MyVensim

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

- Flow 7
  - FlowExponential 13
  - FlowLogistical 15
- Model 18
- System 24

Chapter 2

Class Index

2.1 Class List

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

Flow 7
FlowExponential 13
FlowLogistical 15
Model 18
System 24

Chapter 3

File Index

3.1 File List

Here is a list of all files with brief descriptions:

src/flow.cpp 31
src/flow.h 31
src/main.cpp 33
src/model.cpp 34
src/model.h 35
src/system.cpp 38
src/system.h 38
test/funcional/flowExponential.cpp 40
test/funcional/flowExponential.h 41
test/funcional/flowLogistical.cpp 42
test/funcional/flowLogistical.h 43
test/funcional/funcional_tests.cpp 44
test/funcional/funcional_tests.h 47
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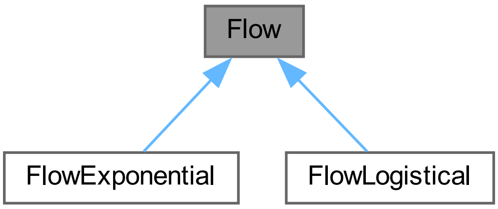
Chapter 4

Class Documentation

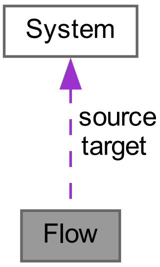
4.1 Flow Class Reference

```
#include <flow.h>
```

Inheritance diagram for Flow:



Collaboration diagram for Flow:



Public Member Functions

- Flow ()
- Flow (Flow &obj)
- Flow (const string name, System ∗source, System ∗target)
- virtual ∼Flow ()
- string getName () const
- void setName (const string name)
- System ∗ getSource () const
- void setSource (System ∗source)
- System ∗ getTarget () const
- void setTarget (System ∗target)
- bool operator== (const Flow &obj) const
- bool operator!= (const Flow &obj) const
- Flow & operator= (const Flow &obj)
- virtual float execute ()=0

Protected Attributes

- string name
- System ∗ source
- System ∗ target

4.1.1 Constructor & Destructor Documentation

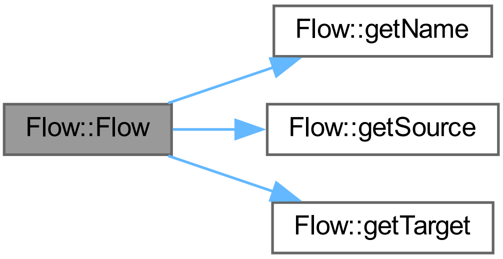
4.1.1.1 Flow() [1/3]

```
Flow::Flow ( )
```

4.1.1.2 Flow() [2/3]

```
Flow::Flow (
            Flow & obj )
```

Here is the call graph for this function:



4.1.1.3 Flow() [3/3]

```
Flow::Flow (
              const string name,
              System * source,
              System * target )
```

4.1.1.4 ∼Flow()

```
Flow::∼Flow ( )  [virtual]
```

4.1.2 Member Function Documentation

4.1.2.1 execute()

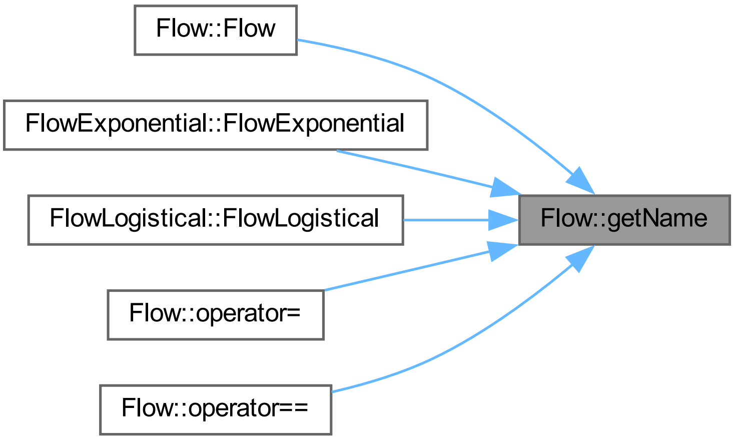
```
virtual float Flow::execute ( )  [pure virtual]
```

Implemented in FlowExponential, and FlowLogistical.

4.1.2.2 getName()

```
string Flow::getName ( ) const
```

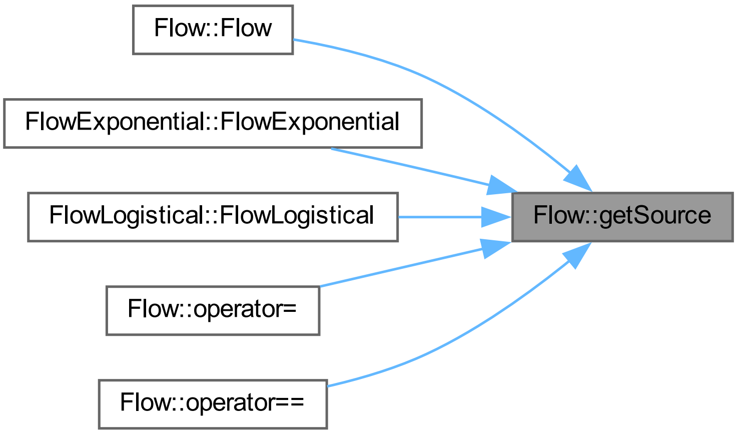
Here is the caller graph for this function:


Flow::Flow
FlowExponential::FlowExponential
FlowLogistical::FlowLogistical
Flow::operator=
Flow::operator==
Flow::getName

4.1.2.3 getSource()

```
System * Flow::getSource ( ) const
```

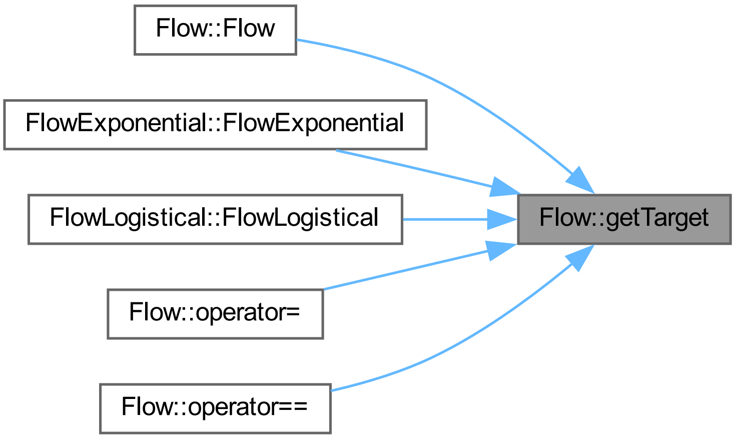
Here is the caller graph for this function:


Flow::Flow
FlowExponential::FlowExponential
FlowLogistical::FlowLogistical
Flow::operator=
Flow::operator==
Flow::getSource

4.1.2.4 getTarget()

```
System * Flow::getTarget ( ) const
```

Here is the caller graph for this function:


Flow::Flow
FlowExponential::FlowExponential
FlowLogistical::FlowLogistical
Flow::operator=
Flow::operator==
Flow::getTarget

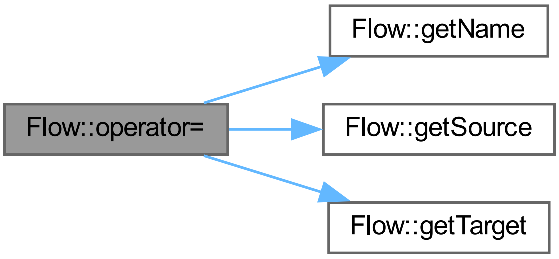
4.1.2.5 operator"!=()

```
bool Flow::operator!= (
             const Flow & obj ) const
```

4.1.2.6 operator=()

```
Flow & Flow::operator= (
             const Flow & obj )
```

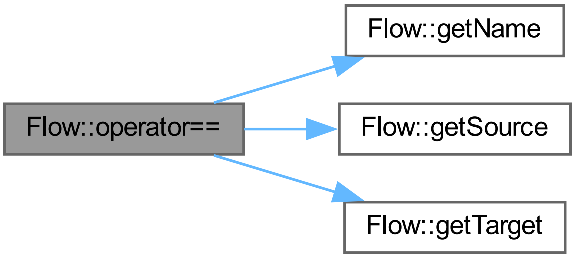
Here is the call graph for this function:



4.1.2.7 operator==()

```
bool Flow::operator== (
             const Flow & obj ) const
```

Here is the call graph for this function:



4.1.2.8 setName()

```
void Flow::setName (
             const string name )
```

4.1.2.9 setSource()

```
void Flow::setSource (
             System * source )
```

4.1.2.10 setTarget()

```
void Flow::setTarget (
             System * target )
```

4.1.3 Member Data Documentation

4.1.3.1 name

```
string Flow::name [protected]
```

4.1.3.2 source

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

4.1.3.3 target

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

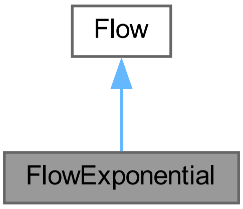
The documentation for this class was generated from the following files:

- src/flow.h
- src/flow.cpp

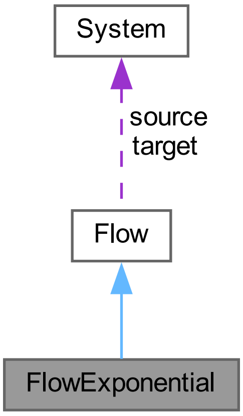
4.2 FlowExponential Class Reference

```
#include <flowExponential.h>
```

Inheritance diagram for FlowExponential:



Collaboration diagram for FlowExponential:



Public Member Functions

- FlowExponential ()
- FlowExponential (Flow &obj)
- FlowExponential (const string name, System ∗source, System ∗target)
- virtual ∼FlowExponential ()
- virtual float execute ()

Public Member Functions inherited from Flow

- Flow ()
- Flow (Flow &obj)
- Flow (const string name, System ∗source, System ∗target)
- virtual ∼Flow ()
- string getName () const
- void setName (const string name)
- System ∗ getSource () const
- void setSource (System ∗source)
- System ∗ getTarget () const
- void setTarget (System ∗target)
- bool operator== (const Flow &obj) const
- bool operator!= (const Flow &obj) const
- Flow & operator= (const Flow &obj)
- virtual float execute ()=0

Additional Inherited Members

Protected Attributes inherited from Flow

- string name
- System ∗ source
- System ∗ target

4.2.1 Constructor & Destructor Documentation

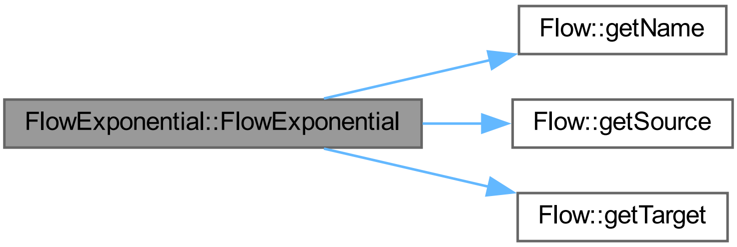
4.2.1.1 FlowExponential() [1/3]

```
FlowExponential::FlowExponential ( )
```

4.2.1.2 FlowExponential() [2/3]

```
FlowExponential::FlowExponential (
             Flow & obj )
```

Here is the call graph for this function:



4.2.1.3 FlowExponential() [3/3]

```
FlowExponential::FlowExponential (
            const string name,
            System * source,
            System * target )
```

4.2.1.4 ∼FlowExponential()

```
FlowExponential::∼FlowExponential ( ) [virtual]
```

4.2.2 Member Function Documentation

4.2.2.1 execute()

```
float FlowExponential::execute ( ) [virtual]
```

Implements Flow.

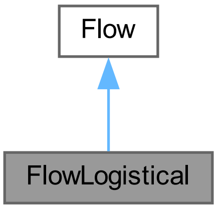
The documentation for this class was generated from the following files:

- test/funcional/flowExponential.h
- test/funcional/flowExponential.cpp

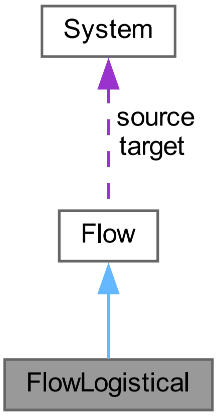
4.3 FlowLogistical Class Reference

```
#include <flowLogistical.h>
```

Inheritance diagram for FlowLogistical:



Collaboration diagram for FlowLogistical:



Public Member Functions

- FlowLogistical ()
- FlowLogistical (Flow &obj)
- FlowLogistical (const string name, System ∗source, System ∗target)
- virtual ∼FlowLogistical ()
- virtual float execute ()

Public Member Functions inherited from Flow

- Flow ()
- Flow (Flow &obj)
- Flow (const string name, System ∗source, System ∗target)
- virtual ∼Flow ()
- string getName () const
- void setName (const string name)
- System ∗ getSource () const
- void setSource (System ∗source)
- System ∗ getTarget () const
- void setTarget (System ∗target)
- bool operator== (const Flow &obj) const
- bool operator!= (const Flow &obj) const
- Flow & operator= (const Flow &obj)
- virtual float execute ()=0

Additional Inherited Members

Protected Attributes inherited from Flow

- string name
- System ∗ source
- System ∗ target

4.3.1 Constructor & Destructor Documentation

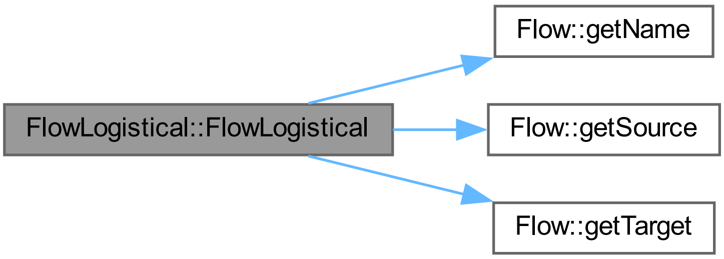
4.3.1.1 FlowLogistical() [1/3]

```
FlowLogistical::FlowLogistical ( )
```

4.3.1.2 FlowLogistical() [2/3]

```
FlowLogistical::FlowLogistical (
              Flow & obj )
```

Here is the call graph for this function:



4.3.1.3 FlowLogistical() [3/3]

```
FlowLogistical::FlowLogistical (
              const string name,
              System * source,
              System * target )
```

4.3.1.4 ∼FlowLogistical()

```
FlowLogistical::∼FlowLogistical ( ) [virtual]
```

4.3.2 Member Function Documentation

4.3.2.1 execute()

```
float FlowLogistical::execute ( )  [virtual]
```

Implements Flow.

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

- test/funcional/flowLogistical.h
- test/funcional/flowLogistical.cpp

4.4 Model Class Reference

```
#include <model.h>
```

Public Types

- typedef vector< Flow ∗ >::iterator itFlow
- typedef vector< System ∗ >::iterator itSystem

Public Member Functions

- Model ()
- Model (const string name)
- Model (const string name, vector< Flow ∗ > &flows, vector< System ∗ > &systems)
- virtual ∼Model ()
- string getName () const
- void setName (const string name)
- itFlow getFlowBegin ()
- itFlow getFlowEnd ()
- int getFlowSize ()
- itSystem getSystemBegin ()
- itSystem getSystemEnd ()
- int getSystemSize ()
- void add (System ∗)
- void add (Flow ∗)
- bool remove (System ∗)
- bool remove (Flow ∗)
- void clear ()
- void show ()
- void run (int, int, int)

Protected Attributes

- string name
- vector< Flow ∗ > flows
- vector< System ∗ > systems

4.4.1 Member Typedef Documentation

4.4.1.1 itFlow

```
typedef vector<Flow*>::iterator Model::itFlow
```

4.4.1.2 itSystem

```
typedef vector<System*>::iterator Model::itSystem
```

4.4.2 Constructor & Destructor Documentation

4.4.2.1 Model() [1/3]

```
Model::Model ( )
```

4.4.2.2 Model() [2/3]

```
Model::Model (
             const string name )
```

4.4.2.3 Model() [3/3]

```
Model::Model (
             const string name,
             vector< Flow * > & flows,
             vector< System * > & systems )
```

4.4.2.4 ∼Model()

```
Model::∼Model ( )  [virtual]
```

4.4.3 Member Function Documentation

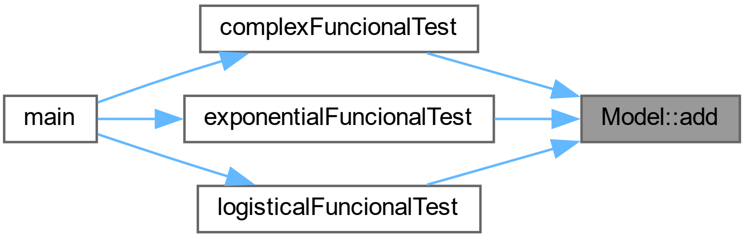
4.4.3.1 add() [1/2]

```
void Model::add (
            Flow * flow )
```

4.4.3.2 add() [2/2]

```
void Model::add (
            System * subSystem )
```

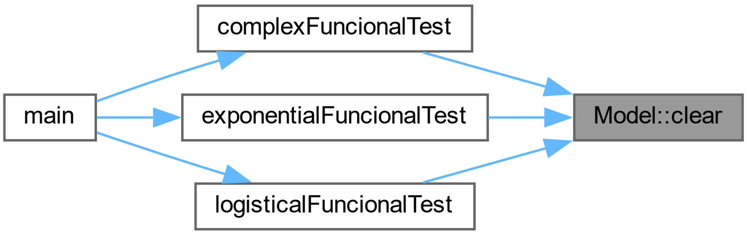
Here is the caller graph for this function:



4.4.3.3 clear()

```
void Model::clear ( )
```

Here is the caller graph for this function:



4.4.3.4 getFlowBegin()

```
Model::itFlow Model::getFlowBegin ( )
```

4.4.3.5 getFlowEnd()

```
Model::itFlow Model::getFlowEnd ( )
```

4.4.3.6 getFlowSize()

```
int Model::getFlowSize ( )
```

4.4.3.7 getName()

```
string Model::getName ( ) const
```

4.4.3.8 getSystemBegin()

```
Model::itSystem Model::getSystemBegin ( )
```

4.4.3.9 getSystemEnd()

```
Model::itSystem Model::getSystemEnd ( )
```

4.4.3.10 getSystemSize()

```
int Model::getSystemSize ( )
```

4.4.3.11 remove() [1/2]

```
bool Model::remove (
             Flow * obj )
```

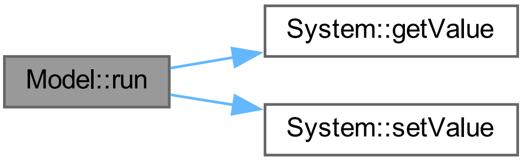
4.4.3.12 remove() [2/2]

```
bool Model::remove (
             System * obj )
```

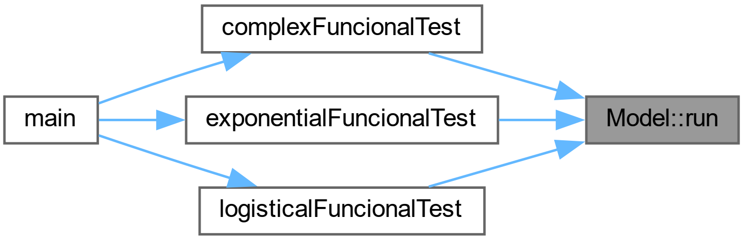
4.4.3.13 run()

```
void Model::run (
             int start,
             int finish,
             int increment )
```

Here is the call graph for this function:



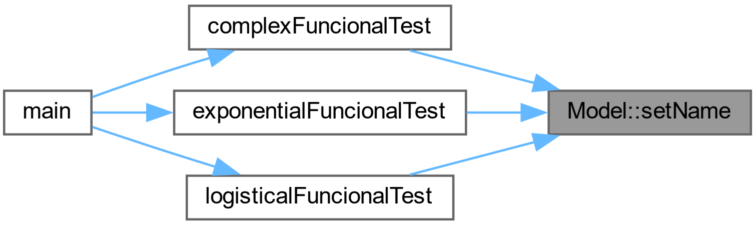
Here is the caller graph for this function:



4.4.3.14 setName()

```
void Model::setName (
             const string name )
```

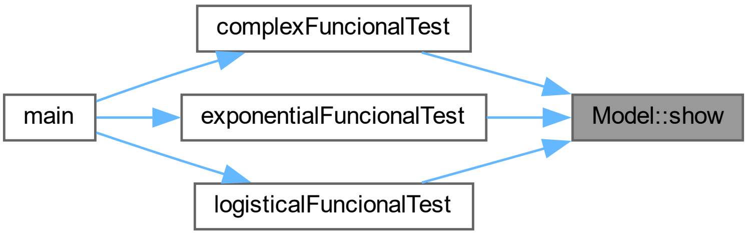
Here is the caller graph for this function:



4.4.3.15 show()

```
void Model::show ( )
```

Here is the caller graph for this function:



4.4.4 Member Data Documentation

4.4.4.1 flows

```
vector<Flow*> Model::flows  [protected]
```

4.4.4.2 name

```
string Model::name  [protected]
```

4.4.4.3 systems

```
vector<System*> Model::systems  [protected]
```

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

- src/model.h
- src/model.cpp

4.5 System Class Reference

```
#include <system.h>
```

Public Member Functions

- System ()
- System (const string name)
- System (float value)
- System (System &obj)
- System (const string name, float value)
- virtual ∼System ()
- string getName () const
- void setName (const string name)
- float getValue () const
- void setValue (float value)
- System & operator= (const System &obj)

Protected Attributes

- string name
- float value

4.5.1 Constructor & Destructor Documentation

4.5.1.1 System() [1/5]

```
System::System ( )
```

4.5.1.2 System() [2/5]

```
System::System (
            const string name )
```

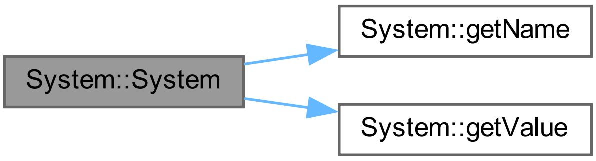
4.5.1.3 System() [3/5]

```
System::System (
            float value )
```

4.5.1.4 System() [4/5]

```
System::System (
            System & obj )
```

Here is the call graph for this function:



4.5.1.5 System() [5/5]

```
System::System (
            const string name,
            float value )
```

4.5.1.6 ∼System()

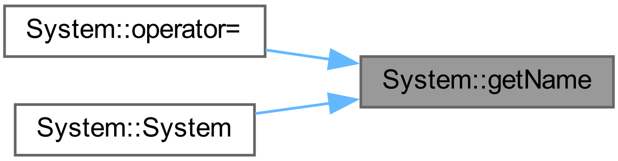
```
System::∼System ( )  [virtual]
```

4.5.2 Member Function Documentation

4.5.2.1 getName()

```
string System::getName ( ) const
```

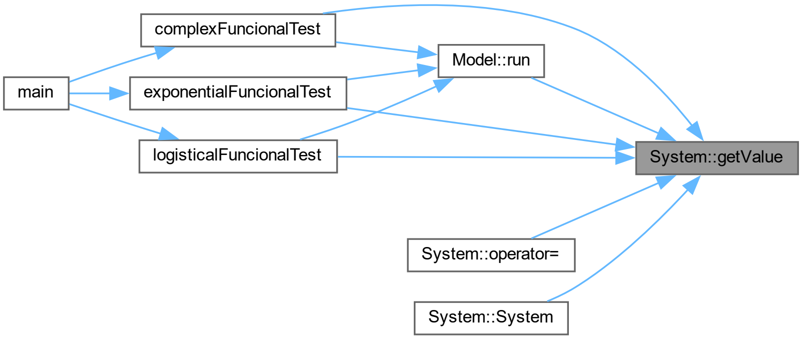
Here is the caller graph for this function:



4.5.2.2 getValue()

```
float System::getValue ( ) const
```

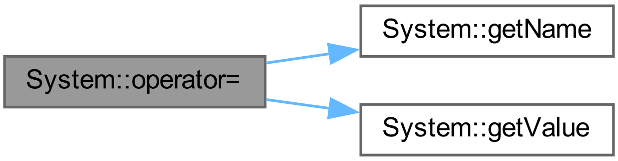
Here is the caller graph for this function:



4.5.2.3 operator=()

```
System & System::operator= (
             const System & obj )
```

Here is the call graph for this function:



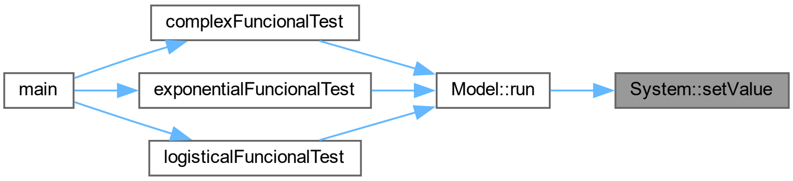
4.5.2.4 setName()

```
void System::setName (
             const string name )
```

4.5.2.5 setValue()

```
void System::setValue (
             float value )
```

Here is the caller graph for this function:



4.5.3 Member Data Documentation

4.5.3.1 name

```
string System::name  [protected]
```

4.5.3.2 value

```
float System::value  [protected]
```

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

- src/system.h
- src/system.cpp

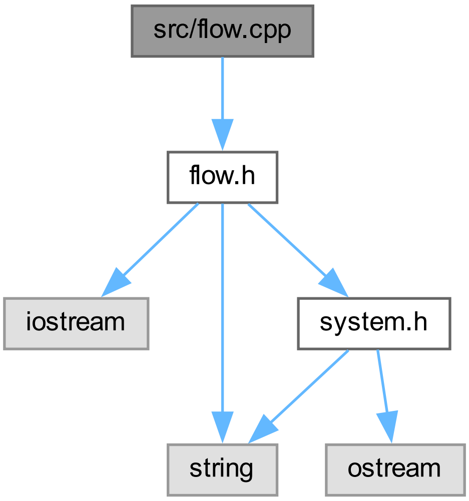
Chapter 5

File Documentation

5.1 src/flow.cpp File Reference

```
#include "flow.h"
```

Include dependency graph for flow.cpp:

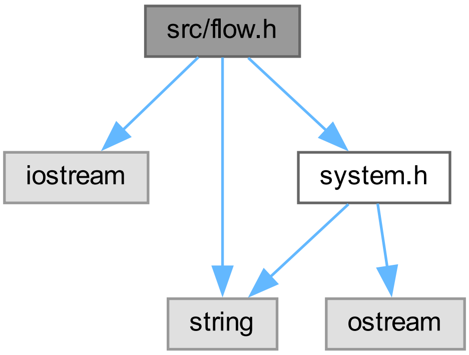


5.2 src/flow.h File Reference

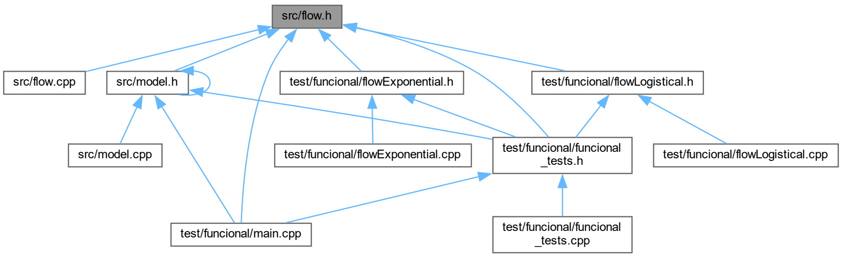
```
#include <iostream>
#include <string>
```

```
#include "system.h"
```

Include dependency graph for flow.h:



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



Classes

- class Flow

5.3 flow.h

Go to the documentation of this file.

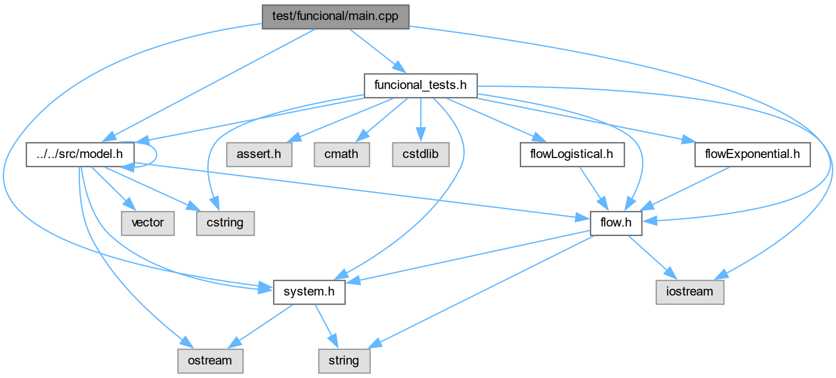
```
#ifndef FLOW_H
#define FLOW_H

#include <iostream>
#include <string>
#include "system.h"

class Flow {
    protected:
        string name;
        System *source;
        System *target;
    public:
        Flow();
        Flow(Flow &obj);
        Flow(const string name, System *source, System *target);
        virtual ~Flow();

        string getName() const;
        void setName(const string name);
        System *getSource() const;
        void setSource(System *source);
        System *getTarget() const;
        void setTarget(System *target);

        bool operator==(const Flow &obj) const;
        bool operator!=(const Flow &obj) const;
        Flow &operator= (const Flow &obj);

        virtual float execute() = 0;
};

#endif
```

5.4 src/main.cpp File Reference

5.5 test/funcional/main.cpp File Reference

```
#include "funcional_tests.h"
#include "..\..\src\model.h"
#include "..\..\src\system.h"
#include "..\..\src\flow.h"
```

Include dependency graph for main.cpp:



Macros

- #define MAIN_FUNCIONAL_TESTS

Functions

- int main ()

5.5.1 Macro Definition Documentation

5.5.1.1 MAIN_FUNCIONAL_TESTS

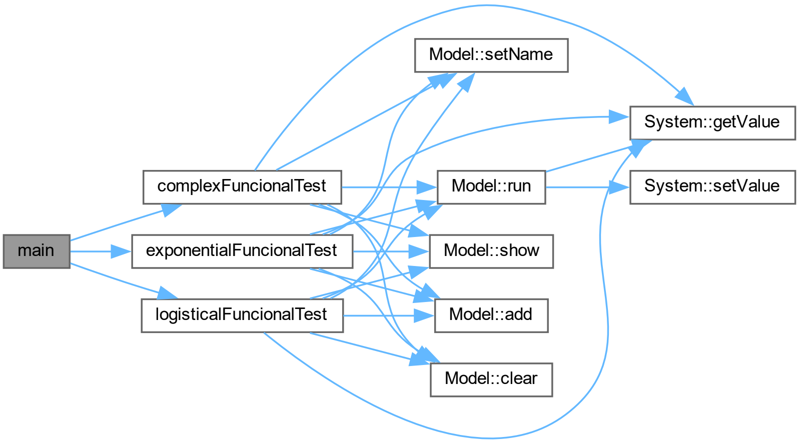
```
#define MAIN_FUNCIONAL_TESTS
```

5.5.2 Function Documentation

5.5.2.1 main()

```
int main ( )
```

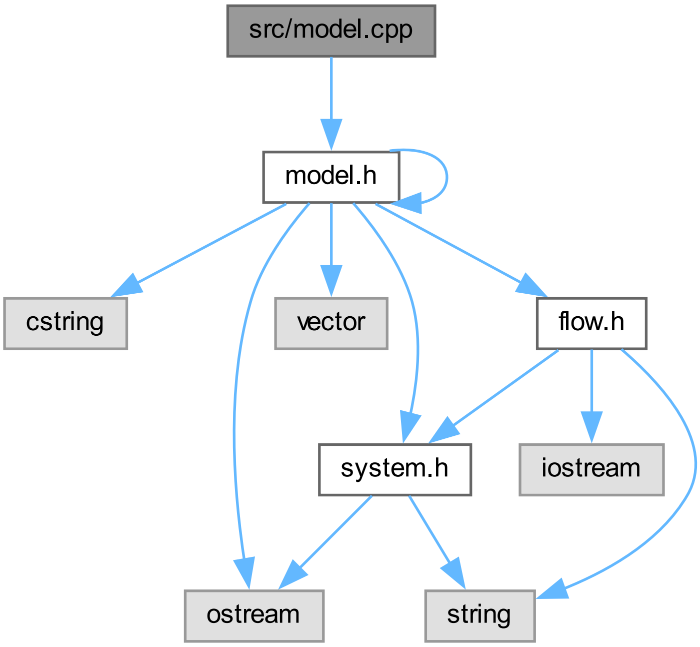
Here is the call graph for this function:



5.6 src/model.cpp File Reference

```
#include "model.h"
```

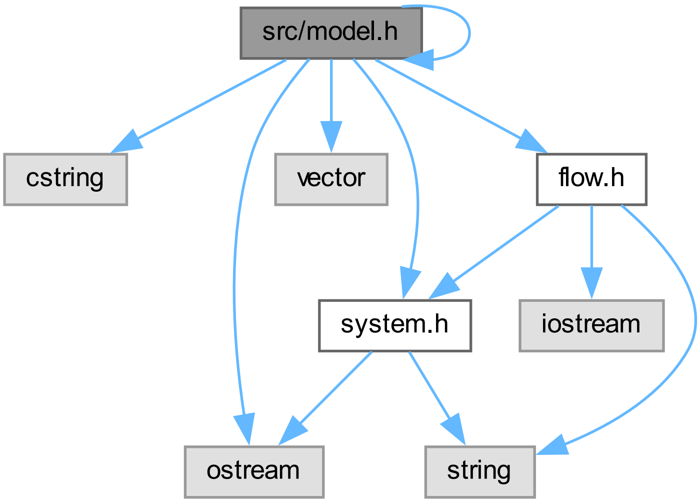
Include dependency graph for model.cpp:



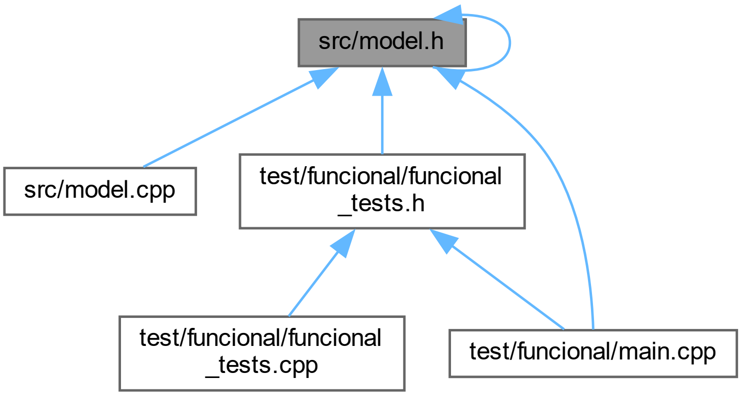
5.7 src/model.h File Reference

```
#include <cstring>
#include <ostream>
#include <vector>
#include "flow.h"
#include "system.h"
#include "model.h"
```

Include dependency graph for model.h:



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



Classes

- class Model

5.8 model.h

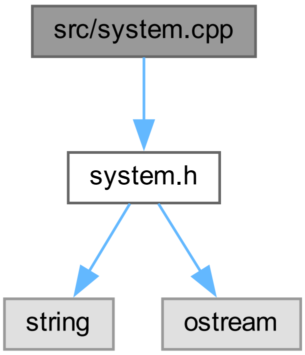
Go to the documentation of this file.

```
#ifndef MODEL_H
#define MODEL_H
#include <cstring>
#include <ostream>
#include <vector>
#include "flow.h"
//#include "flowExponential.h"
//#include "flowLogistic.h"
#include "system.h"
#include "model.h"

class Model {
    protected:
        string name;
        vector<Flow*> flows;
        vector<System*> systems;

    private:
        Model(Model& obj);
        Model& operator= (const Model& obj);

    public:
        Model();
        Model(const string name);
        Model(const string name, vector<Flow*> &flows, vector<System*> &systems);
        virtual ~Model();

        typedef typename vector<Flow*> :: iterator itFlow;
        typedef typename vector<System*> :: iterator itSystem;

        string getName() const;
        void setName(const string name);

        itFlow getFlowBegin();
        itFlow getFlowEnd();
        int getFlowSize();

        itSystem getSystemBegin();
        itSystem getSystemEnd();
        int getSystemSize();

        void add(System*);
        void add(Flow*);
        bool remove(System*);
        bool remove(Flow*);
        void clear();
        void show();
        void run(int, int, int);
};

#endif
```

5.9 src/system.cpp File Reference

```
#include "system.h"
```

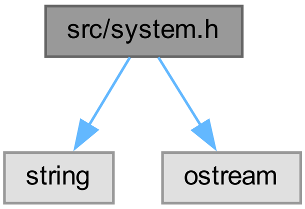
Include dependency graph for system.cpp:



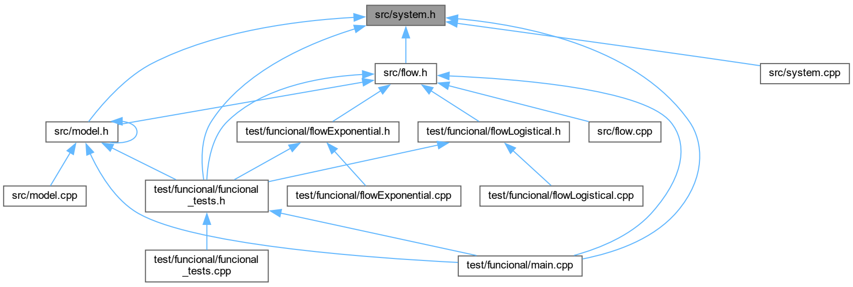
5.10 src/system.h File Reference

```
#include <string>
#include <ostream>
```

Include dependency graph for system.h:



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


src/system.h
src/flow.h
src/system.cpp
src/model.h
test/funcional/flowExponential.h
test/funcional/flowLogistical.h
src/flow.cpp
src/model.cpp
test/funcional/funcional_tests.h
test/funcional/flowExponential.cpp
test/funcional/flowLogistical.cpp
test/funcional/funcional_tests.cpp
test/funcional/main.cpp

Classes

- class System

5.11 system.h

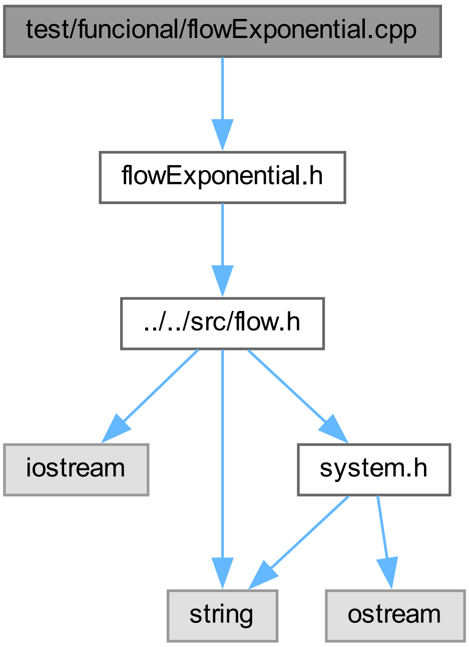
Go to the documentation of this file.

```
#ifndef SYSTEM_H
#define SYSTEM_H

#include <string>
#include <ostream>

using namespace std;

class System {
    protected:
        string name;
        float value;

    public:
        System();
        System(const string name);
        System(float value);
        System(System& obj);
        System(const string name, float value);
        virtual ~System();

        string getName() const;
        void setName(const string name);
        float getValue() const;
        void setValue(float value);

        System& operator= (const System& obj);
};

#endif
```

5.12 test/funcional/flowExponential.cpp File Reference

```
#include "flowExponential.h"
```

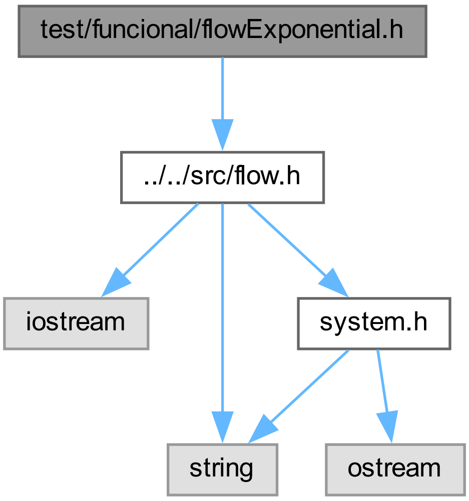
Include dependency graph for flowExponential.cpp:



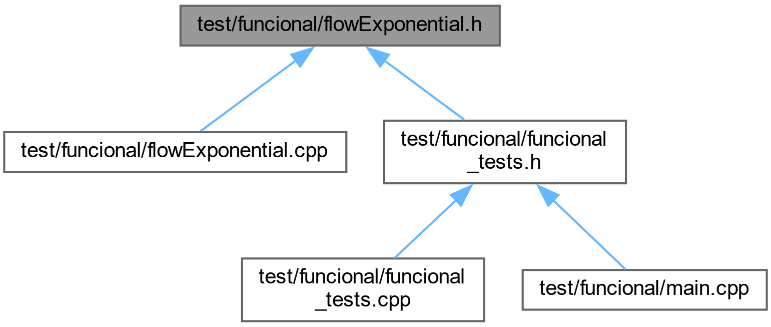
5.13 test/funcional/flowExponential.h File Reference

```
#include "../../src/flow.h"
```

Include dependency graph for flowExponential.h:



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



Classes

- class FlowExponential

5.14 flowExponential.h

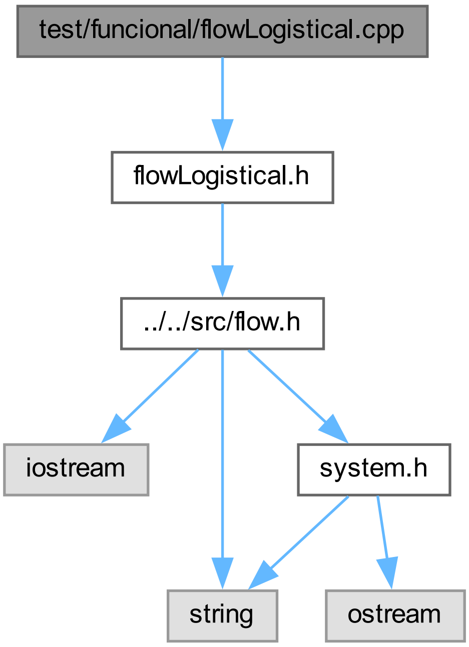
Go to the documentation of this file.

```
#ifndef FLOWEXPONENTIAL_H
#define FLOWEXPONENTIAL_H

#include "../../src/flow.h"

class FlowExponential : public Flow {
    public:
        FlowExponential();
        FlowExponential(Flow &obj);
        FlowExponential(const string name, System *source, System *target);
        virtual ~FlowExponential();

        virtual float execute();
};

#endif
```

5.15 test/funcional/flowLogistical.cpp File Reference

```
#include "flowLogistical.h"
```

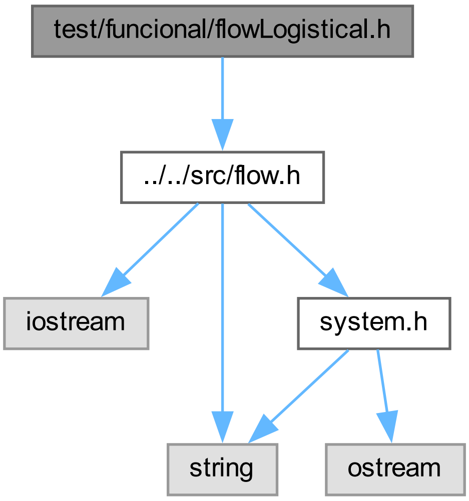
Include dependency graph for flowLogistical.cpp:



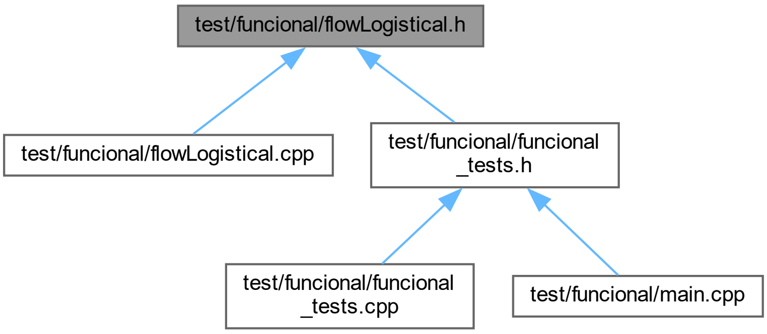
5.16 test/funcional/flowLogistical.h File Reference

```
#include "../../src/flow.h"
```

Include dependency graph for flowLogistical.h:



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


test/funcional/flowLogistical.h
test/funcional/flowLogistical.cpp
test/funcional/funcional _tests.h
test/funcional/funcional _tests.cpp
test/funcional/main.cpp

Classes

- class FlowLogistical

Macros

- #define FLOWLOGISTIC_H

5.16.1 Macro Definition Documentation

5.16.1.1 FLOWLOGISTIC_H

```
#define FLOWLOGISTIC_H
```

5.17 flowLogistical.h

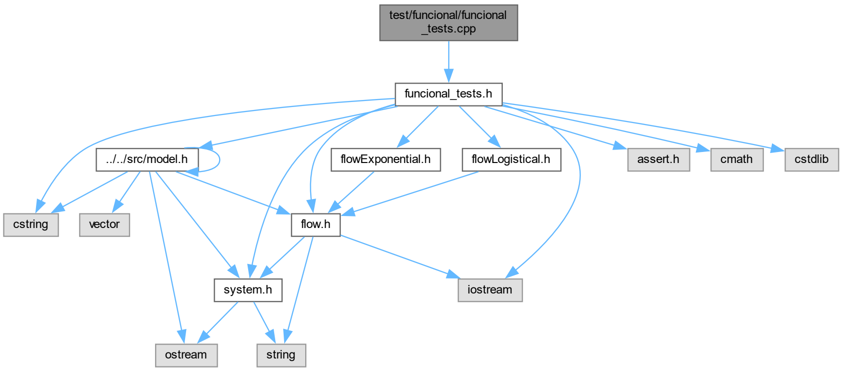
Go to the documentation of this file.

```
#ifndef FLOWLOGISTICAL_H
#define FLOWLOGISTIC_H

#include "../../src/flow.h"

class FlowLogistical : public Flow {
public:
    FlowLogistical();
    FlowLogistical(Flow &obj);
    FlowLogistical(const string name, System *source, System *target);
    virtual ~FlowLogistical();

    virtual float execute();
};

#endif
```

5.18 test/funcional/funcional_tests.cpp File Reference

```
#include "funcional_tests.h"
```

Include dependency graph for funcional_tests.cpp:



Functions

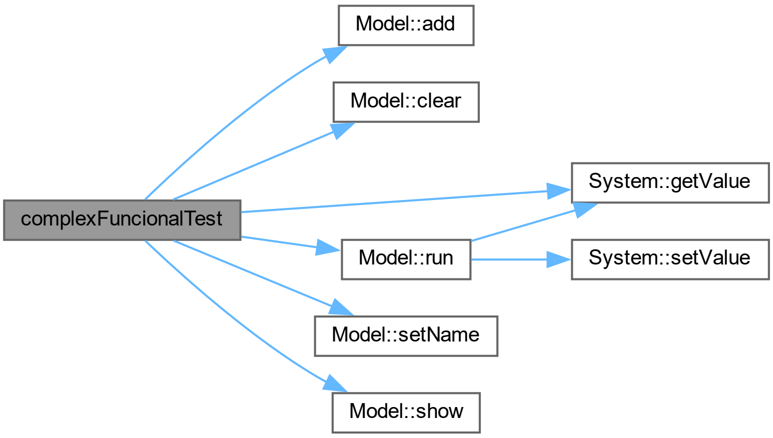
- void exponentialFuncionalTest ()
- void logisticalFuncionalTest ()
- void complexFuncionalTest ()

5.18.1 Function Documentation

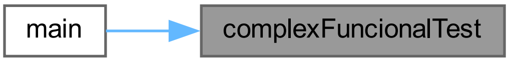
5.18.1.1 complexFuncionalTest()

```
void complexFuncionalTest ( )
```

Here is the call graph for this function:



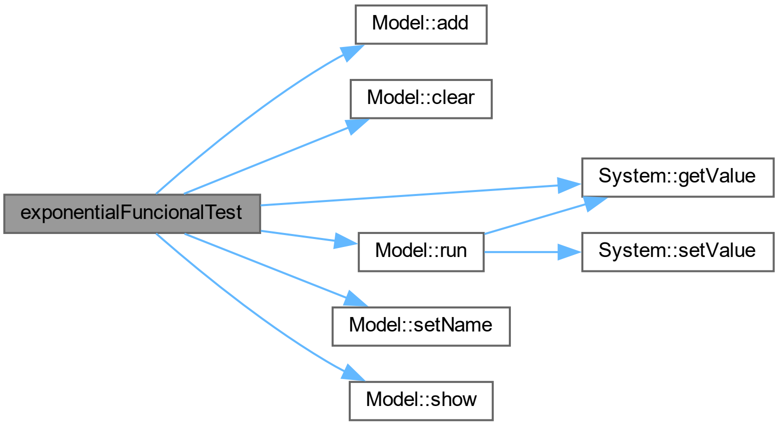
Here is the caller graph for this function:



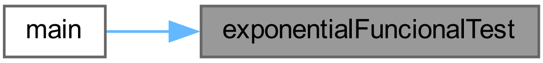
5.18.1.2 exponentialFuncionalTest()

```
void exponentialFuncionalTest ( )
```

Here is the call graph for this function:



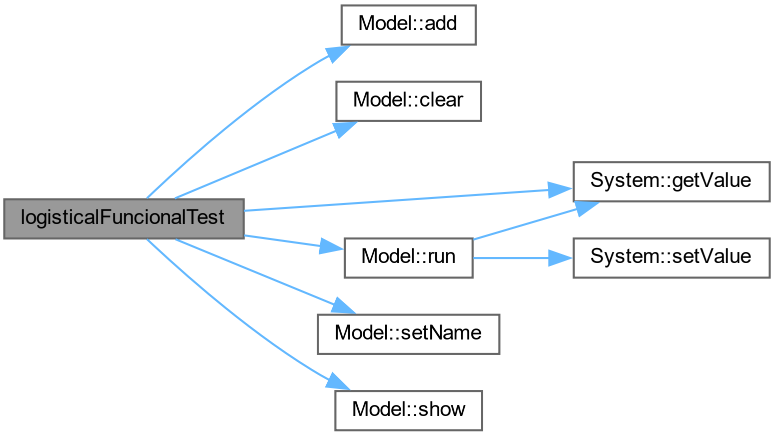
Here is the caller graph for this function:



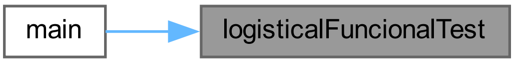
5.18.1.3 logisticalFuncionalTest()

```
void logisticalFuncionalTest ( )
```

Here is the call graph for this function:



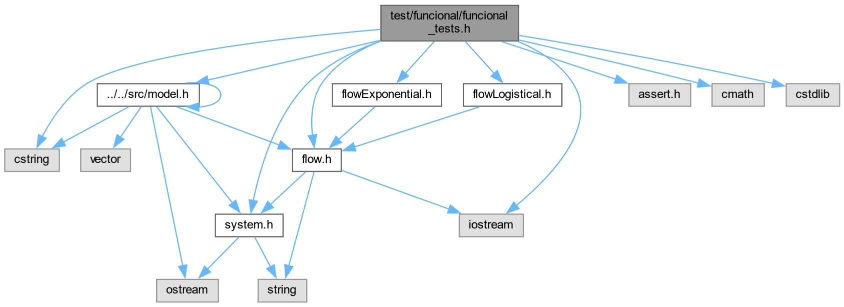
Here is the caller graph for this function:



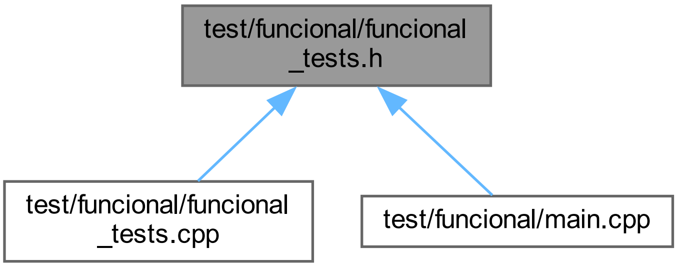
5.19 test/funcional/funcional_tests.h File Reference

```
#include "../../src/model.h"
#include "../../src/system.h"
#include "../../src/flow.h"
#include "flowExponential.h"
#include "flowLogistical.h"
#include <assert.h>
#include <cmath>
#include <iostream>
#include <cstdlib>
#include <cstring>
```

Include dependency graph for funcional_tests.h:



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



Functions

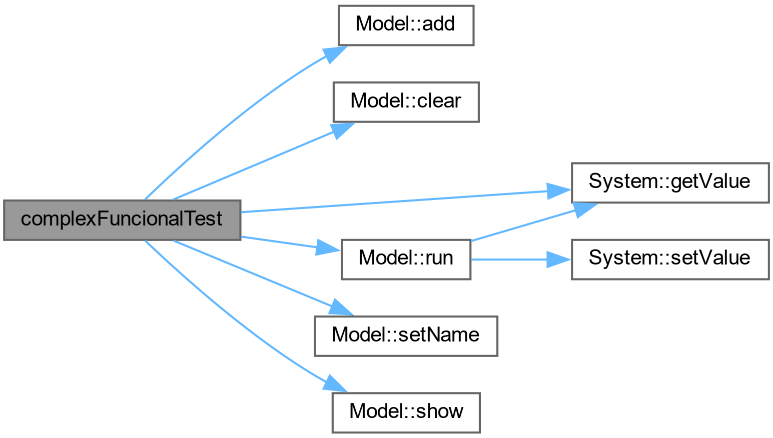
- void exponentialFuncionalTest ()
- void logisticalFuncionalTest ()
- void complexFuncionalTest ()

5.19.1 Function Documentation

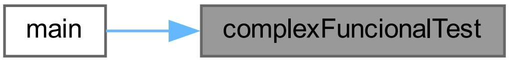
5.19.1.1 complexFuncionalTest()

```
void complexFuncionalTest ( )
```

Here is the call graph for this function:



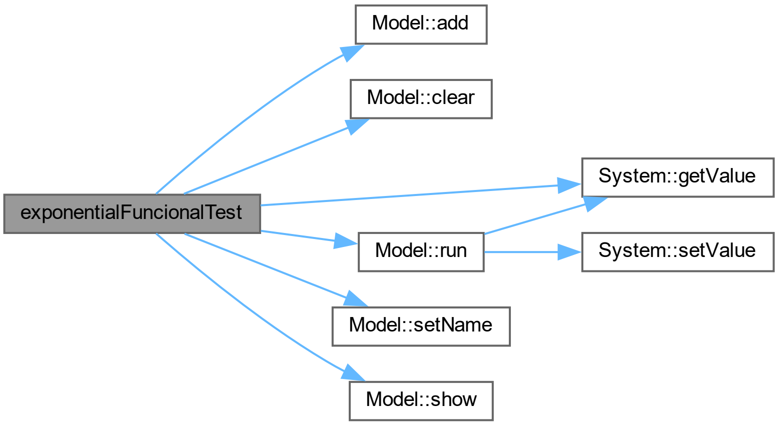
Here is the caller graph for this function:



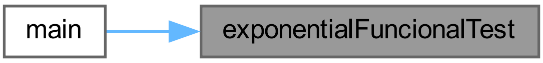
5.19.1.2 exponentialFuncionalTest()

```
void exponentialFuncionalTest ( )
```

Here is the call graph for this function:



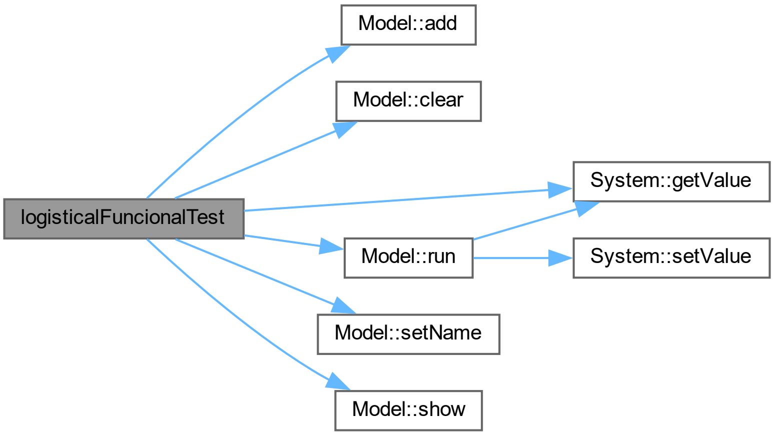
Here is the caller graph for this function:



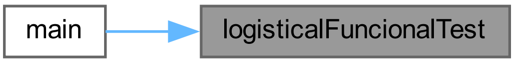
5.19.1.3 logisticalFuncionalTest()

```
void logisticalFuncionalTest ( )
```

Here is the call graph for this function:



Here is the caller graph for this function:



5.20 funcional_tests.h

Go to the documentation of this file.

```
#include "../../src/model.h"
#include "../../src/system.h"
#include "../../src/flow.h"
#include "flowExponential.h"
#include "flowLogistical.h"

#include <assert.h>
#include <cmath>
#include <iostream>
#include <cstdlib>
#include <cstring>

#ifndef FUNCIONAL_TESTS
#define FUNCIONAL_TESTS

void exponentialFuncionalTest();
void logisticalFuncionalTest();
void complexFuncionalTest();

#endif
```

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