jaula API Reference Reference Manual

version 1.2.0

Generated by Doxygen 1.5.1

Sat May 12 10:39:21 2007

Contents

Chapter 1

jaula API Reference Main Page

1.1 Introduction

JAULA means "JSON Analysis User Library Acronym" and is the name for a C++ library that parses and writes data in JSON format.

This library uses standard C++ streams for reading the data to parse and for writing output data so, it can be easily used not only for reading and writing JSON files as for serializing data throw sockets or other means, making it suitable (for instance) for JSON RPC.

Project is being hosted by SourceForge at http://sourceforge.net/projects/jaula

Further documentation can be found at project web site http://morongo.homelinux.net/jaula

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jaula API Reference Module Index

2.1 jaula API Reference Modules

Here is a list of all modules:

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3.1 jaula API Reference Namespace List

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jaula API Reference Data Structure Index

5.1 jaula API Reference Data Structures

Here are the data structures with brief descriptions:

Chapter 6

jaula API Reference Module Documentation

6.1 JAULA: General definitions

Namespaces

- namespace JAULA

  Namespace for all library definitions.

6.2 JAULA: Error handling

Data Structures

- class JAULA::Bad_Data_Type
  class for incompatible data type exceptions
- class JAULA::Exception
  Base class for error handling exceptions.
- class JAULA::Lexan_Error
  class for lexical analysis exceptions
- class JAULA::Name_Duplicated
  Class for bad object property name exceptions.
- class JAULA::No_Error
  class for no error condition exceptions
- class JAULA::Syntax_Error
  class for syntax exceptions

Functions

- std::ostream & operator<< (std::ostream &ostr, JAULA::Exception const &ex)
  Insertion operator extension for Exceptions.

6.2.1 Function Documentation

6.2.1.1 std::ostream& operator<< (std::ostream & *ostr*, JAULA::Exception const & *ex*)

Insertion operator extension for Exceptions.

Parameters:

ostr Stream where the instance is to be displayed.

ex Instance to display

Returns:

a reference to the stream

Description

This method extends the standard insertion operation for streams to invoke JAULA::display() through this alternative sintax.

Author:

Kombo Morongo <morongo666@gmail.com>

6.3 JAULA: JSON lexical analysis

Data Structures

- class JAULA::Lexan

  Lexical Analysis implementation.

6.4 JAULA: JSON data parser

Data Structures

- class JAULA::Parser

  JSON Data Parser.

- class JAULA::Parser::Value_Parser

  JSON Value Parser.

6.5 JAULA: JSON Values containers

Data Structures

- class JAULA::Value
  Base class for handling values.
- class JAULA::Value_Array
  Class for handling array values.
- class JAULA::Value_Boolean
  Class for handling boolean values.
- class JAULA::Value_Complex
  Base class for handling complex values.
- class JAULA::Value_Null
  class for handling null values
- class JAULA::Value_Number
  Class for handling numeric values.
- class JAULA::Value_Number_Int
  Class for handling numeric (int) values.
- class JAULA::Value_Object
  Class for handling object values.
- class JAULA::Value_String
  Class for handling numeric values.

Functions

- std::ostream & operator<< (std::ostream &ostr, JAULA::Value const &val)
  Insertion operator extension for values.

6.5.1 Function Documentation

6.5.1.1 std::ostream& operator<< (std::ostream & *ostr*, JAULA::Value const & *val*)

Insertion operator extension for values.

Parameters:

ostr Stream where the instance is to be represented.

val Instance to represent

Returns:

a reference to the stream

Description

This method extends the standard insertion operation for streams to invoke JAULA::repr() through this alternative sintax wirting the contents in JSON notation.

Author:

Kombo Morongo <morongo666@gmail.com>

Chapter 7

jaula API Reference Namespace Documentation

7.1 JAULA Namespace Reference

Namespace for all library definitions.

Data Structures

- class Bad_Data_Type

  class for incompatible data type exceptions

- class Exception

  Base class for error handling exceptions.

- class Lexan

  Lexical Analysis implementation.

- class Lexan_Error

  class for lexical analysis exceptions

- class Name_Duplicated

  Class for bad object property name exceptions.

- class No_Error

  class for no error condition exceptions

- class Parser

  JSON Data Parser.

- class Syntax_Error

  class for syntax exceptions

- class Value

Base class for handling values.

- class Value_Array

  Class for handling array values.

- class Value_Boolean

  Class for handling boolean values.

- class Value_Complex

  Base class for handling complex values.

- class Value_Null

  class for handling null values

- class Value_Number

  Class for handling numeric values.

- class Value_Number_Int

  Class for handling numeric (int) values.

- class Value_Object

  Class for handling object values.

- class Value_String

  Class for handling numeric values.

7.1.1 Detailed Description

Namespace for all library definitions.

This namespace wraps all the library definitions in order to avoid name clashing with application symbols.

Author:

Kombo Morongo <morongo666@gmail.com>

Chapter 8

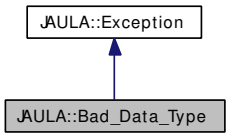
jaula API Reference Data Structure Documentation

8.1 JAULA::Bad_Data_Type Class Reference

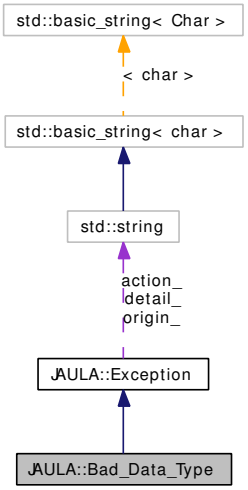
class for incompatible data type exceptions

`#include <jaula_bad_data_type.h>`

Inheritance diagram for JAULA::Bad_Data_Type:



Collaboration diagram for JAULA::Bad_Data_Type:



Public Member Functions

- Bad_Data_Type (std::string const &detail="", std::string const &action="", std::string const &origin="")

  Constructor.

- Bad_Data_Type & operator= (Bad_Data_Type const &orig)

  Assignment operator.

- virtual ~Bad_Data_Type ()

  Destructor.

8.1.1 Detailed Description

class for incompatible data type exceptions

This class defines the exceptions to be thrown in case of incompatible data types usage.

Author:

Kombo Morongo <morongo666@gmail.com>

8.1.2 Constructor & Destructor Documentation

8.1.2.1 JAULA::Bad_Data_Type::Bad_Data_Type (std::string const & *detail* = "", std::string const & *action* = "", std::string const & *origin* = "")

Constructor.

Parameters:

detail detailed description about the exception (what made the execution fail).

action action being performed when the exception arose.

origin Name of the method (and others methods that have called this) by the time the exception arose.

Description

This method construct a new exception instance with JAULA::BAD_DATA_TYPE code.

8.1.2.2 JAULA::Bad_Data_Type::~Bad_Data_Type () [virtual]

Destructor.

8.1.3 Member Function Documentation

8.1.3.1 Bad_Data_Type & JAULA::Bad_Data_Type::operator= (Bad_Data_Type const & *orig*)

Assignment operator.

Parameters:

orig Original instance to copy

Returns:

a reference to the destination instance

Description

Copies the contents of the original instance in the destination.

Note:

This method has been redefined from the base class so the instance type cannot be altered.

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

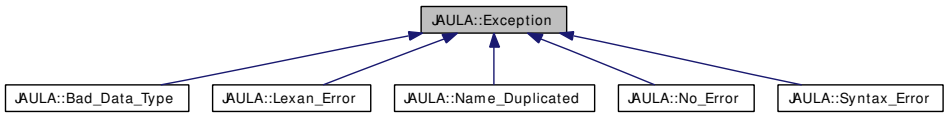
- jaula_bad_data_type.h
- jaula_bad_data_type.cc

8.2 JAULA::Exception Class Reference

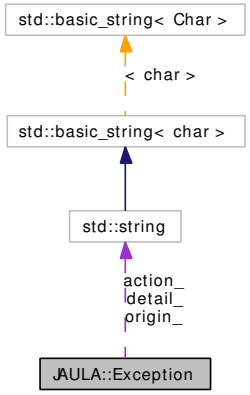
Base class for error handling exceptions.

`#include <jaula_exception.h>`

Inheritance diagram for JAULA::Exception:



Collaboration diagram for JAULA::Exception:



Public Types

- enum ExCode {
  NO_ERROR, BAD_DATA_TYPE, NAME_DUPLICATED, LEXAN_ERROR,
  SYNTAX_ERROR }
  Enumeration of available error codes.

Public Member Functions

- void addOrigin (std::string const &origin)
  Attachs a new origin after the existing ones.
- void display (std::ostream &ostr) const
  Represents the instance in a stream.
- Exception (Exception const &orig)
  Copy constructor.
- Exception (ExCode code=NO_ERROR, std::string const &detail="", std::string const &action="", std::string const &origin="")

Constructor.

- std::string const & getAction (void) const
  Retrieves the action that caused the exception.
- ExCode getCode (void) const
  Retrieves the error code for the exception.
- virtual std::string const & getDetail (void) const
  Retrieves the detailed description for the exception.
- std::string const & getOrigin (void) const
  Retrieves the method being run when the exception arose.
- Exception & operator= (Exception const &orig)
  Assignment operator.
- void setAction (std::string const &action)
  Establishes the action that caused the exception.
- void setDetail (std::string const &detail)
  Establishes the description for the exception.
- void setOrigin (std::string const &origin)
  Establishes the method being run when the exception arose.
- virtual ~Exception ()
  Destructor.

Protected Member Functions

- void setCode (ExCode code)
  Establishes the error code for the exception.

Private Attributes

- std::string action_
  Container action causing the exception.
- ExCode code_
  Container for error code.
- std::string detail_
  Container for exception textual detail.
- std::string origin_
  Container for where the exception was detected.

8.2.1 Detailed Description

Base class for error handling exceptions.

This class is the base for all kind of exceptions thrown by the methods defined in this library.

Author:

Kombo Morongo <morongo666@gmail.com>

8.2.2 Member Enumeration Documentation

8.2.2.1 enum JAULA::Exception::ExCode

Enumeration of available error codes.

Enumerator:

NO_ERROR No Error detected
BAD_DATA_TYPE The data provided for a method is from a wrong type
NAME_DUPLICATED Name repeated for an object property
LEXAN_ERROR Error detected in the lexical Analysis phase
SYNTAX_ERROR Error detected in the syntaxis Analysis phase

8.2.3 Constructor & Destructor Documentation

8.2.3.1 JAULA::Exception::Exception (ExCode *code* = NO_ERROR, std::string const & *detail* = "", std::string const & *action* = "", std::string const & *origin* = "")

Constructor.

Parameters:

code Code for the exception as defined in ExCode
detail detailed description about the exception (what made the execution fail).
action action being performed when the exception arose.
origin Name of the method (and others methods that have called this) by the time the exception arose.

Description

This method construct a new exception instance detailing each available property.

8.2.3.2 JAULA::Exception::Exception (Exception const & *orig*)

Copy constructor.

Parameters:

orig Original instance to copy

Description

Creates a new instance copying the contents from another

8.2.3.3 JAULA::Exception::~Exception () [virtual]

Destructor.

8.2.4 Member Function Documentation

8.2.4.1 void JAULA::Exception::addOrigin (std::string const & *origin*)

Attachs a new origin after the existing ones.

Parameters:

origin Name of the method to add

Description

Adds the name of a method who is supposed to be the next method in the calling stack from where the exception occured so a basic trace can be performed.

8.2.4.2 void JAULA::Exception::display (std::ostream & *ostr*) const

Represents the instance in a stream.

Parameters:

ostr Stream where the instance is to be displayed.

Description

Puts a text representation of the instance contents in a stream.

8.2.4.3 std::string const & JAULA::Exception::getAction (void) const

Retrieves the action that caused the exception.

8.2.4.4 Exception::ExCode JAULA::Exception::getCode (void) const

Retrieves the error code for the exception.

8.2.4.5 std::string const & JAULA::Exception::getDetail (void) const [virtual]

Retrieves the detailed description for the exception.

Note:

This method has been declared as virtual so it can be overrwritten to generate automatic detailed descriptions for specific (derived) exception types.

Reimplemented in JAULA::Name_Duplicated.

8.2.4.6 std::string const & JAULA::Exception::getOrigin (void) const

Retrieves the method being run when the exception arose.

Description

Retrieves the method being run when the exception arose and the methods that called it if available.

8.2.4.7 Exception & JAULA::Exception::operator= (Exception const & *orig*)

Assignment operator.

Parameters:

orig Original instance to copy

Returns:

a reference to the destination instance

Description

Copies the contents of the original instance in the destination.

Note:

This method controls if destination and origin instances are the same so there is no trouble in a = a asignments.

8.2.4.8 void JAULA::Exception::setAction (std::string const & *action*)

Establishes the action that caused the exception.

Parameters:

action action being performed when the exception arose.

8.2.4.9 void JAULA::Exception::setCode (ExCode *code*) [protected]

Establishes the error code for the exception.

Parameters:

code Code for the exception as defined in ExCode

8.2.4.10 void JAULA::Exception::setDetail (std::string const & *detail*)

Establishes the description for the exception.

Parameters:

detail detailed description about the exception (what made the execution fail).

8.2.4.11 void JAULA::Exception::setOrigin (std::string const & *origin*)

Establishes the method being run when the exception arose.

Parameters:

origin Name of the method (and others methods that have called this) by the time the exception arose.

8.2.5 Field Documentation

8.2.5.1 std::string JAULA::Exception::action_ [private]

Container action causing the exception.

8.2.5.2 ExCode JAULA::Exception::code_ [private]

Container for error code.

8.2.5.3 std::string JAULA::Exception::detail_ [private]

Container for exception textual detail.

Reimplemented in JAULA::Name_Duplicated.

8.2.5.4 std::string JAULA::Exception::origin_ [private]

Container for where the exception was detected.

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

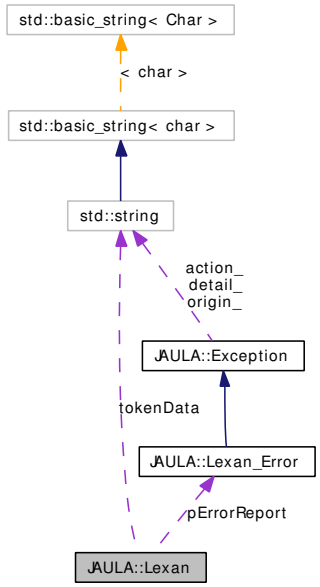
- jaula_exception.h
- jaula_exception.cc

8.3 JAULA::Lexan Class Reference

Lexical Analysis implementation.

`#include <jaula_lexan.h>`

Collaboration diagram for JAULA::Lexan:



Public Member Functions

- Lexan_Error const * getErrorReport (void) const
  Retrieves details for the last error detected.
- std::string const & getTokenData (void) const
  Retrieves last token associated data.
- Lexan (std::istream &in_stream, bool comments_allowed=false)
  Constructor.
- virtual void LexerError (const char *detail)
  Error report.
- virtual int yylex ()
  Retrieves tokens from the input.
- virtual ~Lexan ()
  Destructor.

Private Attributes

- bool commented

Flag for extending language to accept # comments.

- Lexan_Error * pErrorReport

  Pointer to the last exception detected.

- std::string tokenData

  Container for the token associated data.

8.3.1 Detailed Description

Lexical Analysis implementation.

This class implements the lexical analysis for JSON as specified by RFC 4627.

Author:

Kombo Morongo <morongo666@gmail.com>

8.3.2 Constructor & Destructor Documentation

8.3.2.1 JAULA::Lexan::Lexan (std::istream & *in_stream*, bool *comments_allowed* = `false`)

Constructor.

Parameters:

in_stream stream for the input data to analyze

comments_allowed flag to extend basic format and allow for # starting comments in input.

Description

Creates a lexical analysis instance for the specified input stream.

8.3.2.2 virtual JAULA::Lexan::~Lexan () `[virtual]`

Destructor.

8.3.3 Member Function Documentation

8.3.3.1 Lexan_Error const* JAULA::Lexan::getErrorReport (void) const

Retrieves details for the last error detected.

Returns:

a pointer to an instance containing the details for the last error detected during the lexical analysis process or a null pointer in case no error have ocurred during the lexical analysis so far.

8.3.3.2 std::string const& JAULA::Lexan::getTokenData (void) const

Retrieves last token associated data.

Returns:

the data associated for the last token returned for yylex() in case there is such kind of data (token corresponds to a property name or a single value) or undefined otherwise.

8.3.3.3 virtual void JAULA::Lexan::LexerError (const char * *detail*) [virtual]

Error report.

Parameters:

detail Text for the error received

Description

This method is a callback used by the analysis routines to indicate an error condition.

Its current implementation consists of generating the exception instance to be retrieved by getErrorReport().

8.3.3.4 virtual int JAULA::Lexan::yylex () [virtual]

Retrieves tokens from the input.

Returns:

the code for a token read or 0 if the end of data has been reached.

8.3.4 Field Documentation

8.3.4.1 bool JAULA::Lexan::commented [private]

Flag for extending language to accept # comments.

8.3.4.2 Lexan_Error* JAULA::Lexan::pErrorReport [private]

Pointer to the last exception detected.

8.3.4.3 std::string JAULA::Lexan::tokenData [private]

Container for the token associated data.

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

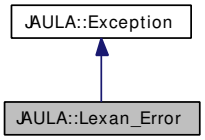
- jaula_lexan.h

8.4 JAULA::Lexan_Error Class Reference

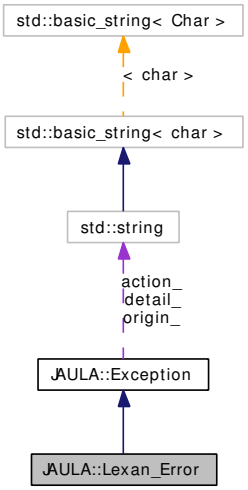
class for lexical analysis exceptions

`#include <jaula_lexan_error.h>`

Inheritance diagram for JAULA::Lexan_Error:



Collaboration diagram for JAULA::Lexan_Error:



Public Member Functions

- Lexan_Error (std::string const &detail="", std::string const &action="", std::string const &origin="")

  Constructor.

- Lexan_Error & operator= (Lexan_Error const &orig)

  Assignment operator.

- virtual ~Lexan_Error ()

  Destructor.

8.4.1 Detailed Description

class for lexical analysis exceptions

This class defines the exceptions to be thrown when errors are detected during the lexical analysis phase.

Author:

Kombo Morongo <morongo666@gmail.com>

8.4.2 Constructor & Destructor Documentation

8.4.2.1 JAULA::Lexan_Error::Lexan_Error (std::string const & *detail* = "", std::string const & *action* = "", std::string const & *origin* = "")

Constructor.

Parameters:

detail detailed description about the exception (what made the execution fail).

action action being performed when the exception arose.

origin Name of the method (and others methods that have called this) by the time the exception arose.

Description

This method construct a new exception instance with JAULA::LEXAN_ERROR code.

8.4.2.2 JAULA::Lexan_Error::~Lexan_Error () [virtual]

Destructor.

8.4.3 Member Function Documentation

8.4.3.1 Lexan_Error & JAULA::Lexan_Error::operator= (Lexan_Error const & *orig*)

Assignment operator.

Parameters:

orig Original instance to copy

Returns:

a reference to the destination instance

Description

Copies the contents of the original instance in the destination.

Note:

This method has been redefined from the base class so the instance type cannot be altered.

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

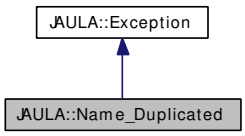
- jaula_lexan_error.h
- jaula_lexan_error.cc

8.5 JAULA::Name_Duplicated Class Reference

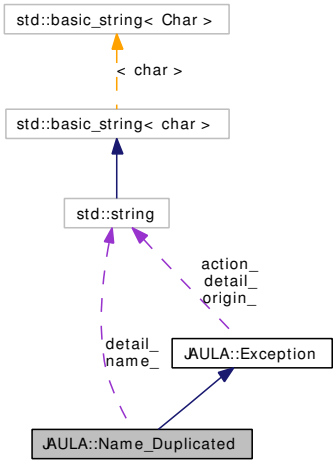
Class for bad object property name exceptions.

`#include <jaula_name_duplicated.h>`

Inheritance diagram for JAULA::Name_Duplicated:



Collaboration diagram for JAULA::Name_Duplicated:



Public Member Functions

- virtual std::string const & getDetail (void) const

  Retrieves the detailed description for the exception.

- std::string const & getName (void) const

  Retrieves the name of the duplicated property.

- Name_Duplicated (std::string const &name="", std::string const &action="", std::string const &origin="")

  Constructor.

- Name_Duplicated & operator= (Name_Duplicated const &orig)

  Assignment operator.

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

  Establishes the name for the duplicated property.

- virtual ~Name_Duplicated ()

Destructor.

Private Attributes

- std::string detail_
- std::string name_

8.5.1 Detailed Description

Class for bad object property name exceptions.

This class defines the exceptions to be thrown in case a property name has been used more than once in an object.

Author:

Kombo Morongo <morongo666@gmail.com>

8.5.2 Constructor & Destructor Documentation

8.5.2.1 JAULA::Name_Duplicated::Name_Duplicated (std::string const & *name* = "", std::string const & *action* = "", std::string const & *origin* = "")

Constructor.

Parameters:

name Invalid object property name (deuplicated).

action action being performed when the exception arose.

origin Name of the method (and others methods that have called this) by the time the exception arose.

Description

This method construct a new exception instance with JAULA::Name_DUPLICATED code.

8.5.2.2 JAULA::Name_Duplicated::~Name_Duplicated () [virtual]

Destructor.

8.5.3 Member Function Documentation

8.5.3.1 std::string const & JAULA::Name_Duplicated::getDetail (void) const [virtual]

Retrieves the detailed description for the exception.

Description

This method creates a standard detailed description for the exception based on the duplicated object property name.

Reimplemented from JAULA::Exception.

8.5.3.2 std::string const & JAULA::Name_Duplicated::getName (void) const

Retrieves the name of the duplicated property.

8.5.3.3 Name_Duplicated & JAULA::Name_Duplicated::operator= (Name_Duplicated const & *orig*)

Assignment operator.

Parameters:

orig Original instance to copy

Returns:

a reference to the destination instance

Description

Copies the contents of the original instance in the destination.

Note:

This method has been redefined from the base class so the instance type cannot be altered.

8.5.3.4 void JAULA::Name_Duplicated::setName (std::string const & *name*)

Establishes the name for the duplicated property.

Parameters:

name Name of the object property that launched the exception.

8.5.4 Field Documentation

8.5.4.1 std::string JAULA::Name_Duplicated::detail_ [private]

workspace where to generate class specific detail

Reimplemented from JAULA::Exception.

8.5.4.2 std::string JAULA::Name_Duplicated::name_ [private]

Container for the repeated name

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

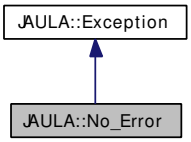
- jaula_name_duplicated.h
- jaula_name_duplicated.cc

8.6 JAULA::No_Error Class Reference

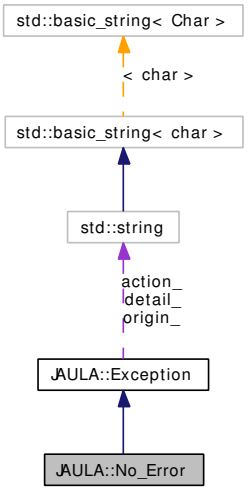
class for no error condition exceptions

`#include <jaula_no_error.h>`

Inheritance diagram for JAULA::No_Error:



Collaboration diagram for JAULA::No_Error:



Public Member Functions

- No_Error (void)
  Constructor.
- No_Error & operator= (No_Error const &orig)
  Assignment operator.
- virtual ~No_Error ()
  Destructor.

8.6.1 Detailed Description

class for no error condition exceptions

This class defines a null exception with no error.

Author:

Kombo Morongo <morongo666@gmail.com>

8.6.2 Constructor & Destructor Documentation

8.6.2.1 JAULA::No_Error::No_Error (void)

Constructor.

Description

This method construct a new exception instance with JAULA::NO_ERROR code.

8.6.2.2 JAULA::No_Error::~No_Error () [virtual]

Destructor.

8.6.3 Member Function Documentation

8.6.3.1 No_Error & JAULA::No_Error::operator= (No_Error const & *orig*)

Assignment operator.

Parameters:

orig Original instance to copy

Returns:

a reference to the destination instance

Description

Copies the contents of the original instance in the destination.

Note:

This method has been redefined from the base class so the instance type cannot be altered.

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

- jaula_no_error.h
- jaula_no_error.cc

8.7 JAULA::Parser Class Reference

JSON Data Parser.

`#include <jaula_parse.h>`

Public Member Functions

- Parser (void)

  Constructor.

- ~Parser (void)

  Destructor.

Static Public Member Functions

- static Value_Complex * parseStream (std::istream &inpStream, bool comments_allowed=false, bool full_read=true) throw (Exception)

  Parses JSON data from a stream.

Data Structures

- class Value_Parser

  JSON Value Parser.

8.7.1 Detailed Description

JSON Data Parser.

This class implements the JSON parser itself as specified by RFC 4627.

Author:

Kombo Morongo <morongo666@gmail.com>

8.7.2 Constructor & Destructor Documentation

8.7.2.1 JAULA::Parser::Parser (void)

Constructor.

8.7.2.2 JAULA::Parser::~Parser (void)

Destructor.

8.7.3 Member Function Documentation

8.7.3.1 Value_Complex * JAULA::Parser::parseStream (std::istream & *inpStream*, bool *comments_allowed* = `false`, bool *full_read* = `true`) throw (Exception) `[static]`

Parses JSON data from a stream.

Parameters:

inpStream stream from where to read the data to parse.

comments_allowed flag that if it is true means that the input can contain comments that begin with the hash '#' symbol and ends with eoln (as in bash). If it is false, it means that no comments are allowed in the input and if present will be considered as a syntax error.

full_read flag that if it is true means that the parser must analyze the input stream until the end of file is although it already had got a full array or object from it. In this situation, as JSON specification expects just only one array or object per input, any further data that is not a space for the syntax (or a comment if comments are allowed) will launch a syntax error exception.

If this flag is false, the parser will stop once a full array or object is taken from the input and, on exit, the stream will point to the start of the remaining data.

Returns:

a pointer to memory taken from the heap containing a complex value (array or object) with all the data from the stream parsed on individual / nested items.

Exceptions:

Exception An exception will be thrown as soon as a lexical or syntax error is found analyzing the stream. The result of printing th exception through a stream is a human readable text explaining the error found and an approximation of the error line where occurred.

Description

This method is the entry point for the JSON parser.

Warning:

As this method returns a pointer to memory from the heap, it is up to the user to free it when it is no longer needed in order to avoid leaks.

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

- jaula_parse.h
- jaula_parse.cc

8.8 JAULA::Parser::Value_Parser Class Reference

JSON Value Parser.

Public Member Functions

- Value_Parser (void)

  Constructor.

- ~Value_Parser (void)

  Destructor.

Static Public Member Functions

- static Value * parseValue (Lexan &lexan, unsigned int token) throw (Exception)

  reads a single JSON value

Private Types

- enum parser_states {
  START, array_addItem, array_nextItem, error,
  false_value, null_value, number_int_value, number_value,
  property_begin, property_name, property_value, property_next,
  string_value, true_value, END }

  Enumeration for the parser state machine.

Static Private Member Functions

- static void EOFError (Lexan &lexan, Syntax_Error const &ex) throw (Exception)

  Analyzes the reason for an EOF condition.

8.8.1 Detailed Description

JSON Value Parser.

Parses a value from the input stream.

Author:

Kombo Morongo <morongo666@gmail.com>

8.8.2 Member Enumeration Documentation

8.8.2.1 enum JAULA::Parser::Value_Parser::parser_states [private]

Enumeration for the parser state machine.

Description

This type defines a constant for each state that the parser may assume during the process.

Enumerator:

START initial state

array_addItem a new item for an array has been read

array_nextItem an inter-item delimiter for an array has been read

error error condition detected (pseudostate that launches an exception terminating the process)

false_value a boolean false value constant has been read (pseudostate)

null_value a null value constant has been read (pseudostate)

number_int_value a numeric (integer) value has been read (pseudostate)

number_value a numeric (float) value has been read (pseudostate)

property_begin an object initial delimiter has been read

property_name an object property name has been read

property_value an object property delimiter has been read

property_next an inter-property delimiter for an object has been read

string_value a string value has been read (pseudostate)

true_value a boolean true value constant has been read (pseudostate)

END final state (pseudostate)

8.8.3 Constructor & Destructor Documentation

8.8.3.1 JAULA::Parser::Value_Parser::Value_Parser (void)

Constructor.

8.8.3.2 JAULA::Parser::Value_Parser::~Value_Parser (void)

Destructor.

8.8.4 Member Function Documentation

8.8.4.1 void JAULA::Parser::Value_Parser::EOFError (Lexan & *lexan*, Syntax_Error const & *ex*) throw (Exception) [static, private]

Analyzes the reason for an EOF condition.

Parameters:

lexan Reference to the lexical analysis instance that reads from the input.

ex Syntax error to be thrown detailing why an EOF at this point is an error.

Exceptions:

Exception As a result of the execution of this method an exception is thrown with the data conatined in the input parameter or with a JAULA::LEXAN_ERROR type if the EOF is due to an error in the lexical analysis phase.

Description

This method is to be launched whenever an unexpected end of file is encountered. Its implementation includes analyzing if the EOF condition is real or a side effect from a lexical analysis error and chooses to send the Lexan::LexerError Exception or the one received in the input parameter based on this.

8.8.4.2 Value * JAULA::Parser::Value_Parser::parseValue (Lexan & *lexan*, unsigned int *token*) throw (Exception) [static]

reads a single JSON value

Parameters:

lexan Reference to the lexical analysis instance that reads from the input.

token Token read from the upper level. If this token does not belong to an starting value token, an error condition will arise.

Returns:

a pointer to memory taken from the heap containing the value read. If this value belongs to a complex type, all the items that it contains have been recursively parsed.

Exceptions:

Exception An exception will be thrown as soon as a lexical or syntax error is found analyzing the stream. The result of printing the exception retrurned through a stream is a human readable text explaining the error found and an approximation of the error line where it occurred.

Description

This method fully reads a whole value from the input or until a syntax or lexical error is found. Upon execution input stream is positioned so that a new token or EOF can be read from the input.

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

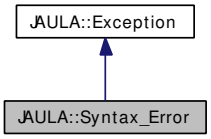
- jaula_parse.h
- jaula_parse.cc

8.9 JAULA::Syntax_Error Class Reference

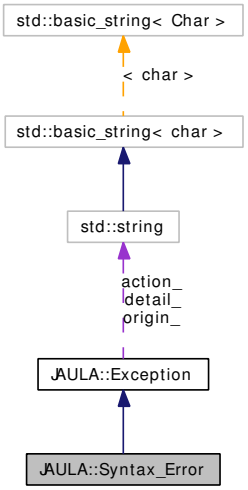
class for syntax exceptions

`#include <jaula_syntax_error.h>`

Inheritance diagram for JAULA::Syntax_Error:



Collaboration diagram for JAULA::Syntax_Error:



Public Member Functions

- Syntax_Error & operator= (Syntax_Error const &orig)

  Assignment operator.

- Syntax_Error (std::string const &detail="", std::string const &action="", std::string const &origin="")

  Constructor.

- virtual ~Syntax_Error ()

  Destructor.

8.9.1 Detailed Description

class for syntax exceptions

This class defines the exceptions to be thrown when errors are detected during the syntax analysis phase.

Author:

Kombo Morongo <morongo666@gmail.com>

8.9.2 Constructor & Destructor Documentation

8.9.2.1 JAULA::Syntax_Error::Syntax_Error (std::string const & *detail* = "", std::string const & *action* = "", std::string const & *origin* = "")

Constructor.

Parameters:

detail detailed description about the exception (what made the execution fail).

action action being performed when the exception arose.

origin Name of the method (and others methods that have called this) by the time the exception arose.

Description

This method construct a new exception instance with JAULA::SYNTAX_ERROR code.

8.9.2.2 JAULA::Syntax_Error::~Syntax_Error () [virtual]

Destructor.

8.9.3 Member Function Documentation

8.9.3.1 Syntax_Error & JAULA::Syntax_Error::operator= (Syntax_Error const & *orig*)

Assignment operator.

Parameters:

orig Original instance to copy

Returns:

a reference to the destination instance

Description

Copies the contents of the original instance in the destination.

Note:

This method has been redefined from the base class so the instance type cannot be altered.

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

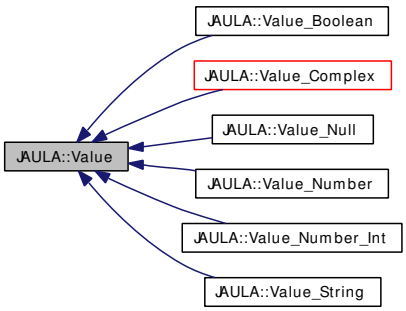
- jaula_syntax_error.h
- jaula_syntax_error.cc

8.10 JAULA::Value Class Reference

Base class for handling values.

`#include <jaula_value.h>`

Inheritance diagram for JAULA::Value:



Public Types

- enum ValueType {
  TYPE_NULL, TYPE_BOOLEAN, TYPE_STRING, TYPE_NUMBER,
  TYPE_NUMBER_INT, TYPE_ARRAY, TYPE_OBJECT }
  Enumeration of available value types.

Public Member Functions

- ValueType getType (void) const
  Retrieves the value type for the instance.
- Value & operator= (Value const &orig) throw (Bad_Data_Type)
  Assignment operator.
- virtual void repr (std::ostream &ostr) const=0
  Represents the instance in a stream.
- virtual void set (Value const &origin) throw (Bad_Data_Type)
  Copies the contents of one instance into anothe.
- virtual ~Value ()
  Destructor.

Static Public Member Functions

- static Value * duplicate (Value const &orig)
  Creates a duplicate of a value.

Protected Member Functions

- Value (ValueType Type)

  Constructor.

Private Attributes

- ValueType Type_

  Container for error code.

8.10.1 Detailed Description

Base class for handling values.

This class is the abstract base for all the containers for values according to the JSON specification.

Author:

Kombo Morongo <morongo666@gmail.com>

8.10.2 Member Enumeration Documentation

8.10.2.1 enum JAULA::Value::ValueType

Enumeration of available value types.

Enumerator:

TYPE_NULL JSON Null value

TYPE_BOOLEAN JSON Boolean value

TYPE_STRING JSON String value

TYPE_NUMBER JSON Number value

TYPE_NUMBER_INT JSON Number value adapted to hold integer quantities

TYPE_ARRAY JSON Array of values

TYPE_OBJECT JSON Object

8.10.3 Constructor & Destructor Documentation

8.10.3.1 JAULA::Value::~Value () [virtual]

Destructor.

8.10.3.2 JAULA::Value::Value (ValueType *Type*) [protected]

Constructor.

Parameters:

Type Type of value to be contained by the instance

Description

This method construct a new instance by specifying its type.

Note:

A ValueType for the instance is immutable during all the life cycle, this is the only method that permits specifying the value type.

8.10.4 Member Function Documentation

8.10.4.1 Value * JAULA::Value::duplicate (Value const & *orig*) [static]

Creates a duplicate of a value.

Parameters:

orig Original instance to duplicate.

Returns:

a pointer to memory taken from the heap (by means of the new operator) and containing a deep copy of the original value.

Warning:

As this method returns a pointer to memory allocated from the heap, it is up to the caller to release once it is no longer needed in order to avoid leaks.

8.10.4.2 Value::ValueType JAULA::Value::getType (void) const

Retrieves the value type for the instance.

Note:

Value types are immutable during instance's life cycle and can only be specified at construction time.

8.10.4.3 Value & JAULA::Value::operator= (Value const & *orig*) throw (Bad_Data_Type)

Assignment operator.

Parameters:

orig Original instance to copy

Returns:

a reference to the destination instance

Exceptions:

Bad_Data_Type This exception is launched in case that origin and destination value types are different.

Description

Copies the contents of the original instance in the destination.

Note:

This method controls if destination and origin instances are the same so there is no trouble in a = a asignments.

8.10.4.4 virtual void JAULA::Value::repr (std::ostream & *ostr*) const [pure virtual]

Represents the instance in a stream.

Parameters:

ostr Stream where the instance is to be represented.

Description

writes the instance content in JSON notation in a stream.

Implemented in JAULA::Value_Array, JAULA::Value_Boolean, JAULA::Value_Null, JAULA::Value_Number, JAULA::Value_Number_Int, JAULA::Value_Object, and JAULA::Value_String.

8.10.4.5 void JAULA::Value::set (Value const & *origin*) throw (Bad_Data_Type) [virtual]

Copies the contents of one instance into anothe.

Parameters:

origin Reference to the value to be copied.

Exceptions:

Bad_Data_Type This exception is launched in case that origin and destination value types are different.

Reimplemented in JAULA::Value_Array, JAULA::Value_Boolean, JAULA::Value_Null, JAULA::Value_Number, JAULA::Value_Number_Int, JAULA::Value_Object, and JAULA::Value_String.

8.10.5 Field Documentation

8.10.5.1 ValueType JAULA::Value::Type_ [private]

Container for error code.

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

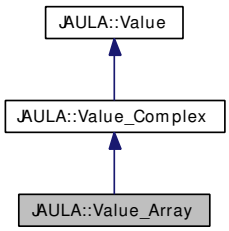
- jaula_value.h
- jaula_value.cc

8.11 JAULA::Value_Array Class Reference

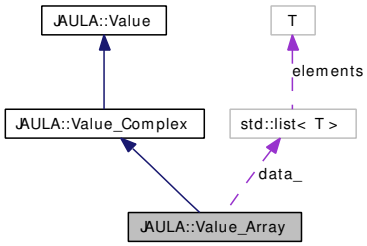
Class for handling array values.

`#include <jaula_value_array.h>`

Inheritance diagram for JAULA::Value_Array:



Collaboration diagram for JAULA::Value_Array:



Public Types

- typedef std::list< Value * > dataType

  Data type for value contents.

Public Member Functions

- void addItem (Value const &item)

  Appends one item to the array.

- virtual void clear (void)

  Empties the contents of an instance.

- virtual bool empty (void) const

  True if the instance is empty.

- dataType const & getData (void) const

  Retrieves the array of values contained by the instance.

- virtual void repr (std::ostream &ostr) const

  Represents the instance in a stream.

- virtual void set (Value const &origin) throw (Bad_Data_Type)

  Copies the contents of one instance into anothe.

- void set (dataType const &data)

  Establishes the contents of the instance.

- virtual size_t size (void) const

  Number of elements contained.

- Value_Array (dataType const &data)

  Data Constructor.

- Value_Array (void)

  Default Constructor.

- virtual ~Value_Array ()

  Destructor.

Private Attributes

- dataType data_

  Container to hold the value itself.

8.11.1 Detailed Description

Class for handling array values.

This class is a container for JSON arrays

Author:

Kombo Morongo <morongo666@gmail.com>

8.11.2 Member Typedef Documentation

8.11.2.1 typedef std::list<Value *> JAULA::Value_Array::dataType

Data type for value contents.

Description

Definition for the data container internal structure.

This data type defines a list of pointers to any kind of values (including arrays).

8.11.3 Constructor & Destructor Documentation

8.11.3.1 JAULA::Value_Array::Value_Array (void)

Default Constructor.

Description

The default constructor initializes an empty array.

8.11.3.2 JAULA::Value_Array::Value_Array (dataType const & *data*)

Data Constructor.

Parameters:

data Reference to the data to be copied

Description

This constructor generates a new instance by making a deep copy of the original data.

8.11.3.3 JAULA::Value_Array::~Value_Array () [virtual]

Destructor.

Note:

The destruction process releases all the memory associated to the data structure so any reference to the array or any element in it will be void.

8.11.4 Member Function Documentation

8.11.4.1 void JAULA::Value_Array::addItem (Value const & *item*)

Appends one item to the array.

Parameters:

item Item to be appended

Description

Appends a deep copy of the item value at the end of the array.

8.11.4.2 void JAULA::Value_Array::clear (void) [virtual]

Empties the contents of an instance.

Description

Erases the contained array.

Note:

As the array is destroyed by the process, any references to it or to its elements will be void.

Implements JAULA::Value_Complex.

8.11.4.3 bool JAULA::Value_Array::empty (void) const [virtual]

True if the instance is empty.

Returns:

true if there are no single elements contained in the array and false otherwise.

Implements JAULA::Value_Complex.

8.11.4.4 Value_Array::dataType const & JAULA::Value_Array::getData (void) const

Retrieves the array of values contained by the instance.

8.11.4.5 void JAULA::Value_Array::repr (std::ostream & *ostr*) const [virtual]

Represents the instance in a stream.

Parameters:

ostr Stream where the instance is to be represented.

Description

writes the instance content in JSON notation in a stream.

Implements JAULA::Value.

8.11.4.6 void JAULA::Value_Array::set (Value const & *origin*) throw (Bad_Data_Type) [virtual]

Copies the contents of one instance into anothe.

Parameters:

origin Reference to the value to be copied.

Exceptions:

Bad_Data_Type This exception is launched in case that origin and destination value types are different.

Note:

The destination array is destroyed during the asignment process so, any references to it or to its former elements will be void.

Reimplemented from JAULA::Value.

8.11.4.7 void JAULA::Value_Array::set (dataType const & *data*)

Establishes the contents of the instance.

Parameters:

data Array to assign to the instance

Note:

The destination array is destroyed during the asignment process so, any references to it or to its former elements will be void.

8.11.4.8 size_t JAULA::Value_Array::size (void) const [virtual]

Number of elements contained.

Returns:

the number of single elements contained by the array.

Implements JAULA::Value_Complex.

8.11.5 Field Documentation

8.11.5.1 dataType JAULA::Value_Array::data_ [private]

Container to hold the value itself.

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

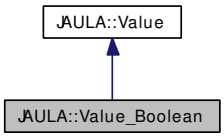
- jaula_value_array.h
- jaula_value_array.cc

8.12 JAULA::Value_Boolean Class Reference

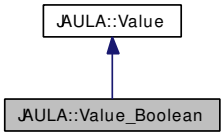
Class for handling boolean values.

`#include <jaula_value_boolean.h>`

Inheritance diagram for JAULA::Value_Boolean:



Collaboration diagram for JAULA::Value_Boolean:



Public Member Functions

- bool getData (void) const

  Retrieves the value contained by the instance.

- virtual void repr (std::ostream &ostr) const

  Represents the instance in a stream.

- virtual void set (Value const &origin) throw (Bad_Data_Type)

  Copies the contents of one instance into anothe.

- void set (bool data)

  Establishes the contents of the instance.

- Value_Boolean (bool data=false)

  Constructor.

- virtual ~Value_Boolean ()

  Destructor.

Private Attributes

- bool data_

  Container to hold the value itself.

8.12.1 Detailed Description

Class for handling boolean values.

This class is a container for JSON boolean values

Author:

Kombo Morongo <morongo666@gmail.com>

8.12.2 Constructor & Destructor Documentation

8.12.2.1 JAULA::Value_Boolean::Value_Boolean (bool *data* = `false`)

Constructor.

Parameters:

data Initial value to be hold by the conatiner

8.12.2.2 JAULA::Value_Boolean::~Value_Boolean () `[virtual]`

Destructor.

8.12.3 Member Function Documentation

8.12.3.1 bool JAULA::Value_Boolean::getData (void) const

Retrieves the value contained by the instance.

8.12.3.2 void JAULA::Value_Boolean::repr (std::ostream & *ostr*) const `[virtual]`

Represents the instance in a stream.

Parameters:

ostr Stream where the instance is to be represented.

Description

writes the instance content in JSON notation in a stream.

Implements JAULA::Value.

8.12.3.3 void JAULA::Value_Boolean::set (Value const & *origin*) throw (Bad_Data_Type) `[virtual]`

Copies the contents of one instance into anothe.

Parameters:

origin Reference to the value to be copied.

Exceptions:

Bad_Data_Type This exception is launched in case that origin and destination value types are different.

Reimplemented from JAULA::Value.

8.12.3.4 void JAULA::Value_Boolean::set (bool *data*)

Establishes the contents of the instance.

Parameters:

data Value to assign to the instance

8.12.4 Field Documentation

8.12.4.1 bool JAULA::Value_Boolean::data_ [private]

Container to hold the value itself.

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

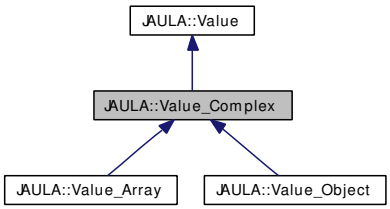
- jaula_value_boolean.h
- jaula_value_boolean.cc

8.13 JAULA::Value_Complex Class Reference

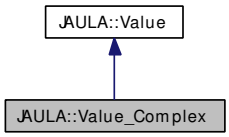
Base class for handling complex values.

`#include <jaula_value_complex.h>`

Inheritance diagram for JAULA::Value_Complex:



Collaboration diagram for JAULA::Value_Complex:



Public Member Functions

- virtual void clear (void)=0

  Empties the contents of an instance.

- virtual bool empty (void) const=0

  True if the instance is empty.

- virtual size_t size (void) const=0

  Number of elements contained.

- virtual ~Value_Complex ()

  Destructor.

Protected Member Functions

- Value_Complex (ValueType Type)

  Constructor.

8.13.1 Detailed Description

Base class for handling complex values.

This class defines an abstract base class for JSON complex values (arrays and objects)

Author:

Kombo Morongo <morongo666@gmail.com>

8.13.2 Constructor & Destructor Documentation

8.13.2.1 JAULA::Value_Complex::~Value_Complex () [virtual]

Destructor.

8.13.2.2 JAULA::Value_Complex::Value_Complex (ValueType *Type*) [protected]

Constructor.

Parameters:

Type Type of value to be contained by the instance

Description

This method construct a new instance by specifying its type.

Note:

A ValueType for the instance is immutable during all the life cycle, this is the only method that permits specifying the value type.

8.13.3 Member Function Documentation

8.13.3.1 virtual void JAULA::Value_Complex::clear (void) [pure virtual]

Empties the contents of an instance.

Description

Erases all the instance content.

Implemented in JAULA::Value_Array, and JAULA::Value_Object.

8.13.3.2 virtual bool JAULA::Value_Complex::empty (void) const [pure virtual]

True if the instance is empty.

Returns:

true if there are no single elements contained by the instance and false otherwise.

Implemented in JAULA::Value_Array, and JAULA::Value_Object.

8.13.3.3 virtual size_t JAULA::Value_Complex::size (void) const [pure virtual]

Number of elements contained.

Returns:

the number of single elements contained by the instance.

Implemented in JAULA::Value_Array, and JAULA::Value_Object.

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

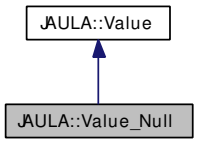
- jaula_value_complex.h
- jaula_value_complex.cc

8.14 JAULA::Value_Null Class Reference

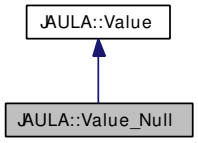
class for handling null values

`#include <jaula_value_null.h>`

Inheritance diagram for JAULA::Value_Null:



Collaboration diagram for JAULA::Value_Null:



Public Member Functions

- virtual void repr (std::ostream &ostr) const

  Represents the instance in a stream.

- virtual void set (Value const &origin) throw (Bad_Data_Type)

  Copies the contents of one instance into anothe.

- Value_Null (void)

  Constructor.

- virtual ~Value_Null ()

  Destructor.

8.14.1 Detailed Description

class for handling null values

This class is a container for JSON Null values

Author:

Kombo Morongo <morongo666@gmail.com>

8.14.2 Constructor & Destructor Documentation

8.14.2.1 JAULA::Value_Null::Value_Null (void)

Constructor.

8.14.2.2 JAULA::Value_Null::~Value_Null () [virtual]

Destructor.

8.14.3 Member Function Documentation

8.14.3.1 void JAULA::Value_Null::repr (std::ostream & *ostr*) const [virtual]

Represents the instance in a stream.

Parameters:

ostr Stream where the instance is to be represented.

Description

writes the instance content in JSON notation in a stream.

Implements JAULA::Value.

8.14.3.2 void JAULA::Value_Null::set (Value const & *origin*) throw (Bad_Data_Type) [virtual]

Copies the contents of one instance into anothe.

Parameters:

origin Reference to the value to be copied.

Exceptions:

Bad_Data_Type This exception is launched in case that origin and destination value types are different.

Reimplemented from JAULA::Value.

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

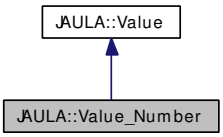
- jaula_value_null.h
- jaula_value_null.cc

8.15 JAULA::Value_Number Class Reference

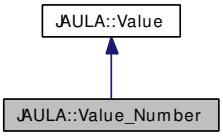
Class for handling numeric values.

`#include <jaula_value_number.h>`

Inheritance diagram for JAULA::Value_Number:



Collaboration diagram for JAULA::Value_Number:



Public Member Functions

- double getData (void) const

  Retrieves the value contained by the instance.

- virtual void repr (std::ostream &ostr) const

  Represents the instance in a stream.

- virtual void set (Value const &origin) throw (Bad_Data_Type)

  Copies the contents of one instance into anothe.

- void set (double data)

  Establishes the contents of the instance.

- Value_Number (double data=0)

  Constructor.

- virtual ~Value_Number ()

  Destructor.

Private Attributes

- double data_

  Container to hold the value itself.

8.15.1 Detailed Description

Class for handling numeric values.

This class is a container for JSON numeric values.

Author:

Kombo Morongo <morongo666@gmail.com>

8.15.2 Constructor & Destructor Documentation

8.15.2.1 JAULA::Value_Number::Value_Number (double *data* = 0)

Constructor.

Parameters:

data Initial value to be hold by the conatiner

8.15.2.2 JAULA::Value_Number::~Value_Number () [virtual]

Destructor.

8.15.3 Member Function Documentation

8.15.3.1 double JAULA::Value_Number::getData (void) const

Retrieves the value contained by the instance.

8.15.3.2 void JAULA::Value_Number::repr (std::ostream & *ostr*) const [virtual]

Represents the instance in a stream.

Parameters:

ostr Stream where the instance is to be represented.

Description

writes the instance content in JSON notation in a stream.

Implements JAULA::Value.

8.15.3.3 void JAULA::Value_Number::set (Value const & *origin*) throw (Bad_Data_Type) [virtual]

Copies the contents of one instance into anothe.

Parameters:

origin Reference to the value to be copied.

Exceptions:

Bad_Data_Type This exception is launched in case that origin and destination value types are different.

Reimplemented from JAULA::Value.

8.15.3.4 void JAULA::Value_Number::set (double *data*)

Establishes the contents of the instance.

Parameters:

data Value to assign to the instance

8.15.4 Field Documentation

8.15.4.1 double JAULA::Value_Number::data_ [private]

Container to hold the value itself.

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

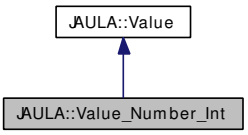
- jaula_value_number.h
- jaula_value_number.cc

8.16 JAULA::Value_Number_Int Class Reference

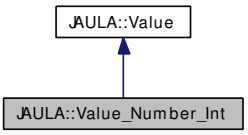
Class for handling numeric (int) values.

`#include <jaula_value_number_int.h>`

Inheritance diagram for JAULA::Value_Number_Int:



Collaboration diagram for JAULA::Value_Number_Int:



Public Member Functions

- long getData (void) const

  Retrieves the value contained by the instance.

- virtual void repr (std::ostream &ostr) const

  Represents the instance in a stream.

- virtual void set (Value const &origin) throw (Bad_Data_Type)

  Copies the contents of one instance into anothe.

- void set (long data)

  Establishes the contents of the instance.

- Value_Number_Int (long data=0)

  Constructor.

- virtual ~Value_Number_Int ()

  Destructor.

Private Attributes

- long data_

  Container to hold the value itself.

8.16.1 Detailed Description

Class for handling numeric (int) values.

This class is a container for JSON numeric values adapted to hold only integer values.

Author:

Kombo Morongo <morongo666@gmail.com>

8.16.2 Constructor & Destructor Documentation

8.16.2.1 JAULA::Value_Number_Int::Value_Number_Int (long *data* = 0)

Constructor.

Parameters:

data Initial value to be hold by the conatiner

8.16.2.2 JAULA::Value_Number_Int::~Value_Number_Int () [virtual]

Destructor.

8.16.3 Member Function Documentation

8.16.3.1 long JAULA::Value_Number_Int::getData (void) const

Retrieves the value contained by the instance.

8.16.3.2 void JAULA::Value_Number_Int::repr (std::ostream & *ostr*) const [virtual]

Represents the instance in a stream.

Parameters:

ostr Stream where the instance is to be represented.

Description

writes the instance content in JSON notation in a stream.

Implements JAULA::Value.

8.16.3.3 void JAULA::Value_Number_Int::set (Value const & *origin*) throw (Bad_Data_Type) [virtual]

Copies the contents of one instance into anothe.

Parameters:

origin Reference to the value to be copied.

Exceptions:

Bad_Data_Type This exception is launched in case that origin and destination value types are different.

Reimplemented from JAULA::Value.

8.16.3.4 void JAULA::Value_Number_Int::set (long *data*)

Establishes the contents of the instance.

Parameters:

data Value to assign to the instance

8.16.4 Field Documentation

8.16.4.1 long JAULA::Value_Number_Int::data_ [private]

Container to hold the value itself.

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

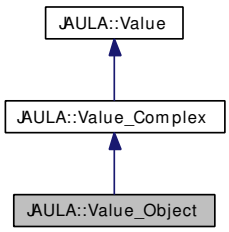
- jaula_value_number_int.h
- jaula_value_number_int.cc

8.17 JAULA::Value_Object Class Reference

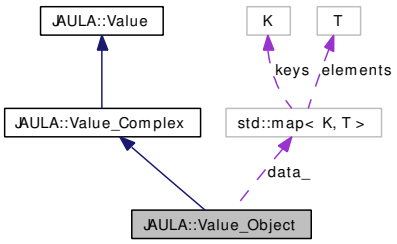
Class for handling object values.

`#include <jaula_value_object.h>`

Inheritance diagram for JAULA::Value_Object:



Collaboration diagram for JAULA::Value_Object:



Public Types

- typedef std::map< std::string, Value * > dataType

  Data type for value contents.

Public Member Functions

- virtual void clear (void)

  Empties the contents of an instance.

- virtual bool empty (void) const

  True if the instance is empty.

- dataType const & getData (void) const

  Retrieves the map of values contained by the instance.

- void insertItem (std::string const &name, Value const &item) throw (Name_Duplicated)

  Inserts one item to the object.

- virtual void repr (std::ostream &ostr) const

  Represents the instance in a stream.

- virtual void set (Value const &origin) throw (Bad_Data_Type)

  Copies the contents of one instance into anothe.

- void set (dataType const &data)

  Establishes the contents of the instance.

- virtual size_t size (void) const

  Number of elements contained.

- Value_Object (dataType const &data)

  Data Constructor.

- Value_Object (void)

  Default Constructor.

- virtual ~Value_Object ()

  Destructor.

Private Attributes

- dataType data_

  Container to hold the value itself.

8.17.1 Detailed Description

Class for handling object values.

This class is a container for JSON objects

Author:

Kombo Morongo <morongo666@gmail.com>

8.17.2 Member Typedef Documentation

8.17.2.1 typedef std::map<std::string, Value *> JAULA::Value_Object::dataType

Data type for value contents.

Description

Definition for the data container internal structure.

This data type defines a map of pointers to any kind of values (including objects) indexed by a property name that is always a string.

8.17.3 Constructor & Destructor Documentation

8.17.3.1 JAULA::Value_Object::Value_Object (void)

Default Constructor.

Description

The default constructor initializes an empty object.

8.17.3.2 JAULA::Value_Object::Value_Object (dataType const & *data*)

Data Constructor.

Parameters:

data Reference to the data to be copied

Description

This constructor generates a new instance by making a deep copy of the original data.

8.17.3.3 JAULA::Value_Object::~Value_Object () [virtual]

Destructor.

Note:

The destruction process releases all the memory associated to the data structure so any reference to the object or any element in it will be void.

8.17.4 Member Function Documentation

8.17.4.1 void JAULA::Value_Object::clear (void) [virtual]

Empties the contents of an instance.

Description

Erases the contained array.

Note:

As the array is destroyed by the process, any references to it or to its elements will be void.

Implements JAULA::Value_Complex.

8.17.4.2 bool JAULA::Value_Object::empty (void) const [virtual]

True if the instance is empty.

Returns:

true if there are no single elements contained in the object and false otherwise.

Implements JAULA::Value_Complex.

8.17.4.3 Value_Object::dataType const & JAULA::Value_Object::getData (void) const

Retrieves the map of values contained by the instance.

8.17.4.4 void JAULA::Value_Object::insertItem (std::string const & *name*, Value const & *item*) throw (Name_Duplicated)

Inserts one item to the object.

Parameters:

name Name for the property to insert

item Item value to be inserted

Exceptions:

Name_Duplicated This exception is thrown in case the object already has a property with the same name as the one to insert.

Description

Inserts a deep copy of the item value at the specified name fot the object.

8.17.4.5 void JAULA::Value_Object::repr (std::ostream & *ostr*) const [virtual]

Represents the instance in a stream.

Parameters:

ostr Stream where the instance is to be represented.

Description

writes the instance content in JSON notation in a stream.

Implements JAULA::Value.

8.17.4.6 void JAULA::Value_Object::set (Value const & *origin*) throw (Bad_Data_Type) [virtual]

Copies the contents of one instance into anothe.

Parameters:

origin Reference to the value to be copied.

Exceptions:

Bad_Data_Type This exception is launched in case that origin and destination value types are different.

Note:

The destination object is destroyed during the asignment process so, any references to it or to its former elements will be void.

Reimplemented from JAULA::Value.

8.17.4.7 void JAULA::Value_Object::set (dataType const & *data*)

Establishes the contents of the instance.

Parameters:

data map of values to assign to the instance

Note:

The destination object is destroyed during the asignment process so, any references to it or to its former elements will be void.

8.17.4.8 size_t JAULA::Value_Object::size (void) const [virtual]

Number of elements contained.

Returns:

the number of single elements contained by the object.

Implements JAULA::Value_Complex.

8.17.5 Field Documentation

8.17.5.1 dataType JAULA::Value_Object::data_ [private]

Container to hold the value itself.

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

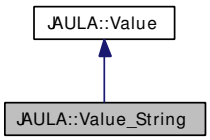
- jaula_value_object.h
- jaula_value_object.cc

8.18 JAULA::Value_String Class Reference

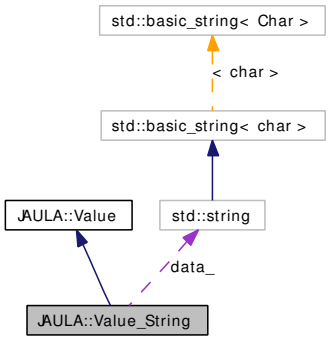
Class for handling numeric values.

`#include <jaula_value_string.h>`

Inheritance diagram for JAULA::Value_String:



Collaboration diagram for JAULA::Value_String:



Public Member Functions

- std::string const & getData (void) const

  Retrieves the value contained by the instance.

- virtual void repr (std::ostream &ostr) const

  Represents the instance in a stream.

- virtual void set (Value const &origin) throw (Bad_Data_Type)

  Copies the contents of one instance into anothe.

- void set (std::string const &data)

  Establishes the contents of the instance.

- Value_String (std::string const &data="")

  Constructor.

- virtual ~Value_String ()

  Destructor.

Static Public Member Functions

- static void stringRepr (std::ostream &ostr, std::string const &str)

  Represents a string in JSON Notation.

Private Attributes

- std::string data_

  Container to hold the value itself.

8.18.1 Detailed Description

Class for handling numeric values.

This class is a container for JSON numeric values.

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8.18.2 Constructor & Destructor Documentation

8.18.2.1 JAULA::Value_String::Value_String (std::string const & *data* = "")

Constructor.

Parameters:

data Initial value to be hold by the conatiner

8.18.2.2 JAULA::Value_String::~Value_String () [virtual]

Destructor.

8.18.3 Member Function Documentation

8.18.3.1 std::string const & JAULA::Value_String::getData (void) const

Retrieves the value contained by the instance.

8.18.3.2 void JAULA::Value_String::repr (std::ostream & *ostr*) const [virtual]

Represents the instance in a stream.

Parameters:

ostr Stream where the instance is to be represented.

Description

writes the instance content in JSON notation in a stream.

Implements JAULA::Value.

8.18.3.3 void JAULA::Value_String::set (Value const & *origin*) throw (Bad_Data_Type) [virtual]

Copies the contents of one instance into anothe.

Parameters:

origin Reference to the value to be copied.

Exceptions:

Bad_Data_Type This exception is launched in case that origin and destination value types are different.

Reimplemented from JAULA::Value.

8.18.3.4 void JAULA::Value_String::set (std::string const & *data*)

Establishes the contents of the instance.

Parameters:

data Value to assign to the instance

8.18.3.5 void JAULA::Value_String::stringRepr (std::ostream & *ostr*, std::string const & *str*) [static]

Represents a string in JSON Notation.

Parameters:

ostr stream where the representation is to be performed.

str String to represent

Description

Represents a string in JSON notation, surrounding it with quotes and changing all the non-printable symbols by its control codes or unicode value.

8.18.4 Field Documentation

8.18.4.1 std::string JAULA::Value_String::data_ [private]

Container to hold the value itself.

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

- jaula_value_string.h
- jaula_value_string.cc

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