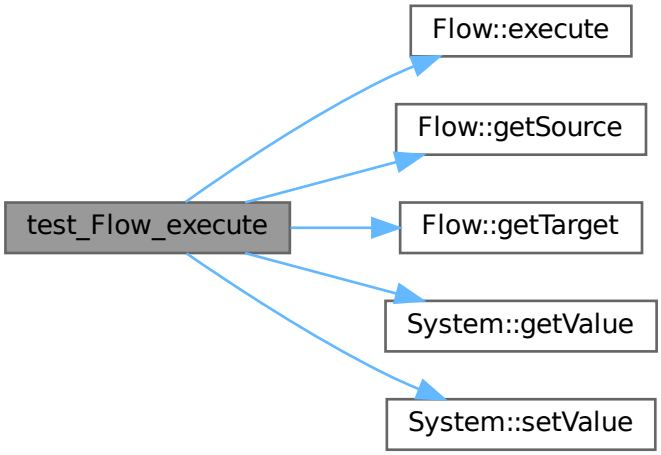
This function run the unit test of the flow execute.

```
00157                         {
00158     std::cout « "        * Execute tests\n";
00159
00160     System* s1 = new SystemIMP("s1", 100);
00161     System* s2 = new SystemIMP("s2", 0.0);
00162     Flow* f1 = new Flow_unit_test("f1", s1, s2);
00163     double result = f1->execute();
00164     f1->getTarget()->setValue(f1->getTarget()->getValue() + result);
00165     f1->getSource()->setValue(f1->getSource()->getValue() - result);
00166
00167     assert(s1->getValue() == 0);
00168     assert(s2->getValue() == 100);
00169
00170     delete s1;
00171     delete s2;
00172     delete f1;
00173 }
```

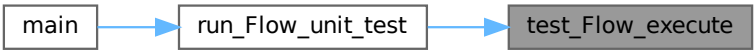
References Flow::execute(), Flow::getSource(), Flow::getTarget(), System::getValue(), and System::setValue().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.28.1.6 test_Flow_getName()

```
void test_Flow_getName ( )
```

This function run the unit test of the flow getName.

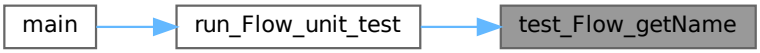
```
00063                           {
00064     std::cout « "         * getName tests\n";
00065     Flow* f1 = new Flow_unit_test();
00066     assert(f1->getName() == "NO_NAME");
00067
00068     Flow* f2 = new Flow_unit_test("f2");
00069     assert(f2->getName() == "f2");
00070
00071     delete f1;
00072     delete f2;
00073 }
```

References Flow::getName().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.28.1.7 test_Flow_getSource()

```
void test_Flow_getSource ( )
```

This function run the unit test of the flow getSource.

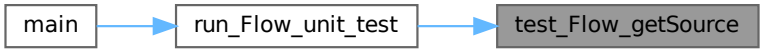
```
00075                                {
00076     std::cout « "        * getSource tests\n";
00077     Flow* f1 = new Flow_unit_test();
00078     assert(f1->getSource() == NULL);
00079
00080     System* s1 = new SystemIMP();
00081     Flow* f2 = new Flow_unit_test("f2", s1);
00082     assert(f2->getSource() == s1);
00083
00084     delete f1;
00085     delete s1;
00086     delete f2;
00087 }
```

References Flow::getSource().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.28.1.8 test_Flow_getTarget()

```
void test_Flow_getTarget ( )
```

This function run the unit test of the flow getTarge.

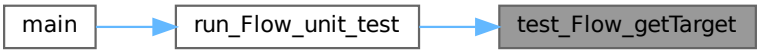
```
00089                                {
00090     std::cout « "        * getTarget tests\n";
00091     Flow* f1 = new Flow_unit_test();
00092     assert(f1->getTarget() == NULL);
00093
00094     System* s1 = new SystemIMP();
00095     System* s2 = new SystemIMP();
00096     Flow* f2 = new Flow_unit_test("f2", s1, s2);
00097     assert(f2->getTarget() == s2);
00098
00099     delete f1;
00100     delete s1;
00101     delete s2;
00102     delete f2;
00103 }
```

References Flow::getTarget().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.28.1.9 test_Flow_setName()

```
void test_Flow_setName ( )
```

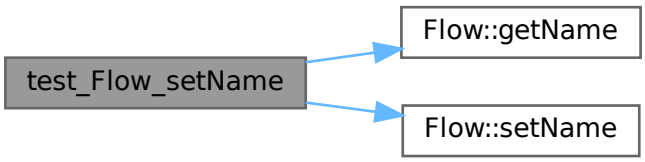
This function run the unit test of the flow setName.

```
00105                           {
00106     std::cout « "         * setName tests\n";
00107     Flow* f1 = new Flow_unit_test();
00108     f1->setName("f1");
00109     assert(f1->getName() != "NO_NAME");
00110
00111     Flow* f2 = new Flow_unit_test("f");
00112     f2->setName("f2");
00113     assert(f2->getName() == "f2");
00114
00115     delete f1;
00116     delete f2;
00117 }
```

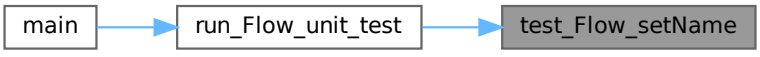
References Flow::getName(), and Flow::setName().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.28.1.10 test_Flow_setSource()

```
void test_Flow_setSource ( )
```

This function run the unit test of the flow setSource.

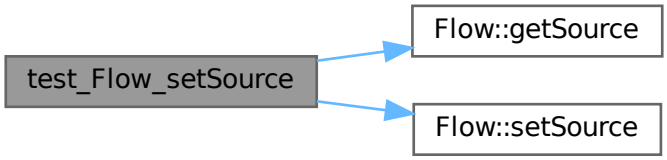
```
00119                             {
00120     std::cout « "         * setSource tests\n";
00121     System* s1 = new SystemIMP();
00122     Flow* f1 = new Flow_unit_test();
00123     f1->setSource(s1);
00124     assert(f1->getSource() != NULL);
00125
```

```
00126     System* s2 = new SystemIMP();
00127     Flow* f2 = new Flow_unit_test("f2", s1);
00128     f2->setSource(s2);
00129     assert(f2->getSource() == s2);
00130
00131     delete s1;
00132     delete s2;
00133     delete f1;
00134     delete f2;
00135 }
```

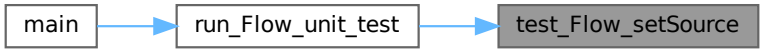
References Flow::getSource(), and Flow::setSource().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.28.1.11 test_Flow_setTarget()

```
void test_Flow_setTarget ( )
```

This function run the unit test of the flow setTarge.

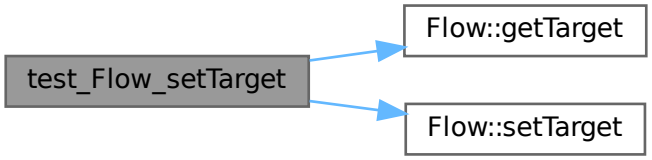
```
00137                                {
00138     std::cout « "        * setTarget tests\n";
00139     System* s1 = new SystemIMP();
00140     Flow* f1 = new Flow_unit_test();
00141     f1->setTarget(s1);
00142     assert(f1->getTarget() != NULL);
00143
00144     System* s2 = new SystemIMP();
00145     System* s3 = new SystemIMP();
00146     Flow* f2 = new Flow_unit_test("f2", s1, s2);
00147     f2->setTarget(s3);
00148     assert(f2->getTarget() == s3);
00149
00150     delete s1;
00151     delete s2;
00152     delete s3;
00153     delete f1;
```

```
00154     delete f2;
00155 }
```

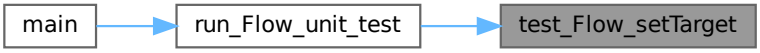
References Flow::getTarget(), and Flow::setTarget().

Referenced by run_Flow_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.29 unit_Flow.h

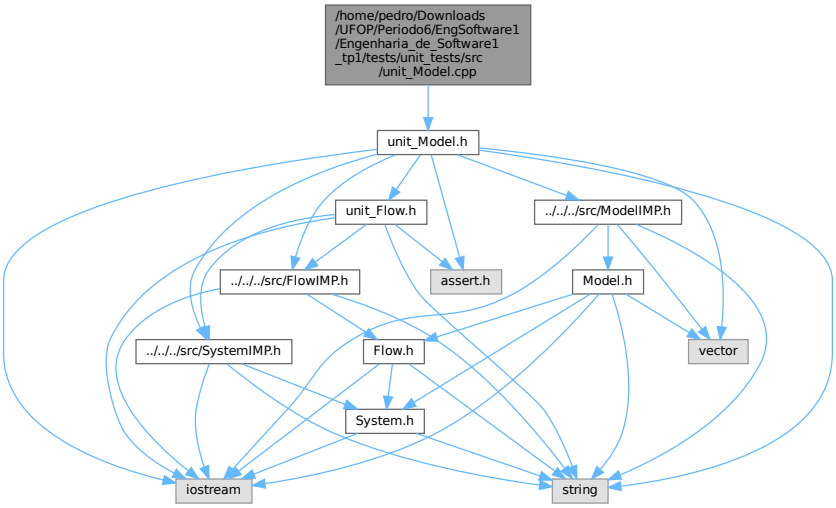
Go to the documentation of this file.

```
00001 /*************************************************************
00002  * @file unit_Flow.h
00003  * @author Pedro Augusto Sousa Gonçalves
00004  * @brief This file represents the flow units tests
00005 *************************************************************/
00006
00007 #ifndef UNIT_FLOW_H
00008 #define UNIT_FLOW_H
00009
00010 #include "../../../src/FlowIMP.h"
00011 #include "../../../src/SystemIMP.h"
00012
00013 #include <iostream>
00014 #include <string>
00015 #include <assert.h>
00016
00017
      /*****************************************************************************************************************
00018  * @brief This Flow class connects two systems and through the entered equation transfers values from
      one system to another
00019
      *****************************************************************************************************************/
00020 class Flow_unit_test : public FlowIMP{
00021     private:
00026         Flow_unit_test(const Flow_unit_test& other);
00027
00028     public:
00029         //Contructor
```

```
00036         Flow_unit_test(const std::string& name = "NO_NAME", System* source = NULL, System* target =
      NULL);
00037
00038         //Destructor
00042         virtual ~Flow_unit_test();
00043
00044         //Metodos
00049         virtual double execute() override;
00050 };
00051
00055 void test_Flow_constructor();
00059 void test_Flow_destructor();
00063 void test_Flow_getName();
00067 void test_Flow_getSource();
00071 void test_Flow_getTarget();
00075 void test_Flow_setName();
00079 void test_Flow_setSource();
00083 void test_Flow_setTarget();
00087 void test_Flow_execute();
00091 void test_Flow_equal();
00095 void run_Flow_unit_test();
00096
00097 #endif
```

5.30 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/unit_tests/src/unit_Model.cpp File Reference

`#include "unit_Model.h"`
Include dependency graph for unit_Model.cpp:



Functions

- void test_Model_constructor ()

  This function run the unit test of the model constructor.
- void test_Model_destructor ()

  This function run the unit test of the model destructor.
- void test_Model_getName ()

  This function run the unit test of the model getName.

- void test_Model_getSystems_and_add ()

  This function run the unit test of the model getSystems and add System.
- void test_Model_getFlows_and_add ()

  This function run the unit test of the model getFlows and add Flow.
- void test_Model_getStartTime ()

  This function run the unit test of the model getStartTime.
- void test_Model_getEndTime ()

  This function run the unit test of the model getEndTime.
- void test_Model_setName ()

  This function run the unit test of the model setName.
- void test_Model_setSystems ()

  This function run the unit test of the model setSystems.
- void test_Model_setFlows ()

  This function run the unit test of the model setFlows.
- void test_Model_setStartTime ()

  This function run the unit test of the model setStartTime.
- void test_Model_setEndTime ()

  This function run the unit test of the model setEndTime.
- void test_Model_setTime ()

  This function run the unit test of the model setTime.
- void test_Model_equal ()

  This function run the unit test of the model equal.
- void test_Model_rmv_Sytem ()

  This function run the unit test of the model rmv System.
- void test_Model_rmv_Flow ()

  This function run the unit test of the model rmv Flow.
- void run_Model_unit_test ()

  This function run the unit tests of the model.

5.30.1 Function Documentation

5.30.1.1 run_Model_unit_test()

```
void run_Model_unit_test ( )
```

This function run the unit tests of the model.

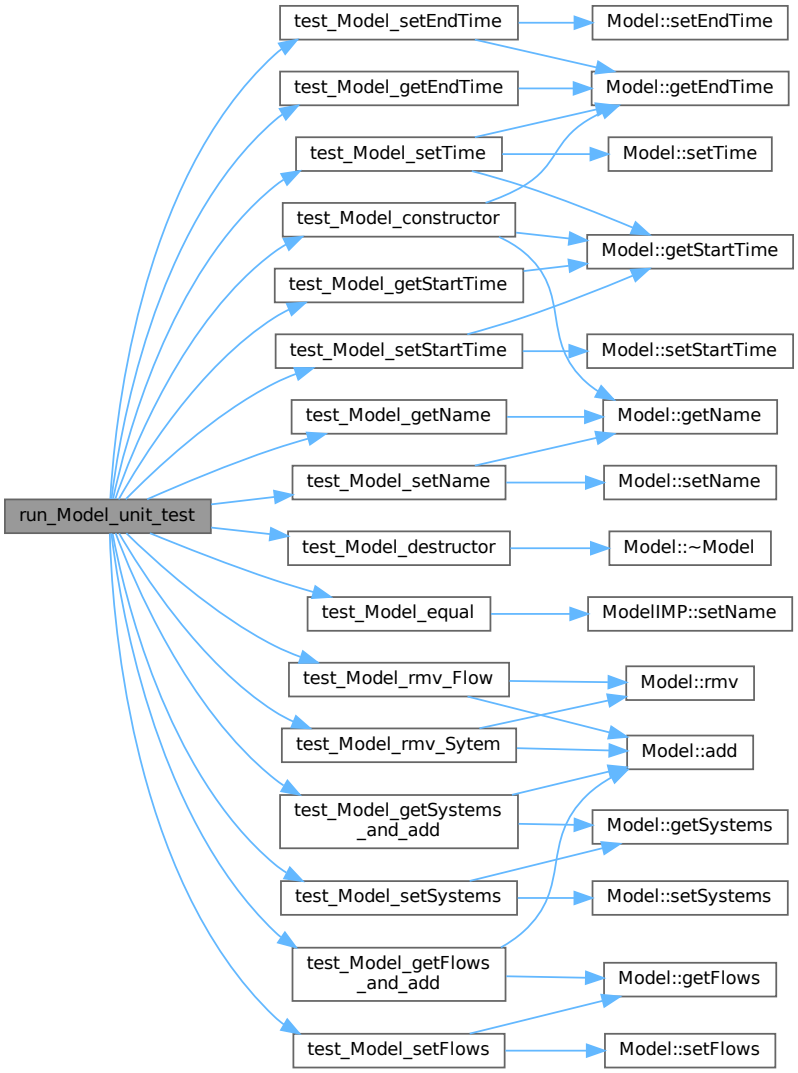
```
00223                                {
00224     std::cout « "    Start Model unit tests\n";
00225     test_Model_constructor();
00226     test_Model_destructor();
00227     test_Model_getName();
00228     test_Model_getSystems_and_add();
00229     test_Model_getFlows_and_add();
00230     test_Model_getStartTime();
00231     test_Model_getEndTime();
00232     test_Model_setName();
00233     test_Model_setSystems();
00234     test_Model_setFlows();
00235     test_Model_setStartTime();
00236     test_Model_setEndTime();
00237     test_Model_setTime();
00238     test_Model_rmv_Sytem();
00239     test_Model_rmv_Flow();
00240     test_Model_equal();
00241     std::cout « "    End Model unit tests\n";
00242 }
```

References test_Model_constructor(), test_Model_destructor(), test_Model_equal(), test_Model_getEndTime(), test_Model_getFlows_and_add(), test_Model_getName(), test_Model_getStartTime(), test_Model_getSystems_and_add(),

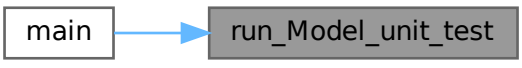
test_Model_rmv_Flow(), test_Model_rmv_Sytem(), test_Model_setEndTime(), test_Model_setFlows(), test_Model_setName(), test_Model_setStartTime(), test_Model_setSystems(), and test_Model_setTime().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:



5.30.1.2 test_Model_constructor()

```
void test_Model_constructor ( )
```

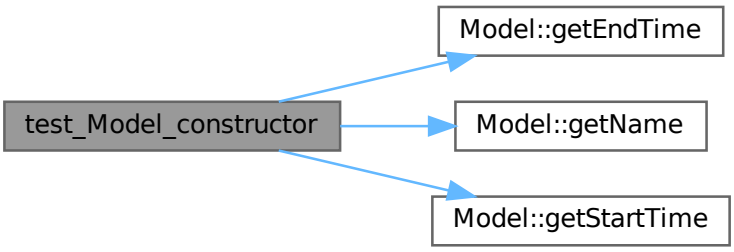
This function run the unit test of the model constructor.

```
00003                                {
00004     std::cout « "        * Constructor tests\n";
00005     Model* m1 = new ModelIMP();
00006     assert(m1->getName() == "NO_NAME");
00007     assert(m1->getStartTime() == 0);
00008     assert(m1->getEndTime() == 1);
00009
00010     Model* m2 = new ModelIMP("m2");
00011     assert(m2->getName() == "m2");
00012     assert(m2->getStartTime() == 0);
00013     assert(m2->getEndTime() == 1);
00014
00015     Model* m3 = new ModelIMP("m3", 2);
00016     assert(m3->getName() == "m3");
00017     assert(m3->getStartTime() == 2);
00018     assert(m3->getEndTime() == 1);
00019
00020     Model* m4 = new ModelIMP("m4", 2, 5);
00021     assert(m4->getName() == "m4");
00022     assert(m4->getStartTime() == 2);
00023     assert(m4->getEndTime() == 5);
00024
00025     delete m1;
00026     delete m2;
00027     delete m3;
00028     delete m4;
00029 }
```

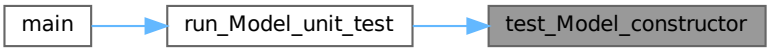
References Model::getEndTime(), Model::getName(), and Model::getStartTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.30.1.3 test_Model_destructor()

```
void test_Model_destructor ( )
```

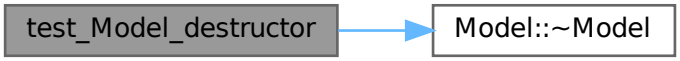
This function run the unit test of the model destructor.

```
00031                                {
00032     std::cout « "         * Destructor tests\n";
00033     Model* m1 = new ModelIMP();
00034     m1->~Model();
00035 }
```

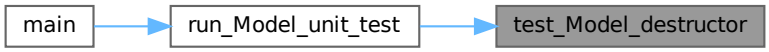
References Model::~Model().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.30.1.4 test_Model_equal()

```
void test_Model_equal ( )
```

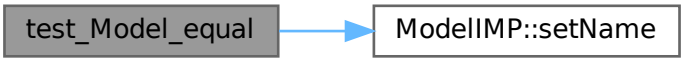
This function run the unit test of the model equal.

```
00183                              {
00184     std::cout « "         * Equal tests\n";
00185
00186     ModelIMP* m1 = new ModelIMP();
00187     ModelIMP* m2 = new ModelIMP();
00188     assert(*m1 == *m2);
00189
00190     m1->setName("m1");
00191     assert(m1 != m2);
00192
00193     delete m1;
00194     delete m2;
00195 }
```

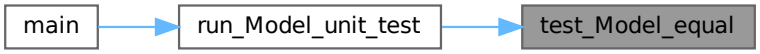
References ModelIMP::setName().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.30.1.5 test_Model_getEndTime()

```
void test_Model_getEndTime ( )
```

This function run the unit test of the model getEndTime.

```
00087                                {
00088     std::cout « "        * getEndTime tests\n";
00089     Model* m1 = new ModelIMP();
00090     assert(m1->getEndTime() == 1);
00091
00092     Model* m2 = new ModelIMP("m2", 0, 2);
00093     assert(m2->getEndTime() == 2);
00094
00095     delete m1;
00096     delete m2;
00097 }
```

References Model::getEndTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:

5.30.1.6 test_Model_getFlows_and_add()

```
void test_Model_getFlows_and_add ( )
```

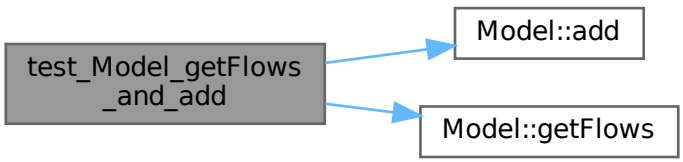
This function run the unit test of the model getFlows and add Flow.

```
00062                                   {
00063     std::cout « "        * getFlows and add Flows tests\n";
00064     Flow* f1 = new Flow_unit_test("f1");
00065     Model* m1 = new ModelIMP("m1");
00066     std::vector<Flow*> flows;
00067     flows.push_back(f1);
00068     m1->add(f1);
00069     assert(m1->getFlows() == flows);
00070
00071     delete f1;
00072     delete m1;
00073 }
```

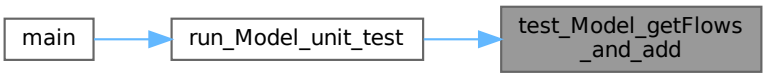
References Model::add(), and Model::getFlows().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.30.1.7 test_Model_getName()

```
void test_Model_getName ( )
```

This function run the unit test of the model getName.

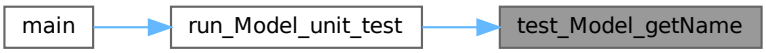
```
00037                           {
00038     std::cout « "         * getName tests\n";
00039     Model* m1 = new ModelIMP();
00040     assert(m1->getName() == "NO_NAME");
00041
00042     Model* m2 = new ModelIMP("m2");
00043     assert(m2->getName() == "m2");
00044
00045     delete m1;
00046     delete m2;
00047 }
```

References Model::getName().

Referenced by run_Model_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.30.1.8 test_Model_getStartTime()

```
void test_Model_getStartTime ( )
```

This function run the unit test of the model getStartTime.

```
00075                               {
00076     std::cout « "         * getStartTime tests\n";
00077     Model* m1 = new ModelIMP();
00078     assert(m1->getStartTime() == 0);
00079
00080     Model* m2 = new ModelIMP("m2", 1);
00081     assert(m2->getStartTime() == 1);
00082
00083     delete m1;
00084     delete m2;
00085 }
```

References Model::getStartTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:

5.30.1.9 test_Model_getSystems_and_add()

```
void test_Model_getSystems_and_add ( )
```

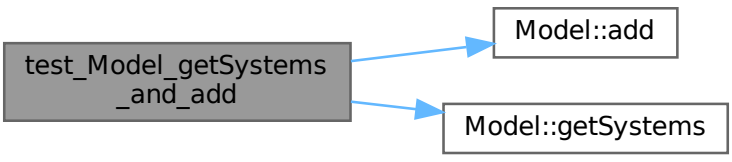
This function run the unit test of the model getSystems and add System.

```
00049                                       {
00050     std::cout « "        * getSystems and add Systems tests\n";
00051     System* s1 = new SystemIMP("s1");
00052     Model* m1 = new ModelIMP("m1");
00053     std::vector<System*> systems;
00054     systems.push_back(s1);
00055     m1->add(s1);
00056     assert(m1->getSystems() == systems);
00057 
00058     delete s1;
00059     delete m1;
00060 }
```

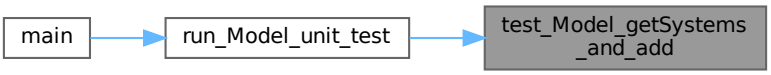
References Model::add(), and Model::getSystems().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.30.1.10 test_Model_rmv_Flow()

```
void test_Model_rmv_Flow ( )
```

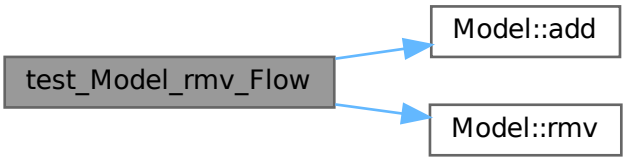
This function run the unit test of the model rmv Flow.

```
00210                                {
00211     std::cout « "        * Remove Flow tests\n";
00212
00213     Model* model1 = new ModelIMP();
00214     FlowIMP* flow1 = new Flow_unit_test("flow1");
00215
00216     model1->add(flow1);
00217     assert(model1->rmv(flow1));
00218
00219     delete model1;
00220     delete flow1;
00221 }
```

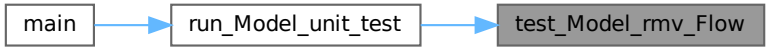
References Model::add(), and Model::rmv().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.30.1.11 test_Model_rmv_Sytem()

```
void test_Model_rmv_Sytem ( )
```

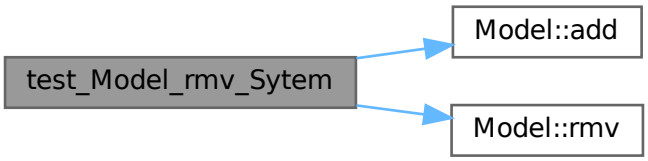
This function run the unit test of the model rmv System.

```
00197                                {
00198     std::cout « "        * Remove System tests\n";
00199
00200     Model* model1 = new ModelIMP();
00201     System* system1 = new SystemIMP("system1");
00202
00203     model1->add(system1);
00204     assert(model1->rmv(system1));
00205
00206     delete model1;
00207     delete system1;
00208 }
```

References Model::add(), and Model::rmv().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.30.1.12 test_Model_setEndTime()

```
void test_Model_setEndTime ( )
```

This function run the unit test of the model setEndTime.

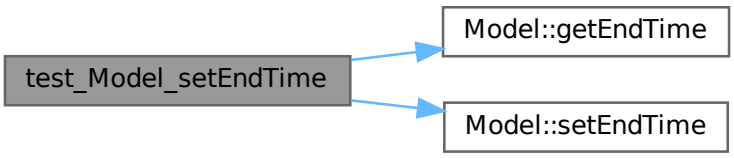
```
00153                                {
00154     std::cout « "        * setEndTime tests\n";
00155     Model* m1 = new ModelIMP();
00156     m1->setEndTime(3);
00157     assert(m1->getEndTime() != 1);
00158
00159     Model* m2 = new ModelIMP("m2", 0, 1);
00160     m2->setEndTime(2);
```

```
00161     assert(m2->getEndTime() == 2);
00162
00163     delete m1;
00164     delete m2;
00165 }
```

References Model::getEndTime(), and Model::setEndTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.30.1.13 test_Model_setFlows()

```
void test_Model_setFlows ( )
```

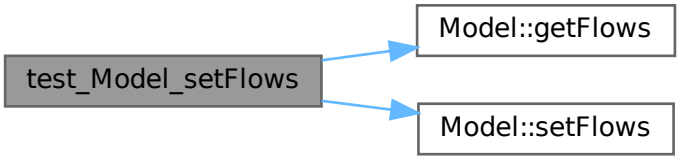
This function run the unit test of the model setFlows.

```
00126                          {
00127     std::cout « "        * setFlows tests\n";
00128     Flow* f1 = new Flow_unit_test("f1");
00129     Model* m1 = new ModelIMP("m1");
00130     std::vector<Flow*> flows;
00131     flows.push_back(f1);
00132     m1->setFlows(flows);
00133     assert(m1->getFlows() == flows);
00134
00135     delete f1;
00136     delete m1;
00137 }
```

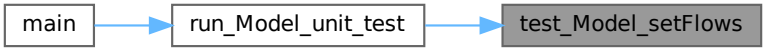
References Model::getFlows(), and Model::setFlows().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.30.1.14 test_Model_setName()

```
void test_Model_setName ( )
```

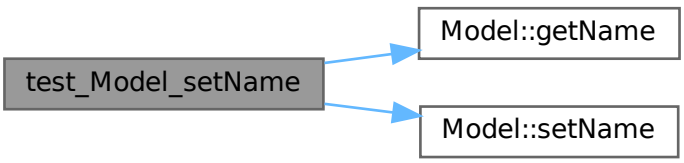
This function run the unit test of the model setName.

```
00099                           {
00100     std::cout « "         * setName tests\n";
00101     Model* m1 = new ModelIMP();
00102     m1->setName("m1");
00103     assert(m1->getName() != "NO_NAME");
00104
00105     Model* m2 = new ModelIMP("m");
00106     m2->setName("m2");
00107     assert(m2->getName() == "m2");
00108
00109     delete m1;
00110     delete m2;
00111 }
```

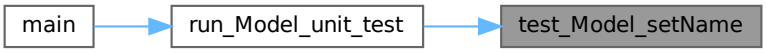
References Model::getName(), and Model::setName().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.30.1.15 test_Model_setStartTime()

```
void test_Model_setStartTime ( )
```

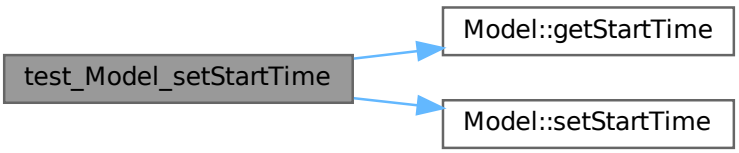
This function run the unit test of the model setStartTime.

```
00139                                {
00140     std::cout « "        * setStartTime tests\n";
00141     Model* m1 = new ModelIMP();
00142     m1->setStartTime(3);
00143     assert(m1->getStartTime() != 0);
00144
00145     Model* m2 = new ModelIMP("m2", 3);
00146     m2->setStartTime(1);
00147     assert(m2->getStartTime() == 1);
00148
00149     delete m1;
00150     delete m2;
00151 }
```

References Model::getStartTime(), and Model::setStartTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.30.1.16 test_Model_setSystems()

```
void test_Model_setSystems ( )
```

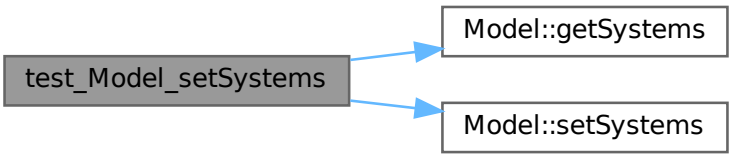
This function run the unit test of the model setSystems.

```
00113                                {
00114     std::cout « "        * setSystems tests\n";
00115     System* s1 = new SystemIMP("s1");
00116     Model* m1 = new ModelIMP("m1");
00117     std::vector<System*> systems;
00118     systems.push_back(s1);
00119     m1->setSystems(systems);
00120     assert(m1->getSystems() == systems);
00121 
00122     delete s1;
00123     delete m1;
00124 }
```

References Model::getSystems(), and Model::setSystems().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.30.1.17 test_Model_setTime()

```
void test_Model_setTime ( )
```

This function run the unit test of the model setTime.

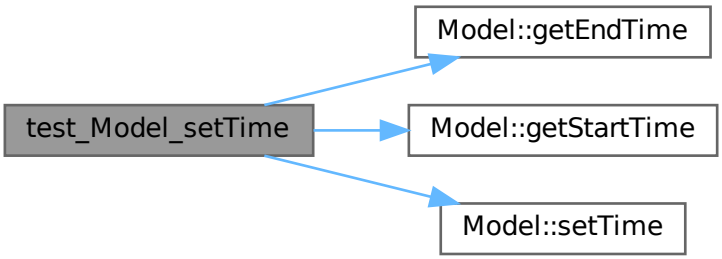
```
00167                                {
00168     std::cout « "        * setTime tests\n";
00169     Model* m1 = new ModelIMP();
00170     m1->setTime(1, 3);
00171     assert(m1->getStartTime() != 0);
00172     assert(m1->getEndTime() != 1);
00173 
00174     Model* m2 = new ModelIMP("m2", 0, 1);
00175     m2->setTime(3, 4);
```

```
00176     assert(m2->getStartTime() == 3);
00177     assert(m2->getEndTime() == 4);
00178
00179     delete m1;
00180     delete m2;
00181 }
```

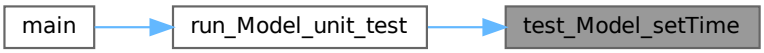
References Model::getEndTime(), Model::getStartTime(), and Model::setTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

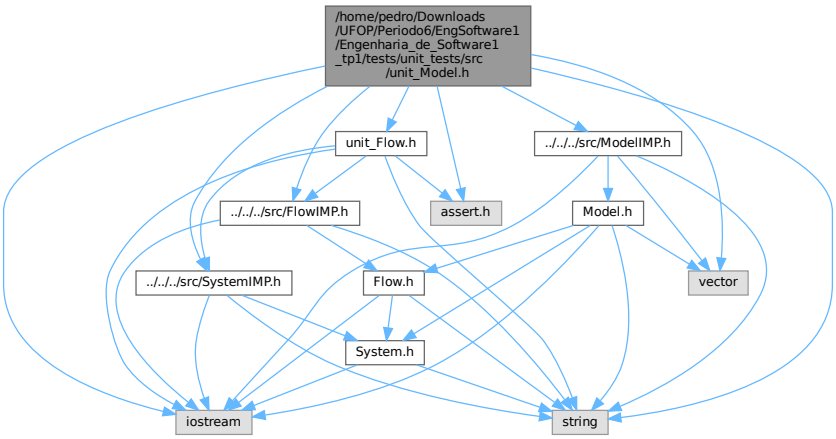


5.31 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/unit_tests/src/unit_Model.h File Reference

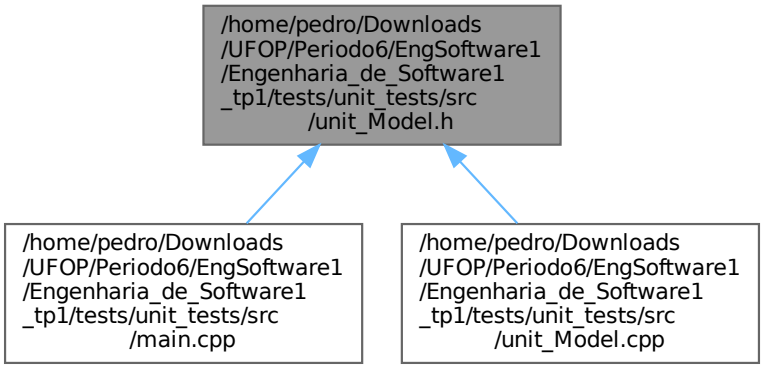
```
#include "../../../src/FlowIMP.h"
#include "../../../src/SystemIMP.h"
#include "../../../src/ModelIMP.h"
#include "unit_Flow.h"
#include <iostream>
#include <string>
#include <assert.h>
```

```
#include <vector>
```

Include dependency graph for unit_Model.h:



This graph shows which files directly or indirectly include this file:



Functions

- void test_Model_constructor ()

  This function run the unit test of the model constructor.
- void test_Model_destructor ()

  This function run the unit test of the model destructor.
- void test_Model_getName ()

  This function run the unit test of the model getName.
- void test_Model_getSystems_and_add ()

  This function run the unit test of the model getSystems and add System.
- void test_Model_getFlows_and_add ()

  This function run the unit test of the model getFlows and add Flow.

- void test_Model_getStartTime ()

  This function run the unit test of the model getStartTime.
- void test_Model_getEndTime ()

  This function run the unit test of the model getEndTime.
- void test_Model_setName ()

  This function run the unit test of the model setName.
- void test_Model_setSystems ()

  This function run the unit test of the model setSystems.
- void test_Model_setFlows ()

  This function run the unit test of the model setFlows.
- void test_Model_setStartTime ()

  This function run the unit test of the model setStartTime.
- void test_Model_setEndTime ()

  This function run the unit test of the model setEndTime.
- void test_Model_setTime ()

  This function run the unit test of the model setTime.
- void test_Model_rmv_Sytem ()

  This function run the unit test of the model rmv System.
- void test_Model_rmv_Flow ()

  This function run the unit test of the model rmv Flow.
- void test_Model_equal ()

  This function run the unit test of the model equal.
- void run_Model_unit_test ()

  This function run the unit tests of the model.

5.31.1 Function Documentation

5.31.1.1 run_Model_unit_test()

```
void run_Model_unit_test ( )
```

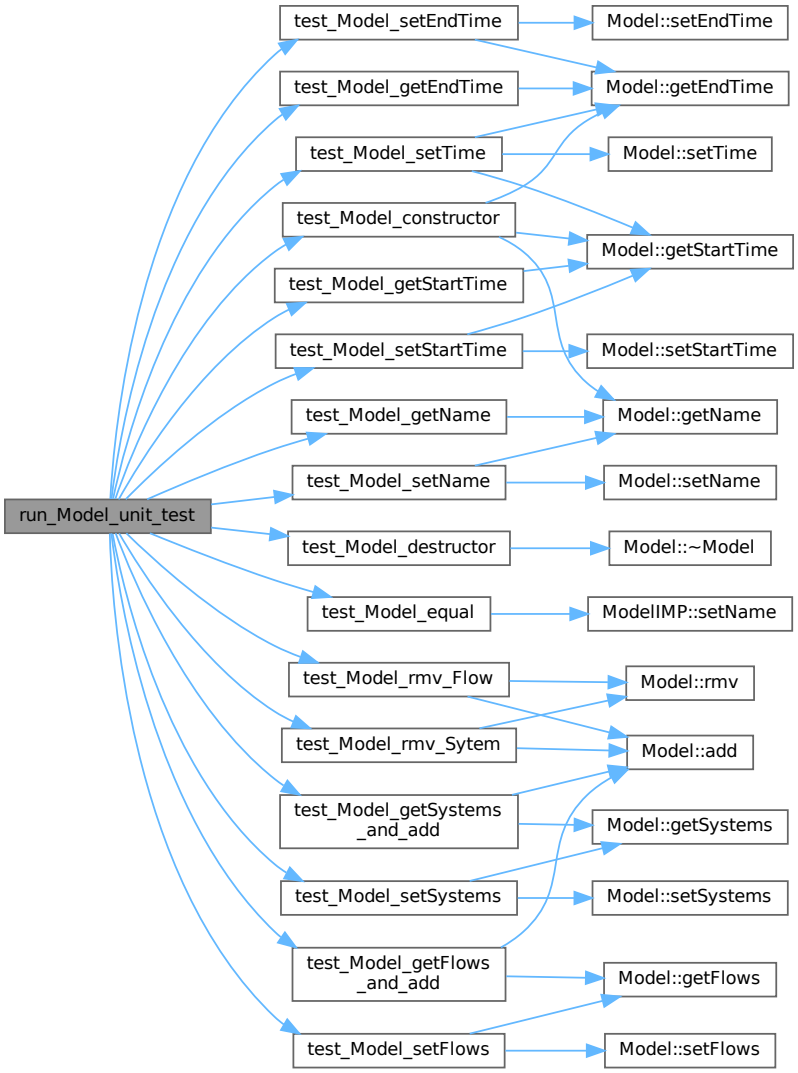
This function run the unit tests of the model.

```
00223                           {
00224     std::cout « "    Start Model unit tests\n";
00225     test_Model_constructor();
00226     test_Model_destructor();
00227     test_Model_getName();
00228     test_Model_getSystems_and_add();
00229     test_Model_getFlows_and_add();
00230     test_Model_getStartTime();
00231     test_Model_getEndTime();
00232     test_Model_setName();
00233     test_Model_setSystems();
00234     test_Model_setFlows();
00235     test_Model_setStartTime();
00236     test_Model_setEndTime();
00237     test_Model_setTime();
00238     test_Model_rmv_Sytem();
00239     test_Model_rmv_Flow();
00240     test_Model_equal();
00241     std::cout « "    End Model unit tests\n";
00242 }
```

References test_Model_constructor(), test_Model_destructor(), test_Model_equal(), test_Model_getEndTime(), test_Model_getFlows_and_add(), test_Model_getName(), test_Model_getStartTime(), test_Model_getSystems_and_add(), test_Model_rmv_Flow(), test_Model_rmv_Sytem(), test_Model_setEndTime(), test_Model_setFlows(), test_Model_setName(), test_Model_setStartTime(), test_Model_setSystems(), and test_Model_setTime().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:

5.31.1.2 test_Model_constructor()

```
void test_Model_constructor ( )
```

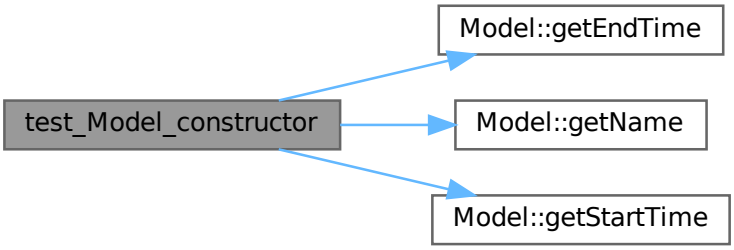
This function run the unit test of the model constructor.

```
00003                                {
00004     std::cout « "        * Constructor tests\n";
00005     Model* m1 = new ModelIMP();
00006     assert(m1->getName() == "NO_NAME");
00007     assert(m1->getStartTime() == 0);
00008     assert(m1->getEndTime() == 1);
00009 
00010     Model* m2 = new ModelIMP("m2");
00011     assert(m2->getName() == "m2");
00012     assert(m2->getStartTime() == 0);
00013     assert(m2->getEndTime() == 1);
00014 
00015     Model* m3 = new ModelIMP("m3", 2);
00016     assert(m3->getName() == "m3");
00017     assert(m3->getStartTime() == 2);
00018     assert(m3->getEndTime() == 1);
00019 
00020     Model* m4 = new ModelIMP("m4", 2, 5);
00021     assert(m4->getName() == "m4");
00022     assert(m4->getStartTime() == 2);
00023     assert(m4->getEndTime() == 5);
00024 
00025     delete m1;
00026     delete m2;
00027     delete m3;
00028     delete m4;
00029 }
```

References Model::getEndTime(), Model::getName(), and Model::getStartTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.31.1.3 test_Model_destructor()

```
void test_Model_destructor ( )
```

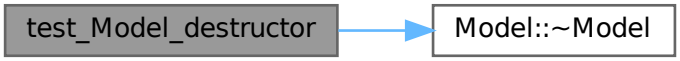
This function run the unit test of the model destructor.

```
00031                                {
00032     std::cout « "         * Destructor tests\n";
00033     Model* m1 = new ModelIMP();
00034     m1->~Model();
00035 }
```

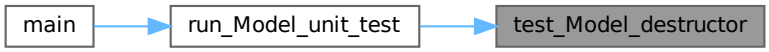
References Model::~Model().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.31.1.4 test_Model_equal()

```
void test_Model_equal ( )
```

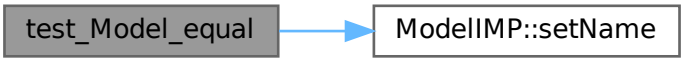
This function run the unit test of the model equal.

```
00183                              {
00184     std::cout « "         * Equal tests\n";
00185
00186     ModelIMP* m1 = new ModelIMP();
00187     ModelIMP* m2 = new ModelIMP();
00188     assert(*m1 == *m2);
00189
00190     m1->setName("m1");
00191     assert(m1 != m2);
00192
00193     delete m1;
00194     delete m2;
00195 }
```

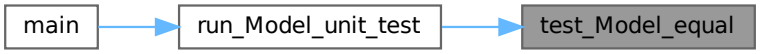
References ModelIMP::setName().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.31.1.5 test_Model_getEndTime()

```
void test_Model_getEndTime ( )
```

This function run the unit test of the model getEndTime.

```
00087                                {
00088     std::cout « "        * getEndTime tests\n";
00089     Model* m1 = new ModelIMP();
00090     assert(m1->getEndTime() == 1);
00091
00092     Model* m2 = new ModelIMP("m2", 0, 2);
00093     assert(m2->getEndTime() == 2);
00094
00095     delete m1;
00096     delete m2;
00097 }
```

References Model::getEndTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:

5.31.1.6 test_Model_getFlows_and_add()

```
void test_Model_getFlows_and_add ( )
```

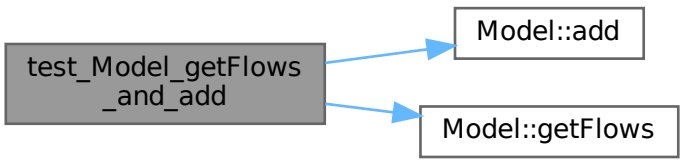
This function run the unit test of the model getFlows and add Flow.

```
00062                                   {
00063     std::cout « "        * getFlows and add Flows tests\n";
00064     Flow* f1 = new Flow_unit_test("f1");
00065     Model* m1 = new ModelIMP("m1");
00066     std::vector<Flow*> flows;
00067     flows.push_back(f1);
00068     m1->add(f1);
00069     assert(m1->getFlows() == flows);
00070
00071     delete f1;
00072     delete m1;
00073 }
```

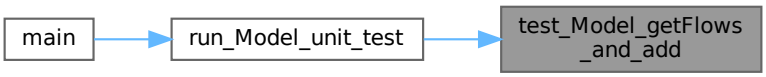
References Model::add(), and Model::getFlows().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.31.1.7 test_Model_getName()

```
void test_Model_getName ( )
```

This function run the unit test of the model getName.

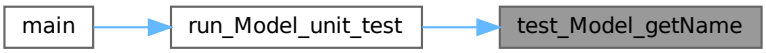
```
00037                           {
00038     std::cout « "         * getName tests\n";
00039     Model* m1 = new ModelIMP();
00040     assert(m1->getName() == "NO_NAME");
00041
00042     Model* m2 = new ModelIMP("m2");
00043     assert(m2->getName() == "m2");
00044
00045     delete m1;
00046     delete m2;
00047 }
```

References Model::getName().

Referenced by run_Model_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.31.1.8 test_Model_getStartTime()

```
void test_Model_getStartTime ( )
```

This function run the unit test of the model getStartTime.

```
00075                               {
00076     std::cout « "         * getStartTime tests\n";
00077     Model* m1 = new ModelIMP();
00078     assert(m1->getStartTime() == 0);
00079
00080     Model* m2 = new ModelIMP("m2", 1);
00081     assert(m2->getStartTime() == 1);
00082
00083     delete m1;
00084     delete m2;
00085 }
```

References Model::getStartTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:

5.31.1.9 test_Model_getSystems_and_add()

```
void test_Model_getSystems_and_add ( )
```

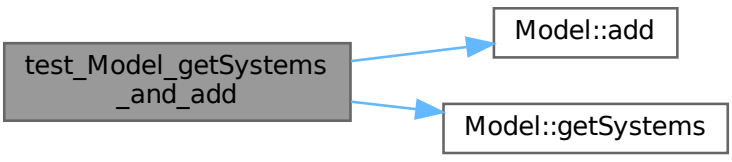
This function run the unit test of the model getSystems and add System.

```
00049                                       {
00050     std::cout « "        * getSystems and add Systems tests\n";
00051     System* s1 = new SystemIMP("s1");
00052     Model* m1 = new ModelIMP("m1");
00053     std::vector<System*> systems;
00054     systems.push_back(s1);
00055     m1->add(s1);
00056     assert(m1->getSystems() == systems);
00057 
00058     delete s1;
00059     delete m1;
00060 }
```

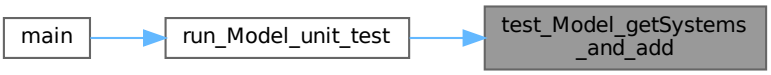
References Model::add(), and Model::getSystems().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.31.1.10 test_Model_rmv_Flow()

```
void test_Model_rmv_Flow ( )
```

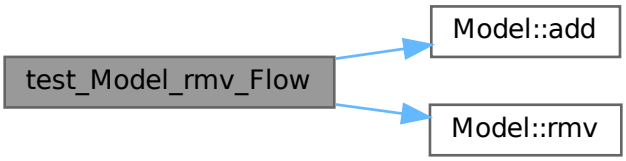
This function run the unit test of the model rmv Flow.

```
00210                                {
00211     std::cout « "        * Remove Flow tests\n";
00212
00213     Model* model1 = new ModelIMP();
00214     FlowIMP* flow1 = new Flow_unit_test("flow1");
00215
00216     model1->add(flow1);
00217     assert(model1->rmv(flow1));
00218
00219     delete model1;
00220     delete flow1;
00221 }
```

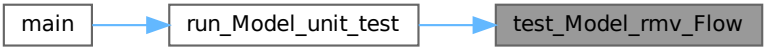
References Model::add(), and Model::rmv().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.31.1.11 test_Model_rmv_Sytem()

```
void test_Model_rmv_Sytem ( )
```

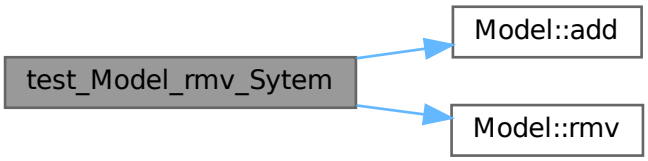
This function run the unit test of the model rmv System.

```
00197                                {
00198     std::cout « "        * Remove System tests\n";
00199
00200     Model* model1 = new ModelIMP();
00201     System* system1 = new SystemIMP("system1");
00202
00203     model1->add(system1);
00204     assert(model1->rmv(system1));
00205
00206     delete model1;
00207     delete system1;
00208 }
```

References Model::add(), and Model::rmv().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.31.1.12 test_Model_setEndTime()

```
void test_Model_setEndTime ( )
```

This function run the unit test of the model setEndTime.

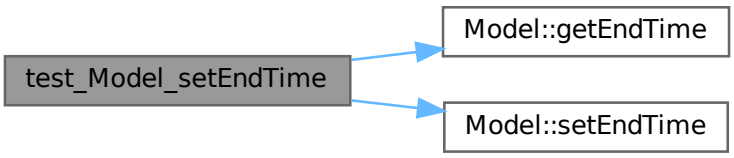
```
00153                                  {
00154     std::cout « "        * setEndTime tests\n";
00155     Model* m1 = new ModelIMP();
00156     m1->setEndTime(3);
00157     assert(m1->getEndTime() != 1);
00158
00159     Model* m2 = new ModelIMP("m2", 0, 1);
00160     m2->setEndTime(2);
```

```
00161     assert(m2->getEndTime() == 2);
00162
00163     delete m1;
00164     delete m2;
00165 }
```

References Model::getEndTime(), and Model::setEndTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.31.1.13 test_Model_setFlows()

```
void test_Model_setFlows ( )
```

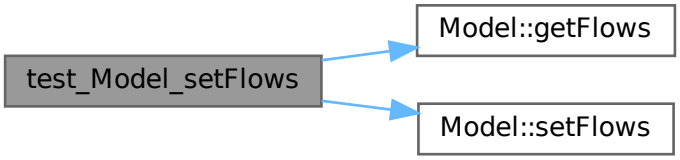
This function run the unit test of the model setFlows.

```
00126                          {
00127     std::cout « "        * setFlows tests\n";
00128     Flow* f1 = new Flow_unit_test("f1");
00129     Model* m1 = new ModelIMP("m1");
00130     std::vector<Flow*> flows;
00131     flows.push_back(f1);
00132     m1->setFlows(flows);
00133     assert(m1->getFlows() == flows);
00134
00135     delete f1;
00136     delete m1;
00137 }
```

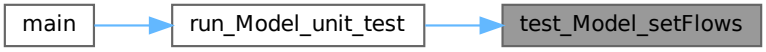
References Model::getFlows(), and Model::setFlows().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.31.1.14 test_Model_setName()

```
void test_Model_setName ( )
```

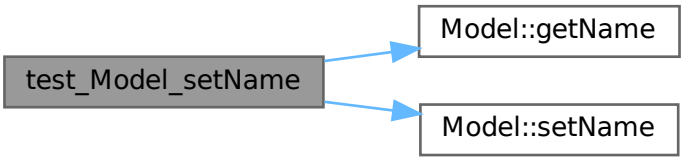
This function run the unit test of the model setName.

```
00099                           {
00100     std::cout « "         * setName tests\n";
00101     Model* m1 = new ModelIMP();
00102     m1->setName("m1");
00103     assert(m1->getName() != "NO_NAME");
00104
00105     Model* m2 = new ModelIMP("m");
00106     m2->setName("m2");
00107     assert(m2->getName() == "m2");
00108
00109     delete m1;
00110     delete m2;
00111 }
```

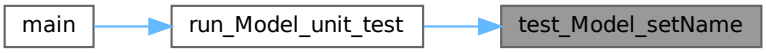
References Model::getName(), and Model::setName().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.31.1.15 test_Model_setStartTime()

```
void test_Model_setStartTime ( )
```

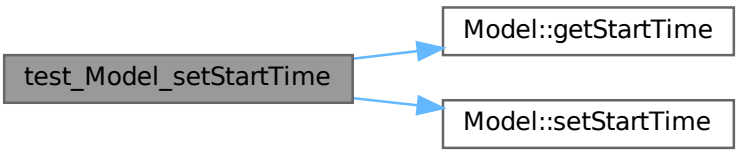
This function run the unit test of the model setStartTime.

```
00139                                {
00140     std::cout « "        * setStartTime tests\n";
00141     Model* m1 = new ModelIMP();
00142     m1->setStartTime(3);
00143     assert(m1->getStartTime() != 0);
00144
00145     Model* m2 = new ModelIMP("m2", 3);
00146     m2->setStartTime(1);
00147     assert(m2->getStartTime() == 1);
00148
00149     delete m1;
00150     delete m2;
00151 }
```

References Model::getStartTime(), and Model::setStartTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.31.1.16 test_Model_setSystems()

```
void test_Model_setSystems ( )
```

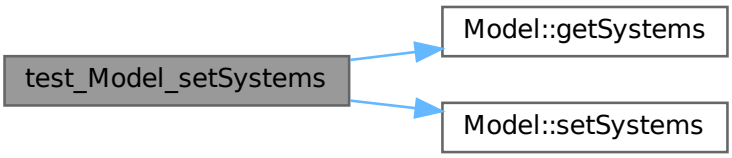
This function run the unit test of the model setSystems.

```
00113                                {
00114     std::cout « "        * setSystems tests\n";
00115     System* s1 = new SystemIMP("s1");
00116     Model* m1 = new ModelIMP("m1");
00117     std::vector<System*> systems;
00118     systems.push_back(s1);
00119     m1->setSystems(systems);
00120     assert(m1->getSystems() == systems);
00121 
00122     delete s1;
00123     delete m1;
00124 }
```

References Model::getSystems(), and Model::setSystems().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:

5.31.1.17 test_Model_setTime()

```
void test_Model_setTime ( )
```

This function run the unit test of the model setTime.

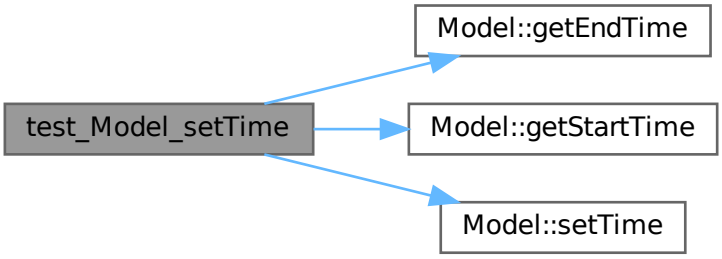
```
00167                                {
00168     std::cout « "        * setTime tests\n";
00169     Model* m1 = new ModelIMP();
00170     m1->setTime(1, 3);
00171     assert(m1->getStartTime() != 0);
00172     assert(m1->getEndTime() != 1);
00173 
00174     Model* m2 = new ModelIMP("m2", 0, 1);
00175     m2->setTime(3, 4);
```

```
00176     assert(m2->getStartTime() == 3);
00177     assert(m2->getEndTime() == 4);
00178
00179     delete m1;
00180     delete m2;
00181 }
```

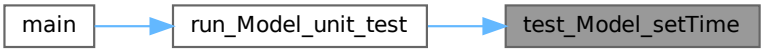
References Model::getEndTime(), Model::getStartTime(), and Model::setTime().

Referenced by run_Model_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.32 unit_Model.h

Go to the documentation of this file.

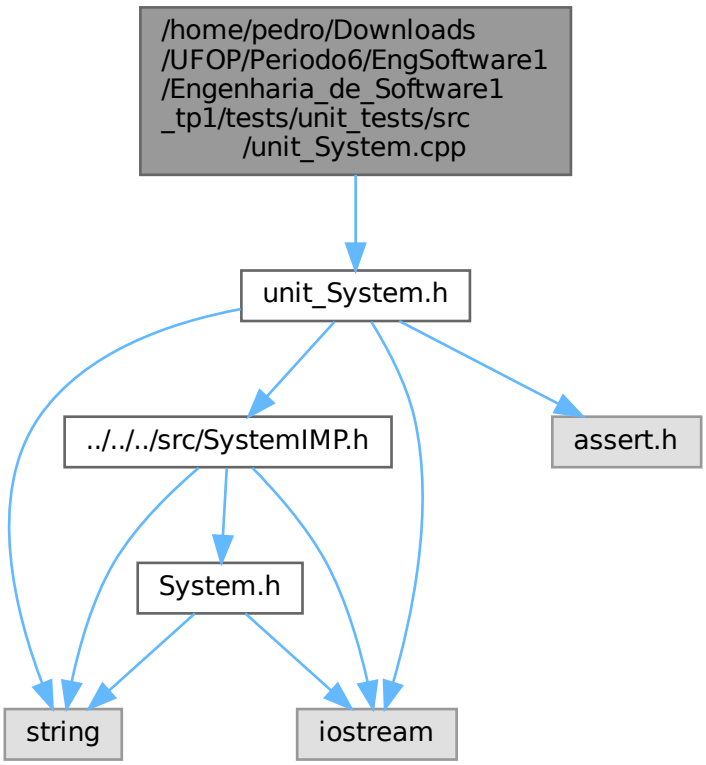
```
00001 #ifndef UNIT_MODEL_H
00002 #define UNIT_MODEL_H
00003
00004 #include "../../../src/FlowIMP.h"
00005 #include "../../../src/SystemIMP.h"
00006 #include "../../../src/ModelIMP.h"
00007 #include "unit_Flow.h"
00008
00009 /************************************************************
00010  * @file unit_Flow.h
00011  * @author Pedro Augusto Sousa Gonçalves
00012  * @brief This file represents the model units tests
00013 ************************************************************/
00014
00015 #include <iostream>
00016 #include <string>
00017 #include <assert.h>
00018 #include <vector>
00019
00023 void test_Model_constructor();
```

```
00027 void test_Model_destructor();
00031 void test_Model_getName();
00035 void test_Model_getSystems_and_add();
00039 void test_Model_getFlows_and_add();
00043 void test_Model_getStartTime();
00047 void test_Model_getEndTime();
00051 void test_Model_setName();
00055 void test_Model_setSystems();
00059 void test_Model_setFlows();
00063 void test_Model_setStartTime();
00067 void test_Model_setEndTime();
00071 void test_Model_setTime();
00075 void test_Model_rmv_Sytem();
00079 void test_Model_rmv_Flow();
00083 void test_Model_equal();
00087 void run_Model_unit_test();
00088
00089 #endif
```

5.33 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/unit_tests/src/unit_↩ System.cpp File Reference

```
#include "unit_System.h"
```

Include dependency graph for unit_System.cpp:



Functions

- void test_System_constructor ()

This function run the unit test of the system constructor.

- void test_System_destructor ()

  This function run the unit test of the system destructor.
- void test_System_getName ()

  This function run the unit test of the system getName.
- void test_System_getValue ()

  This function run the unit test of the system getValue.
- void test_System_setName ()

  This function run the unit test of the system setName.
- void test_System_setValue ()

  This function run the unit test of the system setValeu.
- void test_System_equal ()

  This function run the unit test of the system equal comparation.
- void run_System_unit_test ()

  This function run the unit tests of the system.

5.33.1 Function Documentation

5.33.1.1 run_System_unit_test()

```
void run_System_unit_test ( )
```

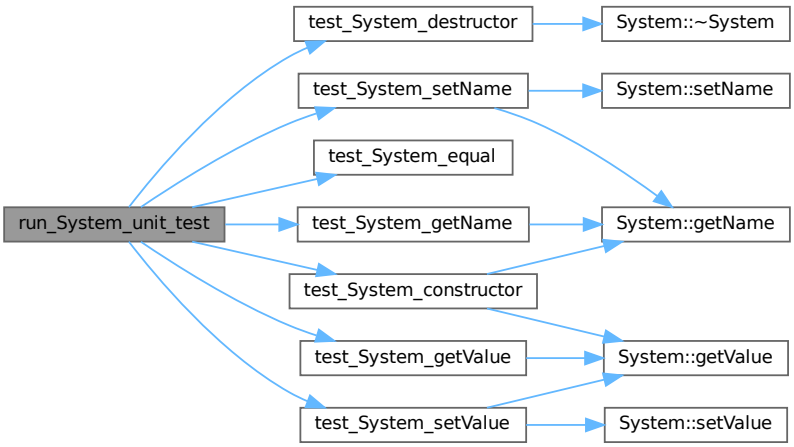
This function run the unit tests of the system.

```
00095                                {
00096     std::cout « "    Start System unit tests\n";
00097     test_System_constructor();
00098     test_System_destructor();
00099     test_System_getName();
00100     test_System_getValue();
00101     test_System_setName();
00102     test_System_setValue();
00103     test_System_equal();
00104     std::cout « "    End System unit tests\n\n";
00105 }
```

References test_System_constructor(), test_System_destructor(), test_System_equal(), test_System_getName(), test_System_getValue(), test_System_setName(), and test_System_setValue().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:

5.33.1.2 test_System_constructor()

```
void test_System_constructor ( )
```

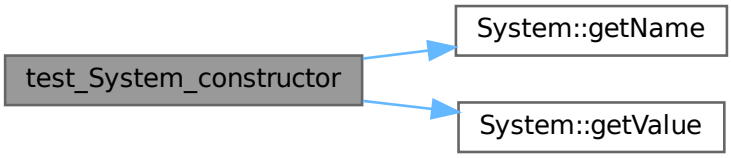
This function run the unit test of the system constructor.

```
00003                                   {
00004     std::cout « "        * Constructor tests\n";
00005     System* s1 = new SystemIMP();
00006     assert(s1->getName() == "NO_NAME");
00007     assert(s1->getValue() == 0.0);
00008
00009     System* s2 = new SystemIMP("s2");
00010     assert(s2->getName() == "s2");
00011     assert(s2->getValue() == 0.0);
00012
00013     System* s3 = new SystemIMP("s3", 2.0);
00014     assert(s3->getName() == "s3");
00015     assert(s3->getValue() == 2.0);
00016
00017     delete s1;
00018     delete s2;
00019     delete s3;
00020 }
```

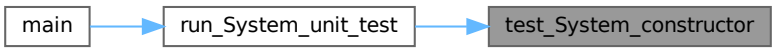
References System::getName(), and System::getValue().

Referenced by run_System_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.33.1.3 test_System_destructor()

```
void test_System_destructor ( )
```

This function run the unit test of the system destructor.

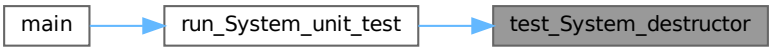
```
00022                                {
00023     std::cout « "        * Destructor tests\n";
00024     System* s1 = new SystemIMP();
00025     s1->~System();
00026 }
```

References System::~System().

Referenced by run_System_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.33.1.4 test_System_equal()

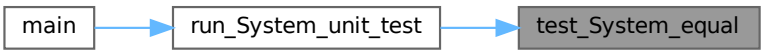
```
void test_System_equal ( )
```

This function run the unit test of the system equal comparation.

```
00079                           {
00080     std::cout « "         * Equal tests\n";
00081     SystemIMP* s1 = new SystemIMP("s1");
00082     SystemIMP* s2 = new SystemIMP("s2");
00083     assert(*s1 != *s2);
00084
00085     SystemIMP* s3 = new SystemIMP();
00086     SystemIMP* s4 = new SystemIMP();
00087     assert(*s3 == *s4);
00088
00089     delete s1;
00090     delete s2;
00091     delete s3;
00092     delete s4;
00093 }
```

Referenced by run_System_unit_test().

Here is the caller graph for this function:



5.33.1.5 test_System_getName()

```
void test_System_getName ( )
```

This function run the unit test of the system getName.

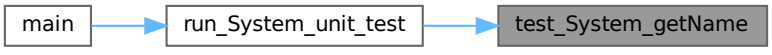
```
00028                                {
00029     std::cout « "        * getName tests\n";
00030     System* s1 = new SystemIMP();
00031     assert(s1->getName() == "NO_NAME");
00032
00033     System* s2 = new SystemIMP("s2");
00034     assert(s2->getName() == "s2");
00035
00036     delete s1;
00037     delete s2;
00038 }
```

References System::getName().

Referenced by run_System_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.33.1.6 test_System_getValue()

```
void test_System_getValue ( )
```

This function run the unit test of the system getValue.

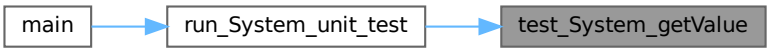
```
00040                                {
00041     std::cout « "        * getValue tests\n";
00042     System* s1 = new SystemIMP();
00043     assert(s1->getValue() == 0);
00044
00045     System* s2 = new SystemIMP("s2", 22);
00046     assert(s2->getValue() == 22);
00047
00048     delete s1;
00049     delete s2;
00050 }
```

References System::getValue().

Referenced by run_System_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.33.1.7 test_System_setName()

```
void test_System_setName ( )
```

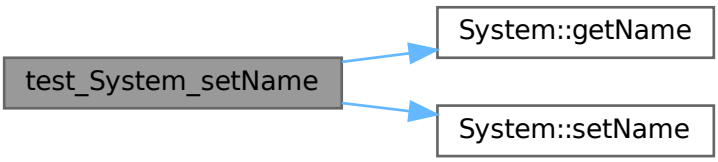
This function run the unit test of the system setName.

```
00052                                {
00053     std::cout « "        * setName tests\n";
00054     System* s1 = new SystemIMP();
00055     s1->setName("s1");
00056     assert(s1->getName() != "NO_NAME");
00057
00058     System* s2 = new SystemIMP();
00059     s2->setName("s2");
00060     assert(s2->getName() == "s2");
00061     delete s1;
00062     delete s2;
00063 }
```

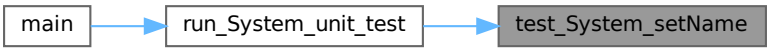
References System::getName(), and System::setName().

Referenced by run_System_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.33.1.8 test_System_setValue()

```
void test_System_setValue ( )
```

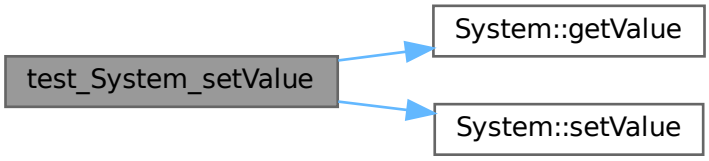
This function run the unit test of the system setValeu.

```
00065                                {
00066     std::cout « "        * setValue tests\n";
00067     System* s1 = new SystemIMP();
00068     s1->setValue(21);
00069     assert(s1->getValue() != 0);
00070
00071     System* s2 = new SystemIMP("s2", 22);
00072     s2->setValue(45);
00073     assert(s2->getValue() == 45);
00074
00075     delete s1;
00076     delete s2;
00077 }
```

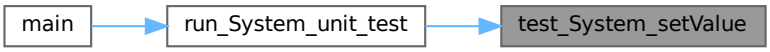
References System::getValue(), and System::setValue().

Referenced by run_System_unit_test().

Here is the call graph for this function:



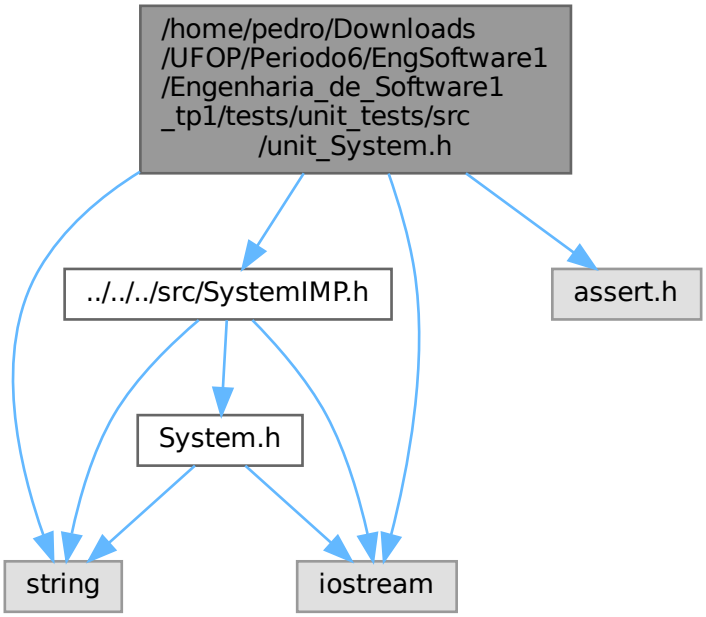
Here is the caller graph for this function:



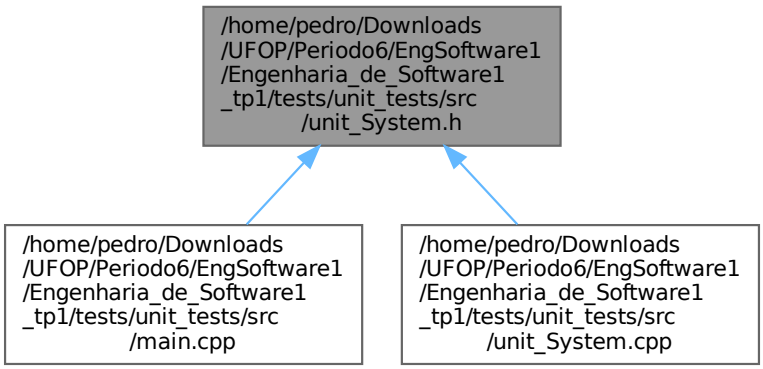
5.34 /home/pedro/Downloads/UFOP/Periodo6/EngSoftware1/↩ Engenharia_de_Software1_tp1/tests/unit_tests/src/unit_System.h File Reference

```
#include "../../../src/SystemIMP.h"
#include <iostream>
#include <assert.h>
#include <string>
```

Include dependency graph for unit_System.h:



This graph shows which files directly or indirectly include this file:



Functions

- void test_System_constructor ()

  This function run the unit test of the system constructor.
- void test_System_destructor ()

This function run the unit test of the system destructor.

- void test_System_getName ()

  This function run the unit test of the system getName.
- void test_System_getValue ()

  This function run the unit test of the system getValue.
- void test_System_setName ()

  This function run the unit test of the system setName.
- void test_System_setValue ()

  This function run the unit test of the system setValeu.
- void test_System_equal ()

  This function run the unit test of the system equal comparation.
- void run_System_unit_test ()

  This function run the unit tests of the system.

5.34.1 Function Documentation

5.34.1.1 run_System_unit_test()

```
void run_System_unit_test ( )
```

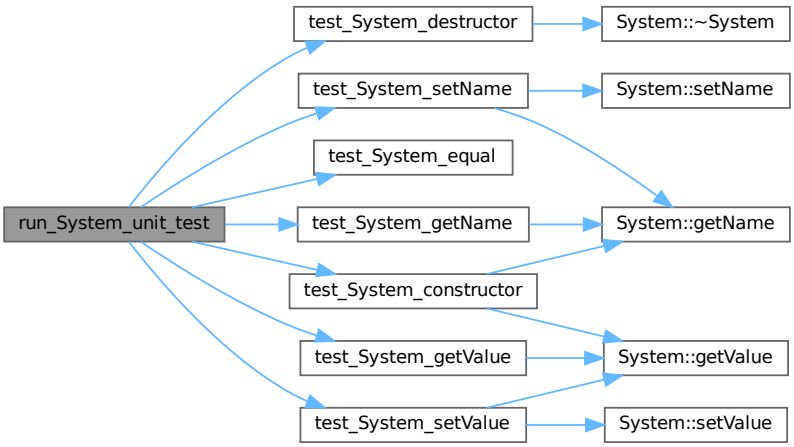
This function run the unit tests of the system.

```
00095                                {
00096     std::cout « "    Start System unit tests\n";
00097     test_System_constructor();
00098     test_System_destructor();
00099     test_System_getName();
00100     test_System_getValue();
00101     test_System_setName();
00102     test_System_setValue();
00103     test_System_equal();
00104     std::cout « "    End System unit tests\n\n";
00105 }
```

References test_System_constructor(), test_System_destructor(), test_System_equal(), test_System_getName(), test_System_getValue(), test_System_setName(), and test_System_setValue().

Referenced by main().

Here is the call graph for this function:



Here is the caller graph for this function:

5.34.1.2 test_System_constructor()

```
void test_System_constructor ( )
```

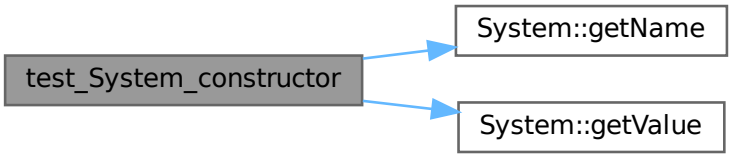
This function run the unit test of the system constructor.

```
00003                                   {
00004     std::cout « "        * Constructor tests\n";
00005     System* s1 = new SystemIMP();
00006     assert(s1->getName() == "NO_NAME");
00007     assert(s1->getValue() == 0.0);
00008
00009     System* s2 = new SystemIMP("s2");
00010     assert(s2->getName() == "s2");
00011     assert(s2->getValue() == 0.0);
00012
00013     System* s3 = new SystemIMP("s3", 2.0);
00014     assert(s3->getName() == "s3");
00015     assert(s3->getValue() == 2.0);
00016
00017     delete s1;
00018     delete s2;
00019     delete s3;
00020 }
```

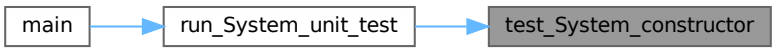
References System::getName(), and System::getValue().

Referenced by run_System_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.34.1.3 test_System_destructor()

```
void test_System_destructor ( )
```

This function run the unit test of the system destructor.

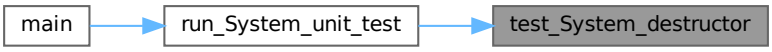
```
00022                                {
00023     std::cout « "        * Destructor tests\n";
00024     System* s1 = new SystemIMP();
00025     s1->~System();
00026 }
```

References System::~System().

Referenced by run_System_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.34.1.4 test_System_equal()

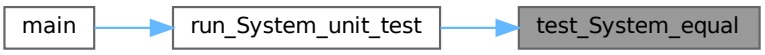
```
void test_System_equal ( )
```

This function run the unit test of the system equal comparation.

```
00079                           {
00080     std::cout « "         * Equal tests\n";
00081     SystemIMP* s1 = new SystemIMP("s1");
00082     SystemIMP* s2 = new SystemIMP("s2");
00083     assert(*s1 != *s2);
00084
00085     SystemIMP* s3 = new SystemIMP();
00086     SystemIMP* s4 = new SystemIMP();
00087     assert(*s3 == *s4);
00088
00089     delete s1;
00090     delete s2;
00091     delete s3;
00092     delete s4;
00093 }
```

Referenced by run_System_unit_test().

Here is the caller graph for this function:



5.34.1.5 test_System_getName()

```
void test_System_getName ( )
```

This function run the unit test of the system getName.

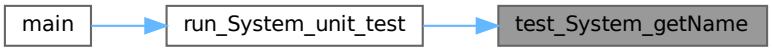
```
00028                                {
00029     std::cout « "        * getName tests\n";
00030     System* s1 = new SystemIMP();
00031     assert(s1->getName() == "NO_NAME");
00032
00033     System* s2 = new SystemIMP("s2");
00034     assert(s2->getName() == "s2");
00035
00036     delete s1;
00037     delete s2;
00038 }
```

References System::getName().

Referenced by run_System_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.34.1.6 test_System_getValue()

```
void test_System_getValue ( )
```

This function run the unit test of the system getValue.

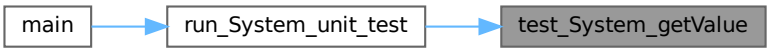
```
00040                                {
00041     std::cout « "        * getValue tests\n";
00042     System* s1 = new SystemIMP();
00043     assert(s1->getValue() == 0);
00044
00045     System* s2 = new SystemIMP("s2", 22);
00046     assert(s2->getValue() == 22);
00047
00048     delete s1;
00049     delete s2;
00050 }
```

References System::getValue().

Referenced by run_System_unit_test().

Here is the call graph for this function:

Here is the caller graph for this function:



5.34.1.7 test_System_setName()

```
void test_System_setName ( )
```

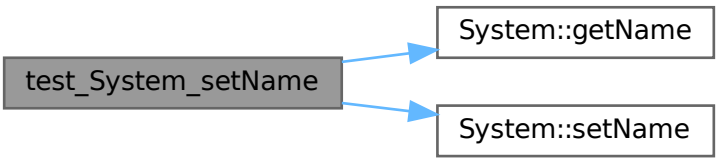
This function run the unit test of the system setName.

```
00052                                {
00053     std::cout « "        * setName tests\n";
00054     System* s1 = new SystemIMP();
00055     s1->setName("s1");
00056     assert(s1->getName() != "NO_NAME");
00057
00058     System* s2 = new SystemIMP();
00059     s2->setName("s2");
00060     assert(s2->getName() == "s2");
00061     delete s1;
00062     delete s2;
00063 }
```

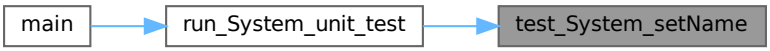
References System::getName(), and System::setName().

Referenced by run_System_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.34.1.8 test_System_setValue()

```
void test_System_setValue ( )
```

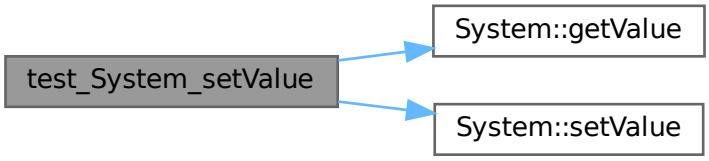
This function run the unit test of the system setValeu.

```
00065                                {
00066     std::cout « "        * setValue tests\n";
00067     System* s1 = new SystemIMP();
00068     s1->setValue(21);
00069     assert(s1->getValue() != 0);
00070
00071     System* s2 = new SystemIMP("s2", 22);
00072     s2->setValue(45);
00073     assert(s2->getValue() == 45);
00074
00075     delete s1;
00076     delete s2;
00077 }
```

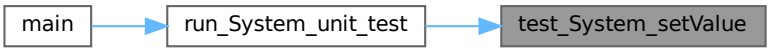
References System::getValue(), and System::setValue().

Referenced by run_System_unit_test().

Here is the call graph for this function:



Here is the caller graph for this function:



5.35 unit_System.h

Go to the documentation of this file.

```
00001 /*************************************************************
00002  * @file unit_Syste,.h
00003  * @author Pedro Augusto Sousa Gonçalves
00004  * @brief This file represents the system units tests
00005 *************************************************************/
00006
00007 #ifndef UNIT_SYSTEM_H
00008 #define UNIT_SYSTEM_H
00009
00010 #include "../../../src/SystemIMP.h"
00011
00012 #include <iostream>
00013 #include <assert.h>
00014 #include <string>
00015
00019 void test_System_constructor();
00023 void test_System_destructor();
00027 void test_System_getName();
00031 void test_System_getValue();
00035 void test_System_setName();
00039 void test_System_setValue();
00043 void test_System_equal();
00047 void run_System_unit_test();
00048
00049 #endif
```