Reference Manual

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Chapter 1

Namespace Index

1.1 Namespace List

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

LParser
The namespace used by the LParser 7

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

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

std::exception
- LParser::ParserException 16

LParser::LSystem 9
- LParser::LSystem2D 12
- LParser::LSystem3D 14

Chapter 3

Class Index

3.1 Class List

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

LParser::LSystem
: This is the Base Class used by LParser2D and LParser3D 9

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Chapter 4

Namespace Documentation

4.1 LParser Namespace Reference

The namespace used by the LParser.

Classes

- class ParserException

  The exception thrown when an invalid file is read.
- class LSystem

  This is the Base Class used by LParser2D and LParser3D.
- class LSystem2D

  This class represents a 2D-LSystem.
- class LSystem3D

  This class represents a 3D-LSystem.

Functions

- std::ostream & operator<< (std::ostream &out, LSystem2D const &system)

  Writes an LSystem2D to an output stream.
- std::istream & operator>> (std::istream &in, LSystem2D &system)

  Reads an LSystem2D from an output stream.
- std::ostream & operator<< (std::ostream &out, LSystem3D const &system)

  Writes an LSystem3D to an output stream.
- std::istream & operator>> (std::istream &in, LSystem3D &system)

  Reads an LSystem3D from an output stream.

4.1.1 Detailed Description

The namespace used by the LParser.

4.1.2 Function Documentation

4.1.2.1 std::ostream & LParser::operator<< (std::ostream & *out,* LParser::LSystem2D const & *system*)

Writes an LSystem2D to an output stream.

Parameters

out	The outputstream to write the LSystem2D to
system	The L-System to be written

Returns

The outputstream the L-System was written to

Definition at line 527 of file lparser.cc.

4.1.2.2 std::ostream & LParser::operator<< (std::ostream & *out*, LParser::LSystem3D const & *system*)

Writes an LSystem3D to an output stream.

Parameters

out	The outputstream to write the LSystem2D to
system	The L-System to be written

Returns

The outputstream the L-System was written to

Definition at line 548 of file lparser.cc.

4.1.2.3 std::istream & LParser::operator>> (std::istream & *in*, LParser::LSystem2D & *system*)

Reads an LSystem2D from an output stream.

Parameters

in	The input stream to read the LSystem2D from
system	The L-System object in which the parsed LSystem is to be stored

Returns

The input stream from which the L-System was read

Definition at line 534 of file lparser.cc.

4.1.2.4 std::istream & LParser::operator>> (std::istream & *in*, LParser::LSystem3D & *system*)

Reads an LSystem3D from an output stream.

Parameters

in	The input stream to read the LSystem2D from
system	The L-System object in which the parsed LSystem is to be stored

Returns

The input stream from which the L-System was read

Definition at line 554 of file lparser.cc.

Chapter 5

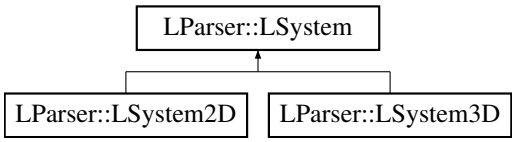
Class Documentation

5.1 LParser::LSystem Class Reference

This is the Base Class used by LParser2D and LParser3D.

`#include <lparser.h>`

Inheritance diagram for LParser::LSystem:



Public Member Functions

- std::set< char > const & get_alphabet () const

  returns the Alphabet of the L-System
- bool draw (char c) const

  Draw function. Returns true if a line needs to be drawn for this character.
- std::string const & get_replacement (char c) const

  Replacement function. Returns the replacement string for a given character of the Alphabet.
- double get_angle () const

  Returns the angle of the L-System.
- std::string const & get_initiator () const

  Returns the initiator string of the L-System.
- unsigned int get_nr_iterations () const

  Retrurns the number of times a symbol must be replaced by it's replacement string.

Protected Member Functions

- LSystem ()

  Constructor: creates an empty LSystem.
- LSystem (LSystem const &system)

  Copy-constructor: creates a new L-System from an existing L-System.
- virtual ~LSystem ()

  Destructor.

- LSystem & operator= (LSystem const &system)

  Assignment operator.

Protected Attributes

- std::set< char > alphabet

  the alphabet of the l-system
- std::map< char, bool > drawfunction

  the draw function mapping of the l-system
- std::string initiator

  the initiator stringof the l-system
- double angle

  the angle of the l-system
- std::map< char, std::string > replacementrules

  the replacement rules of the l-system
- unsigned int nrIterations

  the number of replacements of the l-system

5.1.1 Detailed Description

This is the Base Class used by LParser2D and LParser3D.

Definition at line 82 of file lparser.h.

5.1.2 Constructor & Destructor Documentation

5.1.2.1 LParser::LSystem::LSystem (LSystem const & *system*) [protected]

Copy-constructor: creates a new L-System from an existing L-System.

Parameters

system	The L-System to be copied

Definition at line 452 of file lparser.cc.

5.1.3 Member Function Documentation

5.1.3.1 bool LParser::LSystem::draw (char *c*) const

Draw function. Returns true if a line needs to be drawn for this character.

Parameters

c	the character of the alphabet

Returns

whether a line needs to be drawn for the character

Definition at line 477 of file lparser.cc.

5.1.3.2 std::set< char > const & LParser::LSystem::get_alphabet ( ) const

returns the Alphabet of the L-System

Returns

a const reference to the vector containing the alphabet

Definition at line 473 of file lparser.cc.

5.1.3.3 double LParser::LSystem::get_angle ( ) const

Returns the angle of the L-System.

Returns

the angle used by the LSystem

Definition at line 487 of file lparser.cc.

5.1.3.4 std::string const & LParser::LSystem::get_initiator ( ) const

Returns the initiator string of the L-System.

Returns

the inititor string of the L-System

Definition at line 491 of file lparser.cc.

5.1.3.5 unsigned int LParser::LSystem::get_nr_iterations ( ) const

Retrurns the number of times a symbol must be replaced by it's replacement string.

Returns

the number of replacements;

Definition at line 495 of file lparser.cc.

5.1.3.6 std::string const & LParser::LSystem::get_replacement (char *c*) const

Replacement function. Returns the replacement string for a given character of the Alphabet.

Parameters

c	the character of the alphabet

Returns

replacement string

Definition at line 482 of file lparser.cc.

5.1.3.7 LParser::LSystem & LParser::LSystem::operator= (LParser::LSystem const & *system*) [protected]

Assignment operator.

Parameters

system	the L-System to be copied

Definition at line 460 of file lparser.cc.

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

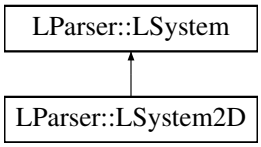
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/lparser/lparser.h
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/lparser/lparser.cc

5.2 LParser::LSystem2D Class Reference

This class represents a 2D-LSystem.

`#include <lparser.h>`

Inheritance diagram for LParser::LSystem2D:



Public Member Functions

- LSystem2D ()

  Constructor.
- LSystem2D (LSystem2D const &system)

  Copy Constructor.
- LSystem2D (std::istream &in)

  Constructor: reads the LSystem from an input stream.
- LSystem2D & operator= (LSystem2D const &system)

  Assignment operator. Assigns another LSystem to this object.
- double get_starting_angle () const

  Returns the starting angle of the 2D L-System.

Protected Attributes

- double startingAngle

  the starting angle of the 2D-LSystem

Friends

- std::istream & operator>> (std::istream &in, LSystem2D &system)

  Reads an LSystem2D from an output stream.

Additional Inherited Members

5.2.1 Detailed Description

This class represents a 2D-LSystem.

Definition at line 214 of file lparser.h.

5.2.2 Constructor & Destructor Documentation

5.2.2.1 LParser::LSystem2D::LSystem2D (LSystem2D const & *system*)

Copy Constructor.

Parameters

system	The L-System to be copied

Definition at line 504 of file lparser.cc.

5.2.2.2 LParser::LSystem2D::LSystem2D (std::istream & *in*)

Constructor: reads the LSystem from an input stream.

Parameters

in	The input stream from which the L-System is to be read

Definition at line 508 of file lparser.cc.

5.2.3 Member Function Documentation

5.2.3.1 double LParser::LSystem2D::get_starting_angle ( ) const

Returns the starting angle of the 2D L-System.

Returns

the starting angle of the L-System

Definition at line 522 of file lparser.cc.

5.2.3.2 LParser::LSystem2D & LParser::LSystem2D::operator= (LParser::LSystem2D const & *system*)

Assignment operator. Assigns another LSystem to this object.

Parameters

system	The L-System to be assigned to this object

Definition at line 516 of file lparser.cc.

5.2.4 Friends And Related Function Documentation

5.2.4.1 std::istream& operator>> (std::istream & *in*, LSystem2D & *system*) [friend]

Reads an LSystem2D from an output stream.

Parameters

in	The input stream to read the LSystem2D from
system	The L-System object in which the parsed LSystem is to be stored

Returns

The input stream from which the L-System was read

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

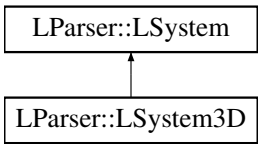
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/lparser/lparser.h
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/lparser/lparser.cc

5.3 LParser::LSystem3D Class Reference

This class represents a 3D-LSystem.

`#include <lparser.h>`

Inheritance diagram for LParser::LSystem3D:



Public Member Functions

- LSystem3D ()

  Constructor.
- LSystem3D (LSystem3D const &system)

  Copy Constructor.
- LSystem3D (std::istream &in)

  Constructor: reads the LSystem from an input stream.
- virtual ~LSystem3D ()

  Destructor.
- LSystem3D & operator= (LSystem3D const &system)

  Assignment operator.

Friends

- std::istream & operator>> (std::istream &in, LSystem3D &system)

  Reads an LSystem3D from an output stream.

Additional Inherited Members

5.3.1 Detailed Description

This class represents a 3D-LSystem.

Definition at line 286 of file lparser.h.

5.3.2 Constructor & Destructor Documentation

5.3.2.1 LParser::LSystem3D::LSystem3D (LParser::LSystem3D const & *system*)

Copy Constructor.

Parameters

system	The L-System to be assigned to this object

Definition at line 571 of file lparser.cc.

5.3.2.2 LParser::LSystem3D::LSystem3D (std::istream & *in*)

Constructor: reads the LSystem from an input stream.

Parameters

in	The input stream from which the LSystem is to be read

Definition at line 575 of file lparser.cc.

5.3.3 Member Function Documentation

5.3.3.1 LParser::LSystem3D & LParser::LSystem3D::operator= (LParser::LSystem3D const & *system*)

Assignment operator.

Parameters

system	The L-System to be assigned to this object

Definition at line 583 of file lparser.cc.

5.3.4 Friends And Related Function Documentation

5.3.4.1 std::istream& operator>> (std::istream & *in,* LSystem3D & *system*) [friend]

Reads an LSystem3D from an output stream.

Parameters

in	The input stream to read the LSystem2D from
system	The L-System object in which the parsed LSystem is to be stored

Returns

The input stream from which the L-System was read

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

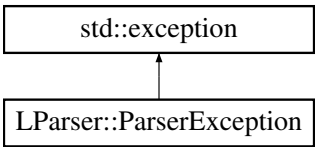
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/lparser/lparser.h
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/lparser/lparser.cc

5.4 LParser::ParserException Class Reference

The exception thrown when an invalid file is read.

`#include <lparser.h>`

Inheritance diagram for LParser::ParserException:



Public Member Functions

- ParserException (std::string const &msg, unsigned int line, unsigned int pos)
  Constructor.
- ParserException (const ParserException &original)
  Copy Constructor.
- virtual ~ParserException () throw ()
  Destructor.
- ParserException & operator= (const ParserException &original)
  Assignment operator.
- virtual const char * what () const throw ()
  Returns a description of the error hat occurred.

5.4.1 Detailed Description

The exception thrown when an invalid file is read.

Definition at line 33 of file lparser.h.

5.4.2 Constructor & Destructor Documentation

5.4.2.1 LParser::ParserException::ParserException (std::string const & *msg,* unsigned int *line,* unsigned int *pos*)

Constructor.

Parameters

msg	String explaining what went wrong
line	The line in the file at which the parser failed
pos	The position on the line at which the parser failed

Definition at line 418 of file lparser.cc.

5.4.2.2 LParser::ParserException::ParserException (const ParserException & *original*)

Copy Constructor.

Parameters

original	The exception to be copied

Definition at line 426 of file lparser.cc.

5.4.3 Member Function Documentation

5.4.3.1 LParser::ParserException & LParser::ParserException::operator= (const ParserException & *original*)

Assignment operator.

Parameters

original	The original exception to be assigned to this one

Definition at line 436 of file lparser.cc.

5.4.3.2 const char * LParser::ParserException::what ( ) const throw () [virtual]

Returns a description of the error hat occurred.

Returns

A description of the error hat occurred.

Definition at line 442 of file lparser.cc.

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

- /Users/bartsas/Courses/Graphics/SVN/code/cxx/lparser/lparser.h
- /Users/bartsas/Courses/Graphics/SVN/code/cxx/lparser/lparser.cc

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