

TOY API

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Contents

1	Namespace Index	1
1.1	Namespace List	1
2	Class Index	3
2.1	Class List	3
3	File Index	5
3.1	File List	5
4	Namespace Documentation	7
4.1	LONG Namespace Reference	7
4.1.1	Detailed Description	7
4.2	MARIO Namespace Reference	7
4.2.1	Detailed Description	7
4.3	NB Namespace Reference	7
4.3.1	Detailed Description	8
4.3.2	Function Documentation	8
4.3.2.1	evolution(Particle *_particle, const Int _n, const PertParticle *_perturber, const PertForce *_pert_force, const Float _time_start, const Float _time_end, Float ↔ _time_real, Parameter &_ext_pars)	8

5	Class Documentation	9
5.1	LONG::Collision Class Reference	9
5.1.1	Detailed Description	9
5.1.2	Member Function Documentation	9
5.1.2.1	call(const double _r12)	9
5.2	MARIO::Nbody Class Reference	10
5.2.1	Member Function Documentation	10
5.2.1.1	evolution(const double _time_end, double &_time_real)	10
5.3	NB::Nbody Class Reference	10
5.3.1	Detailed Description	11
5.3.2	Member Function Documentation	11
5.3.2.1	getBranch1()	11
5.3.2.2	getBranch2()	12
5.3.2.3	getMass() const	12
5.3.2.4	getPos() const	12
5.3.2.5	getVel() const	12
5.3.2.6	Particle(const Float _mass, const FloatVector &_pos, const FloatVector &_vel)	12
5.3.2.7	setMass(const Float m)	13
5.3.2.8	setPos(const FloatVector &_pos)	13
5.3.2.9	setVel(const FloatVector &_vel)	14
5.4	NB::Parameter Class Reference	14
5.4.1	Detailed Description	14
6	File Documentation	15
6.1	collision.cpp File Reference	15
6.2	collision.h File Reference	16
6.3	macro.h File Reference	16
6.3.1	Macro Definition Documentation	17
6.3.1.1	__Collision	17
6.4	main.cpp File Reference	17
6.4.1	Function Documentation	18
6.4.1.1	main()	18
6.5	nbody.cpp File Reference	19
6.6	nbody.h File Reference	19
6.7	sample.h File Reference	20
	Index	21

Chapter 1

Namespace Index

1.1 Namespace List

Here is a list of all namespaces with brief descriptions:

LONG		
	LONG implementation	7
MARIO		
	Mario implementation	7
NB		
	Namespace for NB module	7

Chapter 2

Class Index

2.1 Class List

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

LONG::Collision	
Collision class	9
MARIO::Nbody	10
NB::Nbody	
Class for defining a particle	10
NB::Parameter	
Parameter class shared by all particles	14

Chapter 3

File Index

3.1 File List

Here is a list of all files with brief descriptions:

collision.cpp	15
collision.h	16
macro.h	16
main.cpp	17
nbody.cpp	19
nbody.h	19
sample.h	20

Chapter 4

Namespace Documentation

4.1 LONG Namespace Reference

LONG implementation.

Classes

- class [Collision](#)
Collision class.

4.1.1 Detailed Description

LONG implementation.

4.2 MARIO Namespace Reference

Mario implementation.

Classes

- class [Nbody](#)

4.2.1 Detailed Description

Mario implementation.

4.3 NB Namespace Reference

namespace for [NB](#) module

Classes

- class [Nbody](#)
a class for defining a particle
- class [Parameter](#)
parameter class shared by all particles

Functions

- class [NB::Parameter evolution](#) (Particle * _particle, const Int _n, const PertParticle * _perturber, const PertForce * _pert_force, const Float _time_start, const Float _time_end, Float _time_real, [Parameter](#) & _ext_pars)
evolution function

4.3.1 Detailed Description

namespace for [NB](#) module

4.3.2 Function Documentation

4.3.2.1 class [NB::Parameter NB::evolution](#) (Particle * *_particle*, const Int *_n*, const PertParticle * *_perturber*, const PertForce * *_pert_force*, const Float *_time_start*, const Float *_time_end*, Float *_time_real*, [Parameter](#) & *_ext_pars*)

evolution function

Parameters

in	<i>_particle</i>	: particle set (the c.m. particle, the subset is linked in the branches)
in	<i>_n</i>	: number of particles
in	<i>_perturber</i>	perturbers for external interaction of the sub-group (read only)
in	<i>_pert_force</i>	perturber force for prediction, or external force (e.g. PN, tidal force) depending on the implementation
in	<i>_time_start</i>	: starting time of evolution
in	<i>_time_end</i>	expected time of ending evolution
out	<i>_time_real</i>	the real evolved time from the evolution function
in, out	<i>_ext_pars</i>	extra parameters needed for the N-body code (some global parameter used for all particles or control parameters) depend on implementation

Chapter 5

Class Documentation

5.1 LONG::Collision Class Reference

[Collision](#) class.

```
#include <collision.h>
```

Public Member Functions

- void [call](#) (const double _r12)
check collision

5.1.1 Detailed Description

[Collision](#) class.

5.1.2 Member Function Documentation

5.1.2.1 void LONG::Collision::call (const double _r12)

check collision

Parameters

in	_r12	distance between 1 and 2
----	----------------------	--------------------------

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

- [collision.h](#)
- [collision.cpp](#)

5.2 MARIO::Nbody Class Reference

```
#include <nbody.h>
```

Public Member Functions

- void [evolution](#) (const double _time_end, double &_time_real)
evolution function

5.2.1 Member Function Documentation

5.2.1.1 void MARIO::Nbody::evolution (const double *_time_end*, double & *_time_real*)

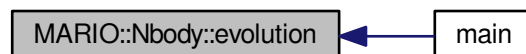
evolution function

evolution function for [Nbody](#)

Parameters

in	<i>_time_end</i>	expected time of ending evolution
out	<i>_time_real</i>	the real evolved time from the evolution function

Here is the caller graph for this function:



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

- [nbody.h](#)
- [nbody.cpp](#)

5.3 NB::Nbody Class Reference

a class for defining a particle

```
#include <sample.h>
```

Public Member Functions

- [Particle](#) (const Float _mass, const FloatVector &_pos, const FloatVector &_vel)
constructor
- Float [getMass](#) () const
Get mass (required for ARC::chain)
- const FloatVector [getPos](#) () const
Get position.
- const FloatVector [getVel](#) () const
Get velocity.
- void [setPos](#) (const FloatVector &_pos)
Set position.
- void [setVel](#) (const FloatVector &_vel)
Set velocity.
- void [setMass](#) (const Float m)
Set mass (required for ARC::chain)
- [Particle](#) * [getBranch1](#) ()
branch 1 address for binary tree
- [Particle](#) * [getBranch2](#) ()
branch 2 address for binary tree

5.3.1 Detailed Description

a class for defining a particle

5.3.2 Member Function Documentation

5.3.2.1 [Particle](#)* NB::Nbody::getBranch1 ()

branch 1 address for binary tree

Here is the caller graph for this function:



5.3.2.2 Particle* NB::Nbody::getBranch2 ()

branch 2 address for binary tree

Here is the caller graph for this function:



5.3.2.3 Float NB::Nbody::getMass () const [inline]

Get mass (required for ARC::chain)

Returns

mass

5.3.2.4 const FloatVector NB::Nbody::getPos () const [inline]

Get position.

Returns

position vector

5.3.2.5 const FloatVector NB::Nbody::getVel () const [inline]

Get velocity.

Returns

velocity vector

5.3.2.6 NB::Nbody::Particle (const Float _mass, const FloatVector & _pos, const FloatVector & _vel) [inline]

constructor

Parameters

in	<code>_mass</code>	particle mass
in	<code>_pos</code>	position
in	<code>_vel</code>	velocity

Here is the caller graph for this function:



5.3.2.7 void NB::Nbody::setMass (const Float *m*) [inline]

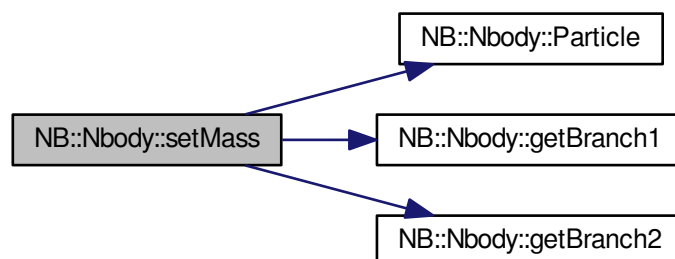
Set mass (required for ARC::chain)

NAN check will be done

Parameters

in	<code>m</code>	particle mass
----	----------------	---------------

Here is the call graph for this function:



5.3.2.8 void NB::Nbody::setPos (const FloatVector & _pos) [inline]

Set position.

Parameters

in	<code>_pos</code>	position vector
----	-------------------	-----------------

5.3.2.9 void NB::Nbody::setVel (const FloatVector &_vel) [inline]

Set velocity.

Parameters

in	<code>_vel</code>	velocity vector
----	-------------------	-----------------

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

- [sample.h](#)

5.4 NB::Parameter Class Reference

parameter class shared by all particles

```
#include <sample.h>
```

5.4.1 Detailed Description

parameter class shared by all particles

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

- [sample.h](#)

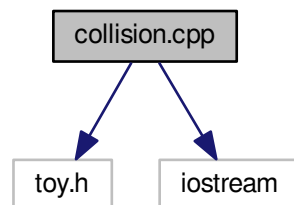
Chapter 6

File Documentation

6.1 collision.cpp File Reference

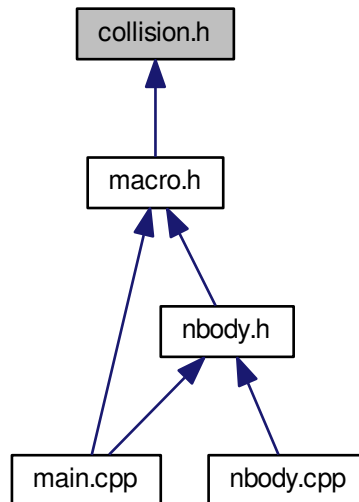
```
#include <toy.h>  
#include <iostream>
```

Include dependency graph for collision.cpp:



6.2 collision.h File Reference

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



Classes

- class [LONG::Collision](#)
Collision class.

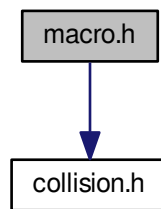
Namespaces

- [LONG](#)
LONG implementation.

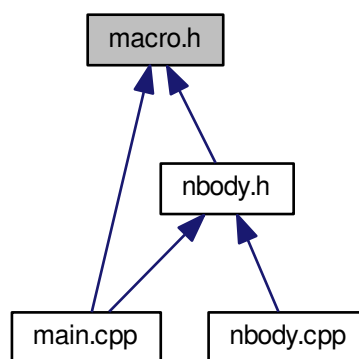
6.3 macro.h File Reference

```
#include <collision.h>
```

Include dependency graph for macro.h:



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



Macros

- `#define __Collision LONG::Collision`

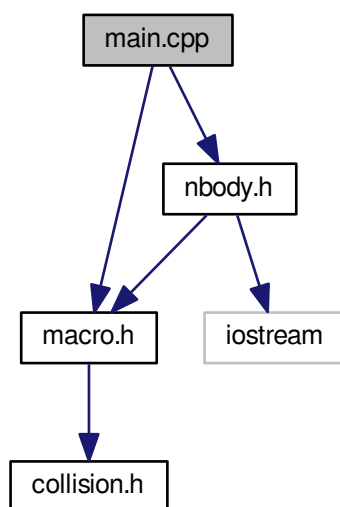
6.3.1 Macro Definition Documentation

6.3.1.1 `#define __Collision LONG::Collision`

6.4 main.cpp File Reference

```
#include <macro.h>
#include <nbody.h>
```

Include dependency graph for main.cpp:



Functions

- int `main` ()
Main function.

6.4.1 Function Documentation

6.4.1.1 int main ()

Main function.

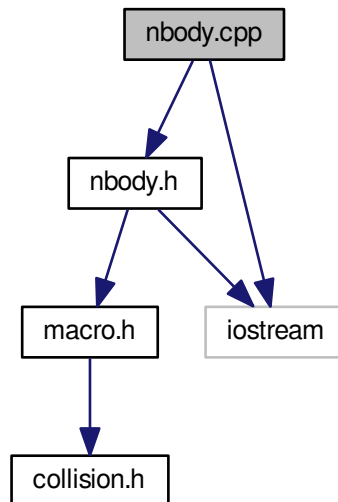
Here is the call graph for this function:



6.5 nbody.cpp File Reference

```
#include <nbody.h>
#include <iostream>
```

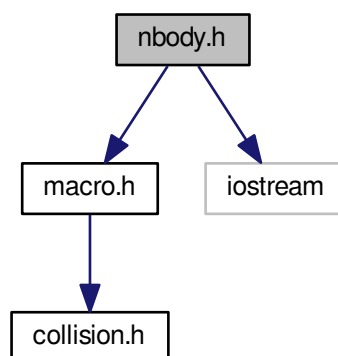
Include dependency graph for nbody.cpp:



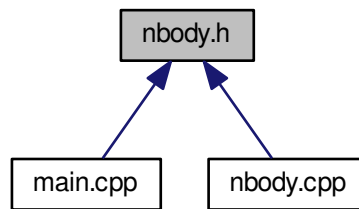
6.6 nbody.h File Reference

```
#include <macro.h>
#include <iostream>
```

Include dependency graph for nbody.h:



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



Classes

- class [MARIO::Nbody](#)

Namespaces

- [MARIO](#)
Mario implementation.

6.7 sample.h File Reference

Classes

- class [NB::Nbody](#)
a class for defining a particle
- class [NB::Parameter](#)
parameter class shared by all particles

Namespaces

- [NB](#)
namespace for [NB](#) module

Functions

- class [NB::Parameter](#) [NB::evolution](#) (Particle *_particle, const Int _n, const PertParticle *_perturber, const PertForce *_pert_force, const Float _time_start, const Float _time_end, Float _time_real, Parameter &_ext←_pars)
evolution function

Index

- __Collision
 - macro.h, [17](#)
- call
 - LONG::Collision, [9](#)
- collision.cpp, [15](#)
- collision.h, [16](#)
- evolution
 - MARIO::Nbody, [10](#)
 - NB, [8](#)
- getBranch1
 - NB::Nbody, [11](#)
- getBranch2
 - NB::Nbody, [11](#)
- getMass
 - NB::Nbody, [12](#)
- getPos
 - NB::Nbody, [12](#)
- getVel
 - NB::Nbody, [12](#)
- LONG::Collision, [9](#)
 - call, [9](#)
- LONG, [7](#)
- MARIO::Nbody, [10](#)
 - evolution, [10](#)
- MARIO, [7](#)
- macro.h, [16](#)
 - __Collision, [17](#)
- main
 - main.cpp, [18](#)
- main.cpp, [17](#)
 - main, [18](#)
- NB::Nbody, [10](#)
 - getBranch1, [11](#)
 - getBranch2, [11](#)
 - getMass, [12](#)
 - getPos, [12](#)
 - getVel, [12](#)
 - Particle, [12](#)
 - setMass, [13](#)
 - setPos, [13](#)
 - setVel, [14](#)
- NB::Parameter, [14](#)
- NB, [7](#)
 - evolution, [8](#)
- nbody.cpp, [19](#)
 - nbody.h, [19](#)
- Particle
 - NB::Nbody, [12](#)
- sample.h, [20](#)
- setMass
 - NB::Nbody, [13](#)
- setPos
 - NB::Nbody, [13](#)
- setVel
 - NB::Nbody, [14](#)