JSON2Batch

0.2.1

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Chapter 1

JSON2Batch

This file is autogenerated. Changes will be overwritten

1.1 JSON2Batch

Todo Update README.md

Beschreibung: A simple tool to convert json to batch.

Version: 0.2.1

Authoren: Elena Schwarzbach, Max Rodler, Simon Blum, Sonia Sinaci

Documentation: `https://definitelynotsimon13.github.io/ProjectJsonToBat`

Aktueller Plan:

- Verantworlichkeiten zugewiesen
- "Sprint" bis ?

Verantwortlichkeiten:

- `CMake` &#8594 Simon
- `JsonParsing` &#8594 Elena und Sonia
- `Batch Creation` &#8594 Max
- `CLI` &#8594 Simon

Andere Arbeitspakete

- Error Handling
- Unit Tests
- Code Quality
- Documentation

Bezüglich Code Quality

- Kein using namespace

- Nur main im Global Namespace

Wichtige Commands

Branch wechseln

- git checkout -b NEUERBRANCH Pushen
- git push origin zum pullen
- git pull –prune

Kurze Doxygen Übersicht

Achtung: Die Leerzeichen zwischen @ und dem Wort dürfen nicht in den Code, sind nur da, damit Doxygen die nicht aufnimmt! /∗∗

- @ brief Kurze Beschreibung
- @ details Längere
- @ todo
- @ bug
- @ param PARAMETERNAME was der macht
- @ return was die funktion return
- @ throws ∗∗/

Chapter 2

Todo List

Member exceptions::FailedToOpenFileException::FailedToOpenFileException (const std::string &file)

Documentation

Member main (int argc, char ∗argv[])

Documentation

Refactoring

page Main Page

Update README.md

Member parsing::KeyValidator::getUnknownKeyLine (const std::string &filename, const std::string &wrongKey)

Documentation

Member parsing::KeyValidator::validateEntries (const std::string &filename, const std::vector< std::string > &entryKeys)

Documentation

Chapter 3

Topic Index

3.1 Topics

Here is a list of all topics with brief descriptions:

Chapter 4

Namespace Index

4.1 Namespace List

Here is a list of all namespaces with brief descriptions:

Chapter 5

Hierarchical Index

5.1 Class Hierarchy

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

Chapter 6

Class Index

6.1 Class List

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

Chapter 7

File Index

7.1 File List

Here is a list of all files with brief descriptions:

Chapter 8

Topic Documentation

8.1 StyleHelpers

Static variables to help with CLI styling.

Static variables to help with CLI styling.

A group of strings, that use escape sequences to easily style the command line interface on Unix systems. When compiling for Windows all of these strings will be empty, as escape sequences can't be used the same way.

Chapter 9

Namespace Documentation

9.1 cli Namespace Reference

Includes everything regarding the CLI.

Classes

- class CommandLineHandler

  Responsible for the Command Line Interface.

Variables

- static const struct option options [ ]

9.1.1 Detailed Description

Includes everything regarding the CLI.

This namespace includes all the code regarding the Command Line Interface. This includes the CommandLineHandler Class, the struct for the options and helpers for Styling.

See also

CommandLineHandler

options

StyleHelpers

9.1.2 Variable Documentation

9.1.2.1 options

```
const struct option cli::options[]  [static]
```

Initial value:

```
= {
    {"help", no_argument, nullptr, 'h'},
    {"version", no_argument, nullptr, 'v'},
    {"credits", no_argument, nullptr, 'c'},
    {"verbose", no_argument, nullptr, 0},
    {"outdir", required_argument, nullptr, 'o'},
    nullptr


}
```

Definition at line 112 of file CommandLineHandler.hpp.

9.2 exceptions Namespace Reference

Namespace used for customized exceptions.

Classes

- class CustomException

  Base class for all custom exceptions.
- class FailedToOpenFileException
- class FileExistsException

  Exception for an already exisiting outputfile.
- class InvalidKeyException

  Exception for invalid keys.
- class InvalidTypeException

  Exception for invalid types.
- class InvalidValueException

  Exception for an ivalid (usually empty) value field.
- class MissingKeyException

  Exception for missing keys within entries.
- class MissingTypeException

  Exception for missing types of entries.
- class ParsingException

  Exception for syntax errors within the json file.
- class UnreachableCodeException

  Exception for when the application reaches code it shouldn't reach.

9.2.1 Detailed Description

Namespace used for customized exceptions.

9.3 parsing Namespace Reference

The namespace containing everything relevant to parsing.

Classes

- class FileData

  This class contains all data from the json file.
- class JsonHandler

  This file reads all data from the json file.
- class KeyValidator

  Validates keys of a Json::Value object.

9.3.1 Detailed Description

The namespace containing everything relevant to parsing.

This namespace contains all relevant classes to parsing the json file and creating the batch output.

See also

JsonHandler

FileData

KeyValidator

BatchCreator

9.4 utilities Namespace Reference

Includes all utilities.

Classes

- class Utils

  Responsible for utility function.

9.4.1 Detailed Description

Includes all utilities.

This namespace includes the utility class with utility functions which can be used throughout the project.

See also

Utils

Chapter 10

Class Documentation

10.1 BatchCreator Class Reference

Erstellt Batch Datei.

`#include <BatchCreator.hpp>`

Public Member Functions

- BatchCreator (std::shared_ptr< parsing::FileData > fileData)
  Initialisiert BatchCreator.

Private Member Functions

- void createBatch ()
  Setzt batch Datei zusammen.
- void writeStart ()
  Anfang der Batch Datei.
- void writeHideShell ()
  Sichtbarkeit Konsole.
- void writeCommands ()
  Befehle ausführen.
- void writeEnvVariables ()
  Umgebungsvariablen setzten.
- void writePathVariables ()
  Pfade setzten.
- void writeApp ()
  Öffnet Anwednung falls gewünscht.
- void writeEnd ()
  Ende der Batch Datei.

Private Attributes

- std::ofstream batchFile
- std::shared_ptr< parsing::FileData > fileData

10.1.1 Detailed Description

Erstellt Batch Datei.

Wandelt Elemente aus JSON-Datei in Batch-Format um

See also

Definition at line 24 of file BatchCreator.hpp.

10.1.2 Constructor & Destructor Documentation

10.1.2.1 BatchCreator()

```
BatchCreator::BatchCreator (
            std::shared_ptr< parsing::FileData > fileData )
```

Initialisiert BatchCreator.

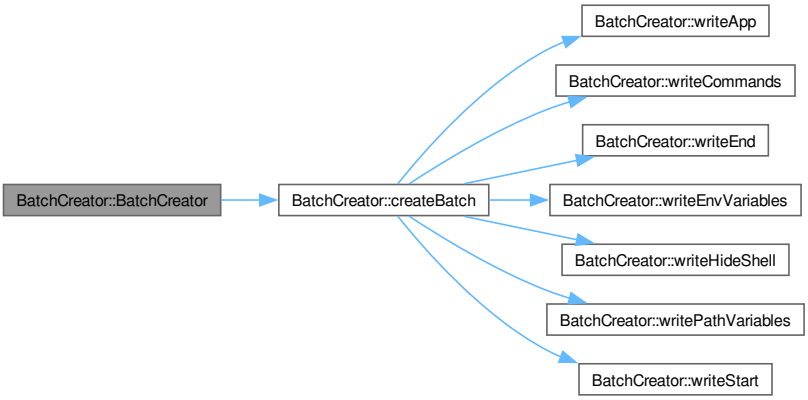
Parameters

filename	

Definition at line 16 of file BatchCreator.cpp.

References createBatch(), and fileData.

Here is the call graph for this function:



10.1.3 Member Function Documentation

10.1.3.1 createBatch()

```
void BatchCreator::createBatch ( )  [private]
```

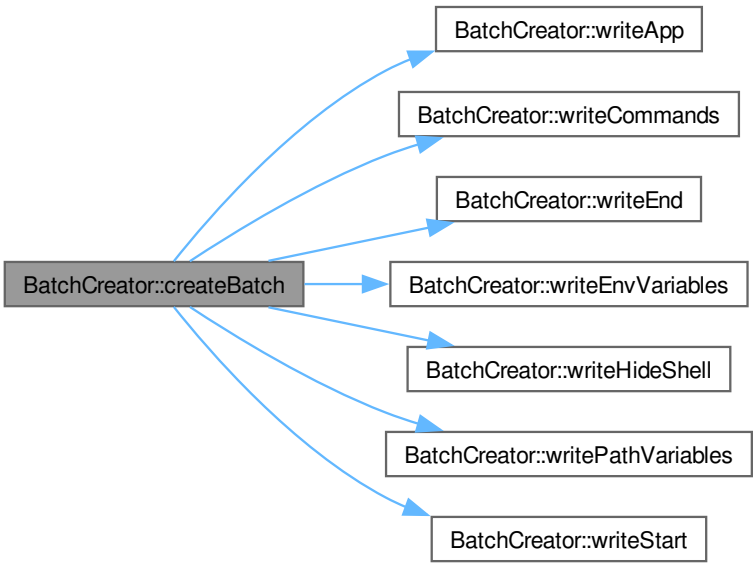
Setzt batch Datei zusammen.

Beinhaltet Aufrufe der einzelnen Komponenten der batch Datei

Definition at line 22 of file BatchCreator.cpp.

References batchFile, fileData, writeApp(), writeCommands(), writeEnd(), writeEnvVariables(), writeHideShell(), writePathVariables(), and writeStart().

Here is the call graph for this function:



Here is the caller graph for this function:

10.1.3.2 writeApp()

```
void BatchCreator::writeApp ( )  [private]
```

Öffnet Anwednung falls gewünscht.

Öffnet Anwedung, falls unter "application" gegeben Wird unter dem Namen aus "outputfile" gestartet

Definition at line 81 of file BatchCreator.cpp.

References batchFile, and fileData.

Here is the caller graph for this function:

10.1.3.3 writeCommands()

```
void BatchCreator::writeCommands ( )  [private]
```

Befehle ausführen.

Führt Befehle aus: Zu finden unter "EXE" als "command"

Definition at line 56 of file BatchCreator.cpp.

References batchFile, and fileData.

Here is the caller graph for this function:

10.1.3.4 writeEnd()

```
void BatchCreator::writeEnd ( )  [private]
```

Ende der Batch Datei.

Schreibt den teil der Batch Datei der immer gleich ist

- setzt ECHO OFF

Definition at line 94 of file BatchCreator.cpp.

References batchFile.

Here is the caller graph for this function:

10.1.3.5 writeEnvVariables()

```
void BatchCreator::writeEnvVariables ( )  [private]
```

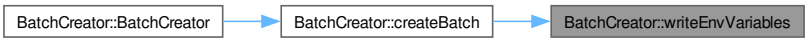
Umgebungsvariablen setzten.

Setzt Umgebungsvariablen aus "ENV" nach folgender Syntax: Eintrag unter "key" = Eintrag unter "value"

Definition at line 64 of file BatchCreator.cpp.

References batchFile, and fileData.

Here is the caller graph for this function:



10.1.3.6 writeHideShell()

```
void BatchCreator::writeHideShell ( )  [private]
```

Sichtbarkeit Konsole.

Zeigt bzw. versteckt Konsolenausgabe

Definition at line 45 of file BatchCreator.cpp.

References batchFile, and fileData.

Here is the caller graph for this function:

10.1.3.7 writePathVariables()

```
void BatchCreator::writePathVariables ( )  [private]
```

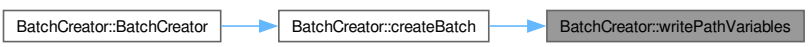
Pfade setzten.

Verknüpft die unter "PATH" angegebenen Pfade mit dem Systempfad Setzt Pfad

Definition at line 72 of file BatchCreator.cpp.

References batchFile, and fileData.

Here is the caller graph for this function:



10.1.3.8 writeStart()

```
void BatchCreator::writeStart ( )  [private]
```

Anfang der Batch Datei.

Schreibt den Teil der Batch Datei der immer gleich ist.

- setzt ECHO off
- startet cmd.exe

Definition at line 40 of file BatchCreator.cpp.

References batchFile.

Here is the caller graph for this function:

10.1.4 Member Data Documentation

10.1.4.1 batchFile

```
std::ofstream BatchCreator::batchFile  [private]
```

Definition at line 39 of file BatchCreator.hpp.

10.1.4.2 fileData

```
std::shared_ptr<parsing::FileData> BatchCreator::fileData  [private]
```

Definition at line 41 of file BatchCreator.hpp.

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

- src/include/BatchCreator.hpp
- src/sources/BatchCreator.cpp

10.2 cli::CommandLineHandler Class Reference

Responsible for the Command Line Interface.

```
#include <CommandLineHandler.hpp>
```

Public Member Functions

- CommandLineHandler ()=delete
  The Constructor of the CommandLineHandler Class.
- ~CommandLineHandler ()=delete
  The Destructor of the CommandLineHandler Class.

Static Public Member Functions

- static void printHelp ()
  Prints the help message.
- static void printVersion ()
  Prints the version message.
- static void printCredits ()
  Prints the credits message.
- static std::vector< std::string > parseArguments (int argc, char *argv[])
  Parses the Command Line Arguments.

10.2.1 Detailed Description

Responsible for the Command Line Interface.

This class is responsible for parsing the command line arguments, printing Help/Version/Credits messages and returning inputted files.

Author

Simon Blum

Date

2024-04-18

Version

0.1.5

See also

options

Definition at line 52 of file CommandLineHandler.hpp.

10.2.2 Constructor & Destructor Documentation

10.2.2.1 CommandLineHandler()

```
cli::CommandLineHandler::CommandLineHandler ( )  [delete]
```

The Constructor of the CommandLineHandler Class.

Note

As all functions are static it should not be used and as such is private.

10.2.2.2 ~CommandLineHandler()

```
cli::CommandLineHandler::~CommandLineHandler ( )  [delete]
```

The Destructor of the CommandLineHandler Class.

Note

As all functions are static it should not be used and as such is private.

10.2.3 Member Function Documentation

10.2.3.1 parseArguments()

```
std::vector< std::string > cli::CommandLineHandler::parseArguments (
            int argc,
            char * argv[] )  [static]
```

Parses the Command Line Arguments.

This function uses the "getopt.h" library to parse all options given and then returns all files which are given as arguments.

Parameters

argc	The number of arguments given
argv	The arguments given

Exceptions

std::logic_error	

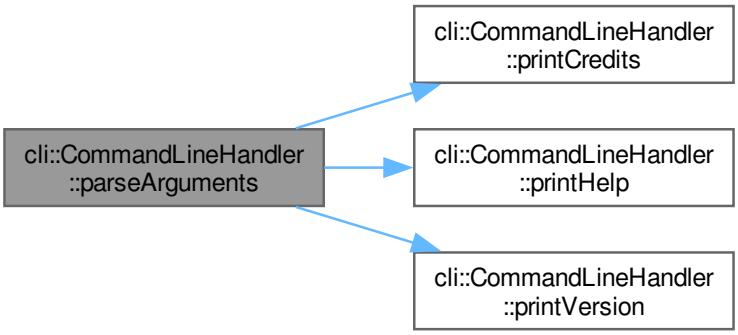
Returns

Returns a vector of strings containing all filenames.

Definition at line 66 of file CommandLineHandler.cpp.

References printCredits(), printHelp(), and printVersion().

Here is the call graph for this function:



Here is the caller graph for this function:

10.2.3.2 printCredits()

```
void cli::CommandLineHandler::printCredits ( )  [static]
```

Prints the credits message.

Prints the credits message when called.

Note

This function ends the application.

Definition at line 50 of file CommandLineHandler.cpp.

References AUTHORS, DESCRIPTION, HOMEPAGE_URL, MAJOR_VERSION, MINOR_VERSION, PATCH_VERSION, and PROJECT_NAME.

Here is the caller graph for this function:

10.2.3.3 printHelp()

```
void cli::CommandLineHandler::printHelp ( )  [static]
```

Prints the help message.

Prints the help message when called.

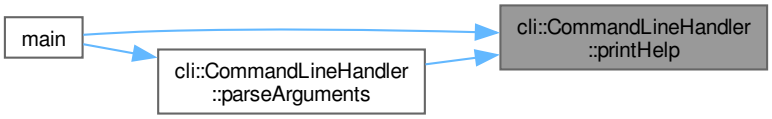
Note

This function ends the application.

Definition at line 22 of file CommandLineHandler.cpp.

References EXECUTABLE_NAME.

Here is the caller graph for this function:



10.2.3.4 printVersion()

```
void cli::CommandLineHandler::printVersion ( )  [static]
```

Prints the version message.

Prints the version message when called.

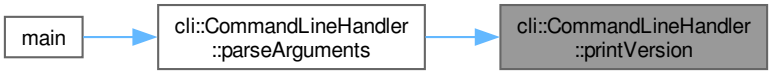
Note

This function ends the application.

Definition at line 44 of file CommandLineHandler.cpp.

References MAJOR_VERSION, MINOR_VERSION, PATCH_VERSION, and PROJECT_NAME.

Here is the caller graph for this function:



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

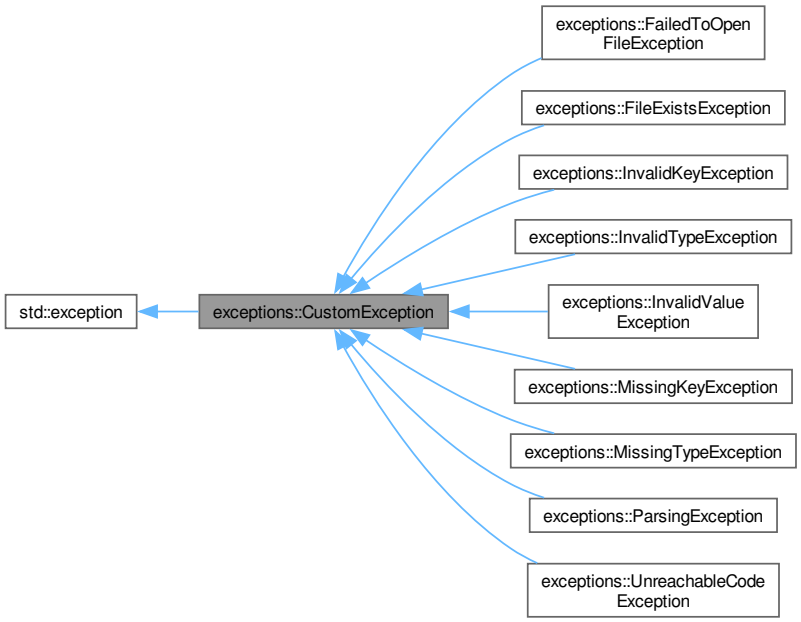
- src/include/CommandLineHandler.hpp
- src/sources/CommandLineHandler.cpp

10.3 exceptions::CustomException Class Reference

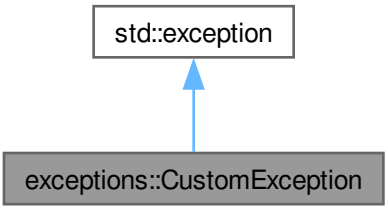
Base class for all custom exceptions.

`#include <Exceptions.hpp>`

Inheritance diagram for exceptions::CustomException:



Collaboration diagram for exceptions::CustomException:



Public Member Functions

- const char * what () const noexcept override

10.3.1 Detailed Description

Base class for all custom exceptions.

This class is the base class which is inherited by all custom exceptions. It can be used to catch all exceptions that are thrown by us.

See also

std::exception

Definition at line 30 of file Exceptions.hpp.

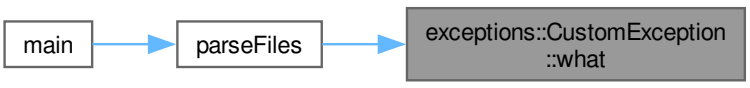
10.3.2 Member Function Documentation

10.3.2.1 what()

```
const char * exceptions::CustomException::what ( ) const  [inline], [override], [noexcept]
```

Definition at line 32 of file Exceptions.hpp.

Here is the caller graph for this function:



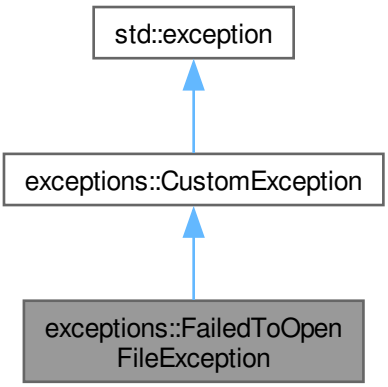
The documentation for this class was generated from the following file:

- src/include/Exceptions.hpp

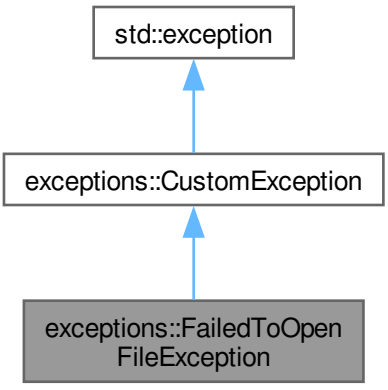
10.4 exceptions::FailedToOpenFileException Class Reference

`#include <Exceptions.hpp>`

Inheritance diagram for exceptions::FailedToOpenFileException:



Collaboration diagram for exceptions::FailedToOpenFileException:



Public Member Functions

- FailedToOpenFileException (const std::string &file)
- const char * what () const noexcept override

Public Member Functions inherited from exceptions::CustomException

- const char * what () const noexcept override

Private Attributes

- std::string message

10.4.1 Detailed Description

Definition at line 245 of file Exceptions.hpp.

10.4.2 Constructor & Destructor Documentation

10.4.2.1 FailedToOpenFileException()

```
exceptions::FailedToOpenFileException::FailedToOpenFileException (
            const std::string & file )  [inline], [explicit]
```

Todo Documentation

Definition at line 251 of file Exceptions.hpp.

References message.

10.4.3 Member Function Documentation

10.4.3.1 what()

```
const char * exceptions::FailedToOpenFileException::what ( ) const  [inline], [override], [noexcept]
```

Definition at line 255 of file Exceptions.hpp.

References message.

10.4.4 Member Data Documentation

10.4.4.1 message

```
std::string exceptions::FailedToOpenFileException::message  [private]
```

Definition at line 247 of file Exceptions.hpp.

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

- src/include/Exceptions.hpp

10.5 parsing::FileData Class Reference

This class contains all data from the json file.

`#include <FileData.hpp>`

Public Member Functions

- void setOutputFile (std::string &newOutputfile)
  Setter for this->outputfile.
- void setHideShell (bool newHideShell)
  Setter for this->hideshell.
- void setApplication (const std::string &newApplication)
  Setter for this->application.
- void addCommand (const std::string &command)
  Adds a given command to this->commands.
- void addEnvironmentVariable (const std::string &name, const std::string &value)
  Adds a given tuple to this->environmentVariables.
- void addPathValue (const std::string &pathValue)
  Add's a given value to this->pathValues.
- const std::string & getOutputFile () const
  Getter for this->outputfile.
- bool getHideShell () const
  Getter for this->hideShell.
- const std::optional< std::string > & getApplication () const
  Getter for this->application.
- const std::vector< std::string > & getCommands () const
  Getter for this->commands.
- const std::vector< std::tuple< std::string, std::string > > & getEnvironmentVariables () const
  Getter for this->environmentVariables.
- const std::vector< std::string > & getPathValues () const
  Getter for this->pathValues.

Private Attributes

- std::string outputfile
- bool hideShell
- std::optional< std::string > application
- std::vector< std::string > commands
- std::vector< std::tuple< std::string, std::string > > environmentVariables
- std::vector< std::string > pathValues

10.5.1 Detailed Description

This class contains all data from the json file.

The data from the json file is parsed by the JsonHandler and then assigned to the attributes of an instance of this class. This class also handles a part of the error handling.

Definition at line 30 of file FileData.hpp.

10.5.2 Member Function Documentation

10.5.2.1 addCommand()

```
void parsing::FileData::addCommand (
            const std::string & command )
```

Adds a given command to this->commands.

Makes sure, that the given command value is not empty and then add's it to the commands attribute.

Parameters

command	The command to be added

Exceptions

exceptions::InvalidValueException	

Definition at line 55 of file FileData.cpp.

References commands.

10.5.2.2 addEnvironmentVariable()

```
void parsing::FileData::addEnvironmentVariable (
            const std::string & name,
            const std::string & value )
```

Adds a given tuple to this->environmentVariables.

Makes sure that neither the key nor the value is empty and then adds a tuple with both values to the environment↩ Variables attribute

Parameters

name	The name of the env variable
value	The value of the env variable

Exceptions

exceptions::InvalidValueException	

Definition at line 66 of file FileData.cpp.

References environmentVariables.

10.5.2.3 addPathValue()

```
void parsing::FileData::addPathValue (
```

```
const std::string & pathValue )
```

Add's a given value to this->pathValues.

Makes sure that the given value is not empty and then assigns it to the given pathValues attribute

Parameters

pathValue	The value to be added

Exceptions

exceptions::InvalidValueException	

Definition at line 83 of file FileData.cpp.

References pathValues.

10.5.2.4 getApplication()

```
const std::optional< std::string > & parsing::FileData::getApplication ( ) const  [inline]
```

Getter for this->application.

Returns

The assigned application

Definition at line 120 of file FileData.hpp.

References application.

10.5.2.5 getCommands()

```
const std::vector< std::string > & parsing::FileData::getCommands ( ) const  [inline]
```

Getter for this->commands.

Returns

The vector of assigned commands

Definition at line 128 of file FileData.hpp.

References commands.

10.5.2.6 getEnvironmentVariables()

```
const std::vector< std::tuple< std::string, std::string > > & parsing::FileData::getEnvironment↩
Variables ( ) const  [inline]
```

Getter for this->environmentVariables.

Returns

The vector of assigned env variables

Definition at line 137 of file FileData.hpp.

References environmentVariables.

10.5.2.7 getHideShell()

```
bool parsing::FileData::getHideShell ( ) const  [inline]
```

Getter for this->hideShell.

Returns

The assigned value for hideshell

Definition at line 112 of file FileData.hpp.

References hideShell.

10.5.2.8 getOutputFile()

```
const std::string & parsing::FileData::getOutputFile ( ) const  [inline]
```

Getter for this->outputfile.

Returns

The assigned outputfile

Definition at line 104 of file FileData.hpp.

References outputfile.

10.5.2.9 getPathValues()

```
const std::vector< std::string > & parsing::FileData::getPathValues ( ) const  [inline]
```

Getter for this->pathValues.

Returns

The vector of assigned pathValues

Definition at line 145 of file FileData.hpp.

References pathValues.

10.5.2.10 setApplication()

```
void parsing::FileData::setApplication (
            const std::string & newApplication )
```

Setter for this->application.

Set's the application attribute. Return's if the given string is empty.

Parameters

newApplication	THe application to be set

Definition at line 44 of file FileData.cpp.

References application.

10.5.2.11 setHideShell()

```
void parsing::FileData::setHideShell (
            bool newHideShell )  [inline]
```

Setter for this->hideshell.

Parameters

newHideShell	The hideshell value to be set

Definition at line 48 of file FileData.hpp.

References hideShell.

10.5.2.12 setOutputFile()

```
void parsing::FileData::setOutputFile (
            std::string & newOutputfile )
```

Setter for this->outputfile.

Checks that neither the given string is empty, nor that the outputfile is already set and then assigns the newOutputfile to the instance.

Parameters

newOutputfile	The outputfile to be set

Exceptions

exceptions::InvalidValueException	

Definition at line 17 of file FileData.cpp.

References outputfile.

10.5.3 Member Data Documentation

10.5.3.1 application

```
std::optional<std::string> parsing::FileData::application  [private]
```

Definition at line 152 of file FileData.hpp.

10.5.3.2 commands

```
std::vector<std::string> parsing::FileData::commands  [private]
```

Definition at line 153 of file FileData.hpp.

10.5.3.3 environmentVariables

```
std::vector<std::tuple<std::string, std::string> > parsing::FileData::environmentVariables
[private]
```

Definition at line 154 of file FileData.hpp.

10.5.3.4 hideShell

```
bool parsing::FileData::hideShell  [private]
```

Definition at line 151 of file FileData.hpp.

10.5.3.5 outputfile

```
std::string parsing::FileData::outputfile  [private]
```

Definition at line 150 of file FileData.hpp.

10.5.3.6 pathValues

```
std::vector<std::string> parsing::FileData::pathValues  [private]
```

Definition at line 155 of file FileData.hpp.

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

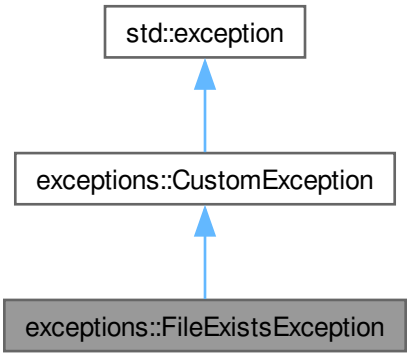
- src/include/FileData.hpp
- src/sources/FileData.cpp

10.6 exceptions::FileExistsException Class Reference

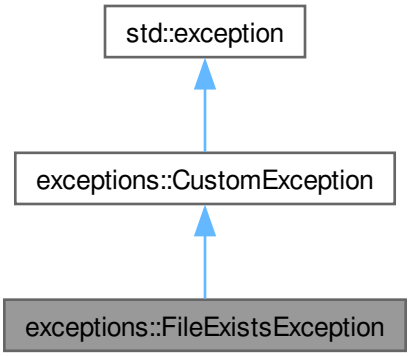
Exception for an already exisiting outputfile.

`#include <Exceptions.hpp>`

Inheritance diagram for exceptions::FileExistsException:



Collaboration diagram for exceptions::FileExistsException:



Public Member Functions

- FileExistsException (const std::string &file)
- const char * what () const noexcept override

Public Member Functions inherited from exceptions::CustomException

- const char * what () const noexcept override

Private Attributes

- const std::string file
- std::string message

10.6.1 Detailed Description

Exception for an already exisiting outputfile.

Definition at line 69 of file Exceptions.hpp.

10.6.2 Constructor & Destructor Documentation

10.6.2.1 FileExistsException()

```
exceptions::FileExistsException::FileExistsException (
            const std::string & file )  [inline], [explicit]
```

Note

I planned to use std::format, however it seems that the required Compiler Version is not yet available in the stable Ubuntu Repo!

Definition at line 75 of file Exceptions.hpp.

References file, and message.

10.6.3 Member Function Documentation

10.6.3.1 what()

```
const char * exceptions::FileExistsException::what ( ) const  [inline], [override], [noexcept]
```

Definition at line 87 of file Exceptions.hpp.

References message.

10.6.4 Member Data Documentation

10.6.4.1 file

```
const std::string exceptions::FileExistsException::file  [private]
```

Definition at line 71 of file Exceptions.hpp.

10.6.4.2 message

```
std::string exceptions::FileExistsException::message  [private]
```

Definition at line 72 of file Exceptions.hpp.

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

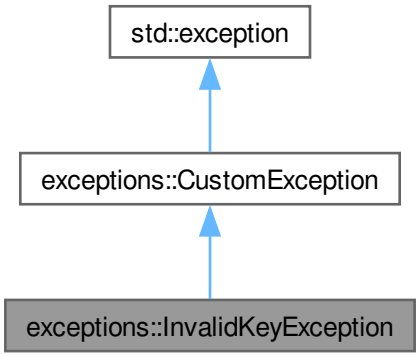
- src/include/Exceptions.hpp

10.7 exceptions::InvalidKeyException Class Reference

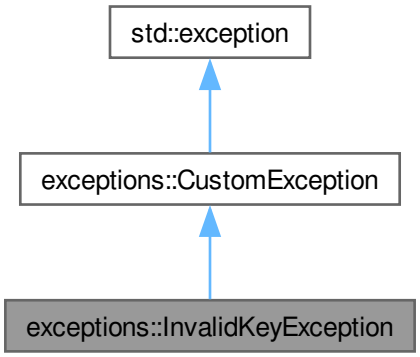
Exception for invalid keys.

```
#include <Exceptions.hpp>
```

Inheritance diagram for exceptions::InvalidKeyException:



Collaboration diagram for exceptions::InvalidKeyException:



Public Member Functions

- InvalidKeyException (const std::vector< std::tuple< int, std::string > > &keys)
- const char * what () const noexcept override

Public Member Functions inherited from exceptions::CustomException

- const char * what () const noexcept override

Private Attributes

- std::string message = "Invalid key found!"

10.7.1 Detailed Description

Exception for invalid keys.

This exception is thrown when a key is found within the json file, that is not part of the valid keys. It will also display the name and the line of the invalid key.

See also

parsing::KeyValidator::validKeys

parsing::KeyValidator::validEntryKeys

Definition at line 130 of file Exceptions.hpp.

10.7.2 Constructor & Destructor Documentation

10.7.2.1 InvalidKeyException()

```
exceptions::InvalidKeyException::InvalidKeyException (
            const std::vector< std::tuple< int, std::string > > & keys )  [inline], [explicit]
```

Definition at line 135 of file Exceptions.hpp.

References message.

10.7.3 Member Function Documentation

10.7.3.1 what()

```
const char * exceptions::InvalidKeyException::what ( ) const  [inline], [override], [noexcept]
```

Definition at line 142 of file Exceptions.hpp.

References message.

10.7.4 Member Data Documentation

10.7.4.1 message

```
std::string exceptions::InvalidKeyException::message = "Invalid key found!"  [private]
```

Definition at line 132 of file Exceptions.hpp.

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

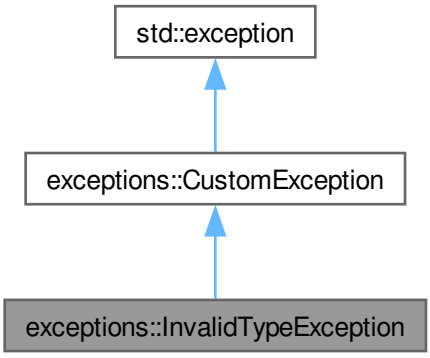
- src/include/Exceptions.hpp

10.8 exceptions::InvalidTypeException Class Reference

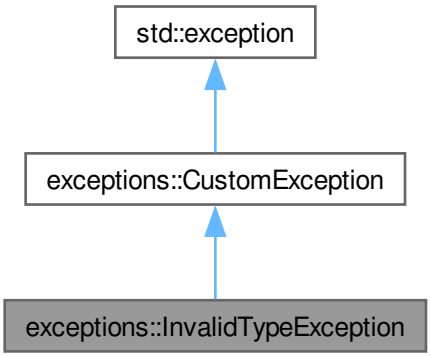
Exception for invalid types.

`#include <Exceptions.hpp>`

Inheritance diagram for exceptions::InvalidTypeException:



Collaboration diagram for exceptions::InvalidTypeException:



Public Member Functions

- InvalidTypeException (const std::string &type, int line)
- const char * what () const noexcept override

Public Member Functions inherited from exceptions::CustomException

- const char * what () const noexcept override

Private Attributes

- const std::string type
- std::string message

10.8.1 Detailed Description

Exception for invalid types.

This exception is thrown when the value of the "type" field within the entries is invalid (not "EXE", "PATH", "ENV"). It also prints the type and the line of the invalid type.

Definition at line 155 of file Exceptions.hpp.

10.8.2 Constructor & Destructor Documentation

10.8.2.1 InvalidTypeException()

```
exceptions::InvalidTypeException::InvalidTypeException (
            const std::string & type,
            int line )  [inline]
```

Note

I planned to use std::format, however it seems that the required Compiler Version is not yet available in the stable Ubuntu Repo!

Definition at line 161 of file Exceptions.hpp.

References message, and type.

10.8.3 Member Function Documentation

10.8.3.1 what()

```
const char * exceptions::InvalidTypeException::what ( ) const  [inline], [override], [noexcept]
```

Definition at line 172 of file Exceptions.hpp.

References message.

10.8.4 Member Data Documentation

10.8.4.1 message

```
std::string exceptions::InvalidTypeException::message  [private]
```

Definition at line 158 of file Exceptions.hpp.

10.8.4.2 type

```
const std::string exceptions::InvalidTypeException::type  [private]
```

Definition at line 157 of file Exceptions.hpp.

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

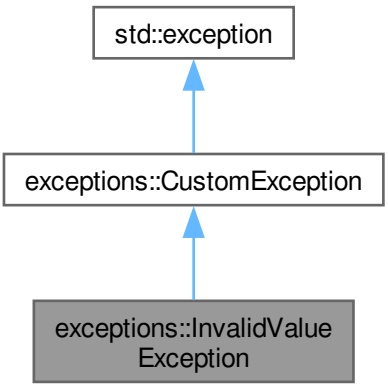
- src/include/Exceptions.hpp

10.9 exceptions::InvalidValueException Class Reference

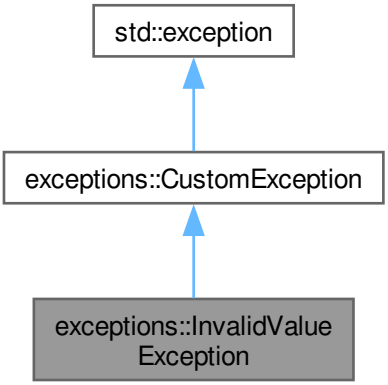
Exception for an ivalid (usually empty) value field.

```
#include <Exceptions.hpp>
```

Inheritance diagram for exceptions::InvalidValueException:



Collaboration diagram for exceptions::InvalidValueException:



Public Member Functions

- InvalidValueException (const std::string &key, const std::string &issue)
- const char * what () const noexcept override

Public Member Functions inherited from exceptions::CustomException

- const char * what () const noexcept override

Private Attributes

- const std::string key
- std::string message

10.9.1 Detailed Description

Exception for an ivalid (usually empty) value field.

Definition at line 96 of file Exceptions.hpp.

10.9.2 Constructor & Destructor Documentation

10.9.2.1 InvalidValueException()

```
exceptions::InvalidValueException::InvalidValueException (
            const std::string & key,
            const std::string & issue )  [inline]
```

Note

I planned to use std::format, however it seems that the required Compiler Version is not yet available in the stable Ubuntu Repo!

Definition at line 102 of file Exceptions.hpp.

References key, and message.

10.9.3 Member Function Documentation

10.9.3.1 what()

```
const char * exceptions::InvalidValueException::what ( ) const  [inline], [override], [noexcept]
```

Definition at line 114 of file Exceptions.hpp.

References message.

10.9.4 Member Data Documentation

10.9.4.1 key

```
const std::string exceptions::InvalidValueException::key  [private]
```

Definition at line 98 of file Exceptions.hpp.

10.9.4.2 message

```
std::string exceptions::InvalidValueException::message  [private]
```

Definition at line 99 of file Exceptions.hpp.

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

- src/include/Exceptions.hpp

10.10 parsing::JsonHandler Class Reference

This file reads all data from the json file.

```
#include <JsonHandler.hpp>
```

Public Member Functions

- JsonHandler ()
  Constructor without arguments.
- JsonHandler (const std::string &filename)
  The constructor.
- std::shared_ptr< FileData > getFileData ()
  Retrieve the data from the json file.

Private Member Functions

- void assignOutputFile () const
  Assigns the outputfile to this->data.
- void assignHideShell () const
  Assigns the hideshell value to this->data.
- void assignApplication () const
  Assigns application to this->data.
- void assignEntries () const
  Assigns entries to this->data.
- void assignCommand (const Json::Value &entry) const
  Assigns an command to this->data.
- void assignEnvironmentVariable (const Json::Value &entry) const
  Assigns an environmentVariable to this->data.
- void assignPathValue (const Json::Value &entry) const
  Assigns a path value to this->data.
- std::shared_ptr< FileData > createFileData ()
  Creates the FileData instance.

Static Private Member Functions

- static std::shared_ptr< Json::Value > parseFile (const std::string &filename)
  Parses the given json file.

Private Attributes

- std::shared_ptr< Json::Value > root
- std::shared_ptr< FileData > data

10.10.1 Detailed Description

This file reads all data from the json file.

This file uses the jsoncpp library to parse all data from a json file, validate it to some degree.

See also

https://github.com/open-source-parsers/jsoncpp

Definition at line 45 of file JsonHandler.hpp.

10.10.2 Constructor & Destructor Documentation

10.10.2.1 JsonHandler() [1/2]

```
parsing::JsonHandler::JsonHandler ( )  [inline]
```

Constructor without arguments.

This constructor can be used to initialise an instance in an outer scope and then assign it values from an inner scope.

Definition at line 53 of file JsonHandler.hpp.

10.10.2.2 JsonHandler() [2/2]

```
parsing::JsonHandler::JsonHandler (
            const std::string & filename )  [explicit]
```

The constructor.

This constructor calls this->parseFile() when called.

Parameters

filename	Name of the json file

Definition at line 20 of file JsonHandler.cpp.

References parseFile(), and root.

Here is the call graph for this function:

10.10.3 Member Function Documentation

10.10.3.1 assignApplication()

```
void parsing::JsonHandler::assignApplication ( ) const  [private]
```

Assigns application to this->data.

Retrieves the value of the application key from Json::Value this->root and defaults to an empty string.

Definition at line 81 of file JsonHandler.cpp.

References data, and root.

Here is the caller graph for this function:

10.10.3.2 assignCommand()

```
void parsing::JsonHandler::assignCommand (
            const Json::Value & entry ) const  [private]
```

Assigns an command to this->data.

Parameters

entry	The entry with the command

Definition at line 111 of file JsonHandler.cpp.

References data.

Here is the caller graph for this function:

10.10.3.3 assignEntries()

```
void parsing::JsonHandler::assignEntries ( ) const  [private]
```

Assigns entries to this->data.

Goes through each of the entries from Json::Value this->root and calls the relevant method depending on it's type. All "type" keys should be valid by this point.

Parameters

entry	Json::Value containing an array with entries

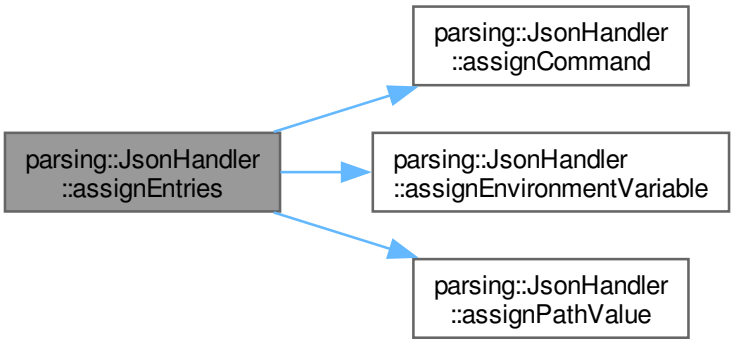
Exceptions

exceptions::UnreachableCodeException	

Definition at line 87 of file JsonHandler.cpp.

References assignCommand(), assignEnvironmentVariable(), assignPathValue(), and root.

Here is the call graph for this function:



Here is the caller graph for this function:

10.10.3.4 assignEnvironmentVariable()

```
void parsing::JsonHandler::assignEnvironmentVariable (
            const Json::Value & entry ) const  [private]
```

Assigns an environmentVariable to this->data.

Parameters

entry	The entry with the environmentVariable

Definition at line 117 of file JsonHandler.cpp.

References data.

Here is the caller graph for this function:

10.10.3.5 assignHideShell()

```
void parsing::JsonHandler::assignHideShell ( ) const  [private]
```

Assigns the hideshell value to this->data.

Retrieves the value of the hideshell key from Json::Value this->root and defaults to negative.

Definition at line 74 of file JsonHandler.cpp.

References data, and root.

Here is the caller graph for this function:

10.10.3.6 assignOutputFile()

```
void parsing::JsonHandler::assignOutputFile ( ) const  [private]
```

Assigns the outputfile to this->data.

Retrieves the outputfile from Json::Value this->root and makes sure, that the file doesn't already exist.

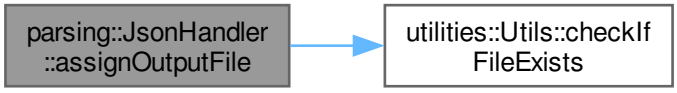
Exceptions

exceptions::FileExistsException	

Definition at line 63 of file JsonHandler.cpp.

References utilities::Utils::checkIfFileExists(), data, and root.

Here is the call graph for this function:



Here is the caller graph for this function:

10.10.3.7 assignPathValue()

```
void parsing::JsonHandler::assignPathValue (
            const Json::Value & entry ) const  [private]
```

Assigns a path value to this->data.

Parameters

entry	The entry with the path value

Definition at line 124 of file JsonHandler.cpp.

References data.

Here is the caller graph for this function:

10.10.3.8 createFileData()

```
std::shared_ptr< FileData > parsing::JsonHandler::createFileData ( )  [private]
```

Creates the FileData instance.

Instantiates the FileData instance, calls all nessecary functions and returns a shared pointer to it.

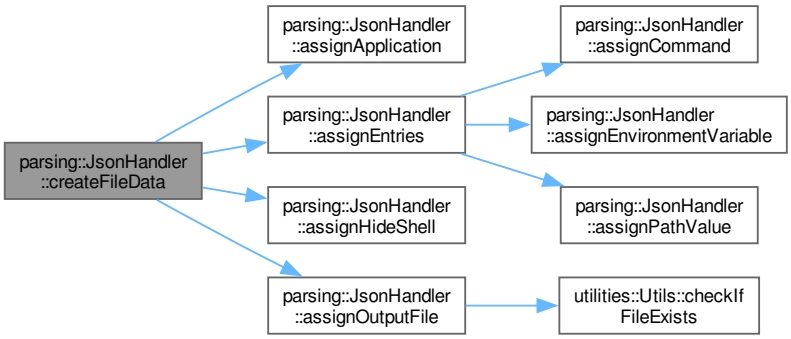
Returns

Pointer to the created instance of FileData

Definition at line 53 of file JsonHandler.cpp.

References assignApplication(), assignEntries(), assignHideShell(), assignOutputFile(), and data.

Here is the call graph for this function:



Here is the caller graph for this function:

10.10.3.9 getFileData()

```
std::shared_ptr< FileData > parsing::JsonHandler::getFileData ( )
```

Retrieve the data from the json file.

This method calls this->createFileData() needed to retrieve the values from the Json::Value this->root and then returns a shared pointer to the created FileData object.

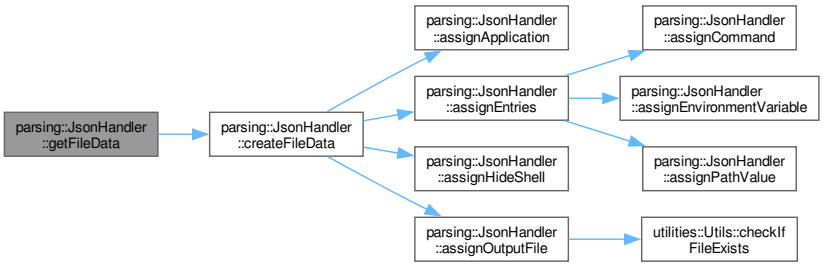
Returns

Pointer to the FileData Object with the parsed data from json

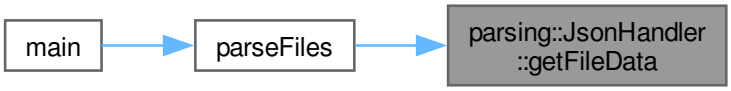
Definition at line 48 of file JsonHandler.cpp.

References createFileData().

Here is the call graph for this function:



Here is the caller graph for this function:



10.10.3.10 parseFile()

```
std::shared_ptr< Json::Value > parsing::JsonHandler::parseFile (
            const std::string & filename )  [static], [private]
```

Parses the given json file.

This method first creates a new Json::Value instance and then tries to parse the given json file. It then validates the keys of the instance using the KeyValidator class.

Parameters

filename	The name of the file wich should be parsed

Returns

A shared pointer to the Json::Value instance

See also

KeyValidator::validateKeys()

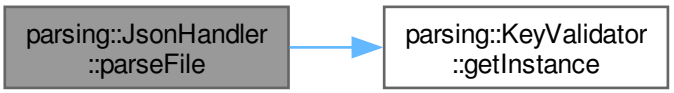
Exceptions

exceptions::ParsingException	
exceptions::InvalidKeyException	

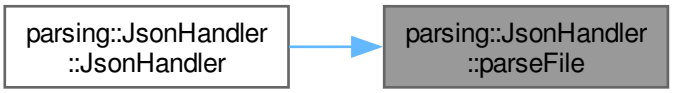
Definition at line 25 of file JsonHandler.cpp.

References parsing::KeyValidator::getInstance().

Here is the call graph for this function:



Here is the caller graph for this function:



10.10.4 Member Data Documentation

10.10.4.1 data

```
std::shared_ptr<FileData> parsing::JsonHandler::data  [private]
```

Definition at line 153 of file JsonHandler.hpp.

10.10.4.2 root

```
std::shared_ptr<Json::Value> parsing::JsonHandler::root  [private]
```

Definition at line 152 of file JsonHandler.hpp.

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

- src/include/JsonHandler.hpp
- src/sources/JsonHandler.cpp

10.11 parsing::KeyValidator Class Reference

Validates keys of a Json::Value object.

```
#include <KeyValidator.hpp>
```

Public Member Functions

- std::vector< std::tuple< int, std::string > > validateKeys (const Json::Value &root, const std::string &filename)

  Validate keys off a Json::Value object.

Static Public Member Functions

- static KeyValidator & getInstance ()

  Get the instance of this class.

Private Member Functions

- std::vector< std::tuple< int, std::string > > getWrongKeys (const Json::Value &root, const std::string &filename)

  Retrieve the wrong keys from a Json::Value object.
- std::vector< std::tuple< int, std::string > > validateEntries (const std::string &filename, const std::vector< std::string > &entryKeys)

  Validates that an entries 'type' key is valid.

Static Private Member Functions

- static void validateTypes (const std::string &filename, const Json::Value &entry, std::vector< std::string > &entryKeys)

  Validates types from the entries array.
- static std::optional< int > getUnknownKeyLine (const std::string &filename, const std::string &wrongKey)

Private Attributes

- std::vector< std::string > validKeys
- std::vector< std::string > validEntryKeys

10.11.1 Detailed Description

Validates keys of a Json::Value object.

This class is singleton. That way when multiple files are parsed with the application, the validKeys and validEntry↩ Keys field only have to be allocated once.

Definition at line 26 of file KeyValidator.hpp.

10.11.2 Member Function Documentation

10.11.2.1 getInstance()

```
KeyValidator & parsing::KeyValidator::getInstance ( )  [static]
```

Get the instance of this class.

Returns

Reference to the instance of this class

Definition at line 19 of file KeyValidator.cpp.

Here is the caller graph for this function:

10.11.2.2 getUnknownKeyLine()

```
std::optional< int > parsing::KeyValidator::getUnknownKeyLine (
            const std::string & filename,
            const std::string & wrongKey )  [static], [private]
```

Parameters

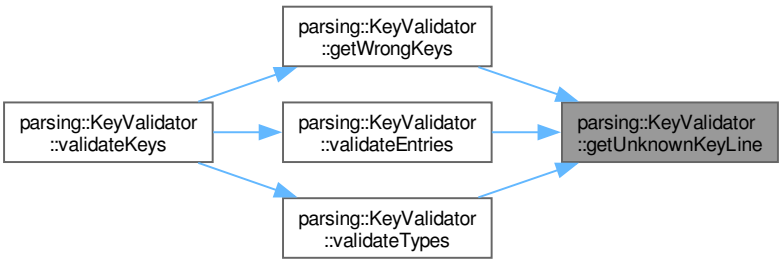
filename	
wrongKey	

Returns

Todo Documentation

Definition at line 151 of file KeyValidator.cpp.

Here is the caller graph for this function:



10.11.2.3 getWrongKeys()

```
std::vector< std::tuple< int, std::string > > parsing::KeyValidator::getWrongKeys (
            const Json::Value & root,
            const std::string & filename )  [private]
```

Retrieve the wrong keys from a Json::Value object.

This method goes through each key of the Json::Value object and makes sure it's valid.

Parameters

root	The Json::Value object to be validated.
filename	The filename from which 'root' is from.

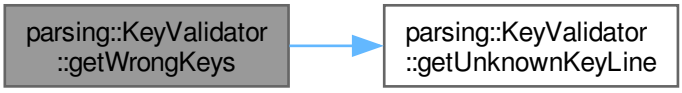
Returns

A vector with tuples, containing the line and name of invalid types.

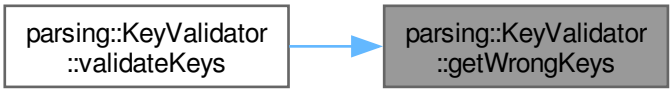
Definition at line 53 of file KeyValidator.cpp.

References getUnknownKeyLine(), and validKeys.

Here is the call graph for this function:



Here is the caller graph for this function:



10.11.2.4 validateEntries()

```
std::vector< std::tuple< int, std::string > > parsing::KeyValidator::validateEntries (
            const std::string & filename,
            const std::vector< std::string > & entryKeys )  [private]
```

Validates that an entries 'type' key is valid.

Parameters

filename	
entryKeys	

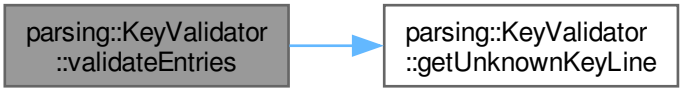
Returns

Todo Documentation

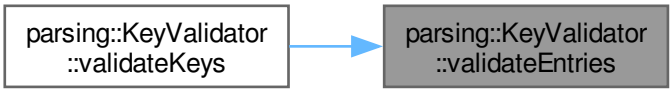
Definition at line 80 of file KeyValidator.cpp.

References getUnknownKeyLine(), and validEntryKeys.

Here is the call graph for this function:



Here is the caller graph for this function:



10.11.2.5 validateKeys()

```
std::vector< std::tuple< int, std::string > > parsing::KeyValidator::validateKeys (
            const Json::Value & root,
            const std::string & filename )
```

Validate keys off a Json::Value object.

This method goes through the MemberNames of a Json::Value object and validates, that they are part of the valid↩ Key attribute. It calls the nessecary methods to validate the keys within the entries array.

Parameters

root	The Json::Value object to be validated.
filename	The filename from which 'root' is from.

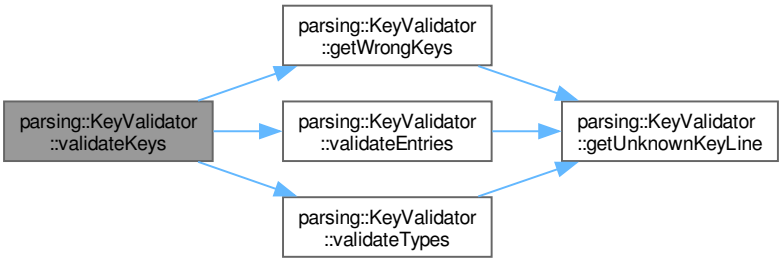
Returns

A vector with tuples, containing the line and name of invalid types.

Definition at line 25 of file KeyValidator.cpp.

References getWrongKeys(), validateEntries(), and validateTypes().

Here is the call graph for this function:



10.11.2.6 validateTypes()

```
void parsing::KeyValidator::validateTypes (
            const std::string & filename,
            const Json::Value & entry,
            std::vector< std::string > & entryKeys )  [static], [private]
```

Validates types from the entries array.

Makes sure that each type has it's according keys, needed to parse it.

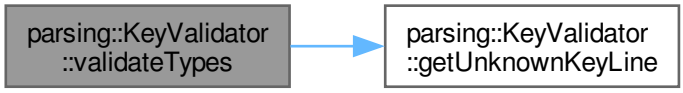
Parameters

filename	The filename from which 'entry' is from
entry	
entryKeys	

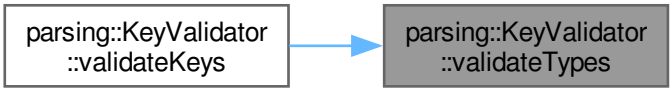
Definition at line 106 of file KeyValidator.cpp.

References getUnknownKeyLine().

Here is the call graph for this function:



Here is the caller graph for this function:



10.11.3 Member Data Documentation

10.11.3.1 validEntryKeys

```
std::vector<std::string> parsing::KeyValidator::validEntryKeys  [private]
```

Initial value:

```
= {"type", "key", "value", "path",
        "command"
    }
```

Definition at line 111 of file KeyValidator.hpp.

10.11.3.2 validKeys

```
std::vector<std::string> parsing::KeyValidator::validKeys  [private]
```

Initial value:

```
= {"outputfile", "hideshell", "entries",
        "application"
    }
```

Definition at line 108 of file KeyValidator.hpp.

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

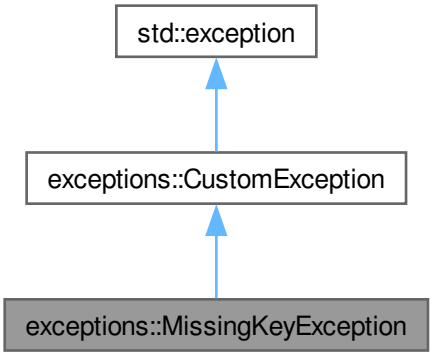
- src/include/KeyValidator.hpp
- src/sources/KeyValidator.cpp

10.12 exceptions::MissingKeyException Class Reference

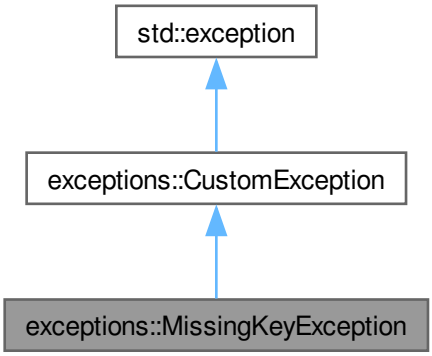
Exception for missing keys within entries.

```
#include <Exceptions.hpp>
```

Inheritance diagram for exceptions::MissingKeyException:



Collaboration diagram for exceptions::MissingKeyException:



Public Member Functions

- MissingKeyException (const std::string &key, const std::string &type)
- const char * what () const noexcept override

Public Member Functions inherited from exceptions::CustomException

- const char * what () const noexcept override

Private Attributes

- std::string message
- std::string type
- std::string key

10.12.1 Detailed Description

Exception for missing keys within entries.

This exception is thrown when a key (such as "path" or "command") is missing from an entry. It also prints the type and which key it is missing.

Definition at line 184 of file Exceptions.hpp.

10.12.2 Constructor & Destructor Documentation

10.12.2.1 MissingKeyException()

```
exceptions::MissingKeyException::MissingKeyException (
            const std::string & key,
            const std::string & type )  [inline]
```

Note

I planned to use std::format, however it seems that the required Compiler Version is not yet available in the stable Ubuntu Repo!

Definition at line 191 of file Exceptions.hpp.

References key, message, and type.

10.12.3 Member Function Documentation

10.12.3.1 what()

```
const char * exceptions::MissingKeyException::what ( ) const  [inline], [override], [noexcept]
```

Definition at line 203 of file Exceptions.hpp.

References message.

10.12.4 Member Data Documentation

10.12.4.1 key

```
std::string exceptions::MissingKeyException::key  [private]
```

Definition at line 188 of file Exceptions.hpp.

10.12.4.2 message

```
std::string exceptions::MissingKeyException::message  [private]
```

Definition at line 186 of file Exceptions.hpp.

10.12.4.3 type

```
std::string exceptions::MissingKeyException::type  [private]
```

Definition at line 187 of file Exceptions.hpp.

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

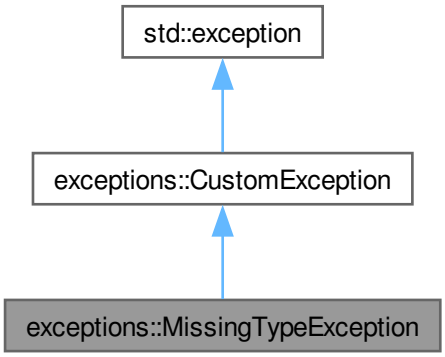
- src/include/Exceptions.hpp

10.13 exceptions::MissingTypeException Class Reference

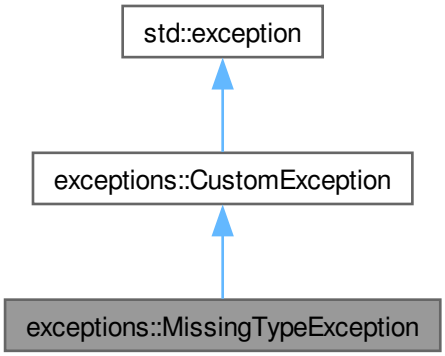
Exception for missing types of entries.

`#include <Exceptions.hpp>`

Inheritance diagram for exceptions::MissingTypeException:



Collaboration diagram for exceptions::MissingTypeException:



Public Member Functions

- MissingTypeException ()
- const char * what () const noexcept override

Public Member Functions inherited from exceptions::CustomException

- const char * what () const noexcept override

Private Attributes

- std::string message = "Missing \"type\" key for at least one entry!"

10.13.1 Detailed Description

Exception for missing types of entries.

This exception is thrown, when an entry is missing it's "type" key.

Definition at line 214 of file Exceptions.hpp.

10.13.2 Constructor & Destructor Documentation

10.13.2.1 MissingTypeException()

```
exceptions::MissingTypeException::MissingTypeException ( )  [inline]
```

Definition at line 219 of file Exceptions.hpp.

References message.

10.13.3 Member Function Documentation

10.13.3.1 what()

```
const char * exceptions::MissingTypeException::what ( ) const  [inline], [override], [noexcept]
```

Definition at line 222 of file Exceptions.hpp.

References message.

10.13.4 Member Data Documentation

10.13.4.1 message

```
std::string exceptions::MissingTypeException::message = "Missing \"type\" key for at least one
entry!"  [private]
```

Definition at line 216 of file Exceptions.hpp.

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

- src/include/Exceptions.hpp

10.14 options Struct Reference

The struct containing all possible options.

`#include <CommandLineHandler.hpp>`

10.14.1 Detailed Description

The struct containing all possible options.

This struct contains all long and short options which can be used and will be parsed using "getopt.h"

See also

CommandLineHandler

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

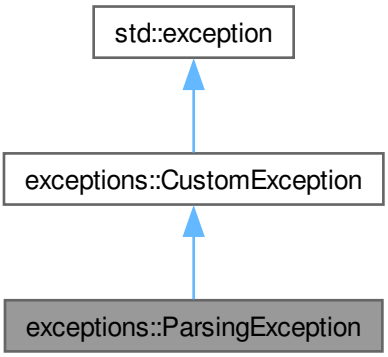
- src/include/CommandLineHandler.hpp

10.15 exceptions::ParsingException Class Reference

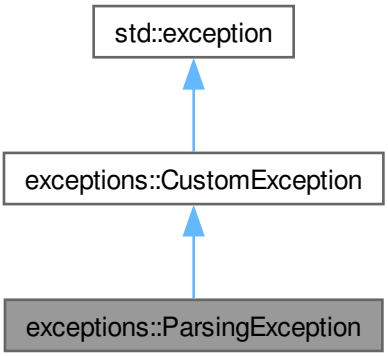
Exception for syntax errors within the json file.

`#include <Exceptions.hpp>`

Inheritance diagram for exceptions::ParsingException:



Collaboration diagram for exceptions::ParsingException:



Public Member Functions

- ParsingException (const std::string &file)
- const char * what () const noexcept override

Public Member Functions inherited from exceptions::CustomException

- const char * what () const noexcept override

Private Attributes

- const std::string file
- std::string message

10.15.1 Detailed Description

Exception for syntax errors within the json file.

Definition at line 41 of file Exceptions.hpp.

10.15.2 Constructor & Destructor Documentation

10.15.2.1 ParsingException()

```
exceptions::ParsingException::ParsingException (
            const std::string & file )  [inline], [explicit]
```

Note

I planned to use std::format, however it seems that the required Compiler Version is not yet available in the stable Ubuntu Repo!

Definition at line 47 of file Exceptions.hpp.

References file, and message.

10.15.3 Member Function Documentation

10.15.3.1 what()

```
const char * exceptions::ParsingException::what ( ) const  [inline], [override], [noexcept]
```

Definition at line 60 of file Exceptions.hpp.

References message.

10.15.4 Member Data Documentation

10.15.4.1 file

```
const std::string exceptions::ParsingException::file  [private]
```

Definition at line 43 of file Exceptions.hpp.

10.15.4.2 message

```
std::string exceptions::ParsingException::message  [private]
```

Definition at line 44 of file Exceptions.hpp.

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

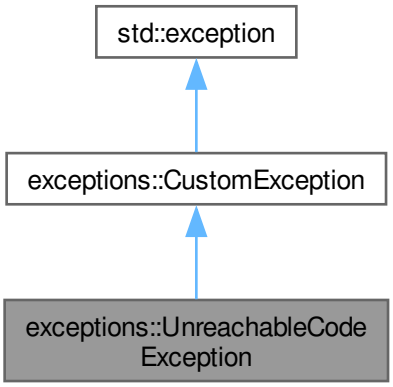
- src/include/Exceptions.hpp

10.16 exceptions::UnreachableCodeException Class Reference

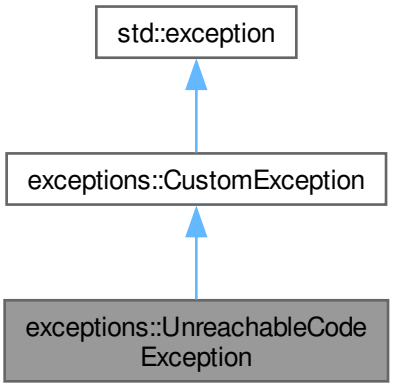
Exception for when the application reaches code it shouldn't reach.

```
#include <Exceptions.hpp>
```

Inheritance diagram for exceptions::UnreachableCodeException:



Collaboration diagram for exceptions::UnreachableCodeException:



Public Member Functions

- UnreachableCodeException (const std::string &message)
- const char * what () const noexcept override

Public Member Functions inherited from exceptions::CustomException

- const char * what () const noexcept override

Private Attributes

- std::string message

10.16.1 Detailed Description

Exception for when the application reaches code it shouldn't reach.

Definition at line 231 of file Exceptions.hpp.

10.16.2 Constructor & Destructor Documentation

10.16.2.1 UnreachableCodeException()

```
exceptions::UnreachableCodeException::UnreachableCodeException (
            const std::string & message )  [inline], [explicit]
```

Definition at line 236 of file Exceptions.hpp.

References message.

10.16.3 Member Function Documentation

10.16.3.1 what()

```
const char * exceptions::UnreachableCodeException::what ( ) const  [inline], [override], [noexcept]
```

Definition at line 240 of file Exceptions.hpp.

References message.

10.16.4 Member Data Documentation

10.16.4.1 message

```
std::string exceptions::UnreachableCodeException::message  [private]
```

Definition at line 233 of file Exceptions.hpp.

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

- src/include/Exceptions.hpp

10.17 utilities::Utils Class Reference

Responsible for utility function.

```
#include <Utils.hpp>
```

Static Public Member Functions

- static void setupEasyLogging (const std::string &configFile)
  Set up easylogging.
- static bool checkIfFileExists (const std::string &fileName)
  Check if a file exists.
- static bool checkFileEnding (const std::string_view &fileName)
  Checks if the file ending is ".json".
- static bool askToContinue (const std::string &prompt="Do you want to continue? (Y/N)\n")
  Asks if the user wants to continue.

10.17.1 Detailed Description

Responsible for utility function.

This class is responsible for handling miscellaneous utility functions which be used throughout the whole project.

Definition at line 39 of file Utils.hpp.

10.17.2 Member Function Documentation

10.17.2.1 askToContinue()

```
bool utilities::Utils::askToContinue (
            const std::string & prompt = "Do you want to continue? (Y/N)\n" )  [static]
```

Asks if the user wants to continue.

Asks the user if they want to continue and prompts them for a response.

Parameters

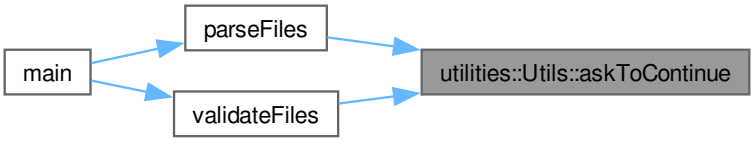
prompt	(Optional) A custom prompt to be used.

Returns

Returns true if the user wants to continue and false otherwise.

Definition at line 40 of file Utils.cpp.

Here is the caller graph for this function:



10.17.2.2 checkFileEnding()

```
bool utilities::Utils::checkFileEnding (
            const std::string_view & fileName )  [static]
```

Checks if the file ending is ".json".

This function checks if the given file ends with ".json".

Parameters

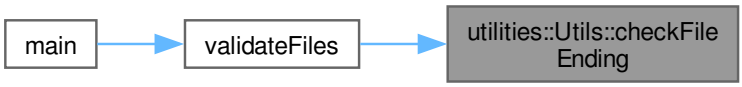
fileName	The file which should be checked.

Returns

Returns true if the file ends with ".json" and false otherwise.

Definition at line 37 of file Utils.cpp.

Here is the caller graph for this function:



10.17.2.3 checkIfFileExists()

```
bool utilities::Utils::checkIfFileExists (
            const std::string & fileName )  [static]
```

Check if a file exists.

This function checks if a file exists by trying to open it using fstream.

Parameters

fileName	The file which should be checked.

Returns

Returns true if the file exists and false otherwise

Definition at line 32 of file Utils.cpp.

Here is the caller graph for this function:

10.17.2.4 setupEasyLogging()

```
void utilities::Utils::setupEasyLogging (
            const std::string & configFile )  [static]
```

Set up easylogging.

This function sets up the easylogging library based on the given config file.

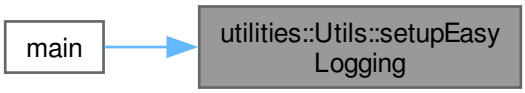
Parameters

configFile	The config file which is used

Definition at line 24 of file Utils.cpp.

References HOMEPAGE_URL, MAJOR_VERSION, MINOR_VERSION, PATCH_VERSION, and PROJECT_NAME.

Here is the caller graph for this function:



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

- src/include/Utils.hpp
- src/sources/Utils.cpp

Chapter 11

File Documentation

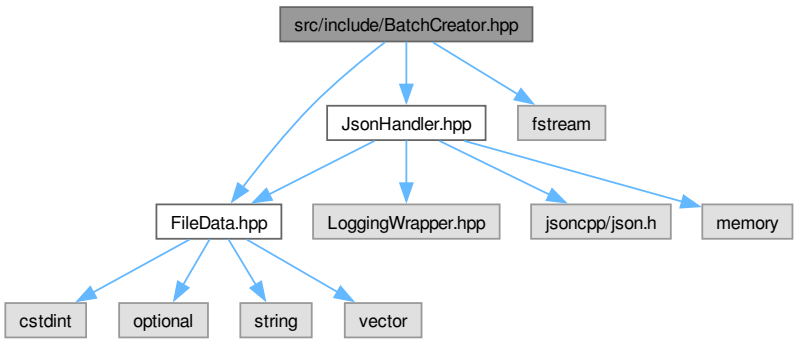
11.1 README.md File Reference

11.2 src/include/BatchCreator.hpp File Reference

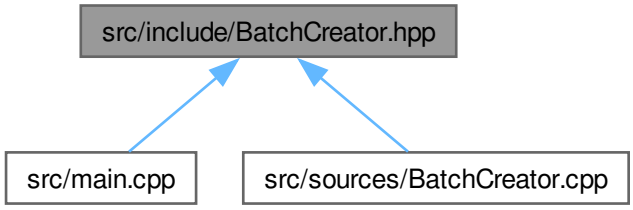
Creates batch file.

```
#include "FileData.hpp"
#include "JsonHandler.hpp"
#include <fstream>
```

Include dependency graph for BatchCreator.hpp:



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



Classes

- class BatchCreator

  Erstellt Batch Datei.

11.2.1 Detailed Description

Creates batch file.

Author

Maximilian Rodler

Date

22.04.2024

Version

Copyright

See LICENSE file

Author

Maximilian Rodler

Date

22.04.2024

Version

Creates batch file from Arguments in JSON

Copyright

See LICENSE file

Definition in file BatchCreator.hpp.

11.3 BatchCreator.hpp

Go to the documentation of this file.

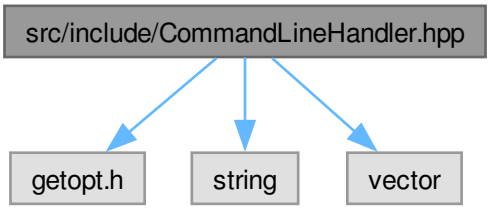
```
00001
00012 #include "FileData.hpp"
00013 #include "JsonHandler.hpp"
00014 #include <fstream>
00015
00024 class BatchCreator {
00025 public:
00026
00034     BatchCreator(std::shared_ptr<parsing::FileData> fileData);
00035
00036
00037 private:
00038
00039     std::ofstream batchFile;
00040
00041     std::shared_ptr<parsing::FileData> fileData;
00042
00048     void createBatch();
00049
00057     void writeStart();
00058
00064     void writeHideShell();
00065
00072     void writeCommands();
00073
00080     void writeEnvVariables();
00081
00088     void writePathVariables();
00089
00096     void writeApp();
00097
00104     void writeEnd();
00105
00106
00107 };
```

11.4 src/include/CommandLineHandler.hpp File Reference

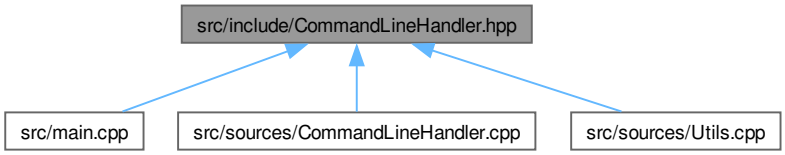
Responsible for the Command Line Interface.

```
#include <getopt.h>
#include <string>
#include <vector>
```

Include dependency graph for CommandLineHandler.hpp:



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



Classes

- class cli::CommandLineHandler

  Responsible for the Command Line Interface.

Namespaces

- namespace cli

  Includes everything regarding the CLI.

Variables

- static const struct option cli::options [ ]

11.4.1 Detailed Description

Responsible for the Command Line Interface.

Author

Simon Blum

Date

2024-04-18

Version

0.1.5

This file is responsible for the Command Line Interface. As such it includes things such as the CommandLine↩ Handler class, possible options and style helpers.

See also

cli

CommandLineHandler

options

StyleHelpers

Copyright

See LICENSE file

Definition in file CommandLineHandler.hpp.

11.5 CommandLineHandler.hpp

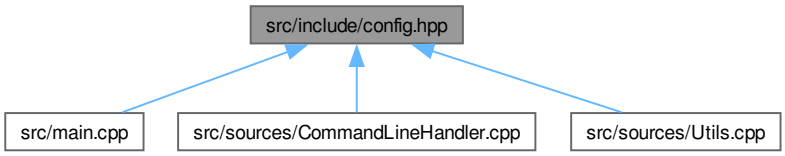
Go to the documentation of this file.

```
00001
00019 #ifndef COMMANDLINEHANDLER_HPP
00020 #define COMMANDLINEHANDLER_HPP
00021
00022 #include <getopt.h>
00023 #include <string>
00024 #include <vector>
00025
00038 namespace cli {
00039
00052 class CommandLineHandler {
00053 public:
00061     [[noreturn]] static void printHelp();
00069     [[noreturn]] static void printVersion();
00077     [[noreturn]] static void printCredits();
00088     static std::vector<std::string> parseArguments(int argc, char *argv[]);
00094     CommandLineHandler() = delete;
00100     ~CommandLineHandler() = delete;
00101 };
00102
00112 static const struct option options[] = {
00113     {"help", no_argument, nullptr, 'h'},
00114     {"version", no_argument, nullptr, 'v'},
00115     {"credits", no_argument, nullptr, 'c'},
00116     {"verbose", no_argument, nullptr, 0},
00117     {"outdir", required_argument, nullptr, 'o'},
00118     nullptr
00119     // Brief/verbose
00120     // Output dir
00121 };
00122
00134 #ifdef IS_UNIX // CLI Formatting for Linux
00135 static const std::string CLEAR_TERMINAL = "\033[2J\033[1;1H";
00136 static const std::string RESET = "\033[0m";
00137 static const std::string RED = "\033[0;31m";
00138 static const std::string GREEN = "\033[0;32m";
00139 static const std::string YELLOW = "\033[0;33m";
00140 static const std::string BLUE = "\033[0;34m";
00141 static const std::string MAGENTA = "\033[0;35m";
00142 static const std::string CYAN = "\033[0;36m";
00143 static const std::string WHITE = "\033[0;37m";
00144 static const std::string BOLD = "\033[1m";
00145 static const std::string UNDERLINE = "\033[4m";
00146 static const std::string ITALIC = "\033[3m";
00147 #elif defined(                                                                  \
00148     IS_WINDOWS) // Windows doesn't support ANSI escape codes the same way
00149 static const std::string CLEAR_TERMINAL = "";
00150 static const std::string RESET = "";
00151 static const std::string RED = "";
00152 static const std::string GREEN = "";
00153 static const std::string YELLOW = "";
00154 static const std::string BLUE = "";
00155 static const std::string MAGENTA = "";
00156 static const std::string CYAN = "";
00157 static const std::string WHITE = "";
00158 static const std::string BOLD = "";
00159 static const std::string UNDERLINE = "";
00160 static const std::string ITALIC = "";
00161 #endif
// end of group StyleHelpers  00163
00164 } // namespace cli
00165
00166 #endif // COMMANDLINEHANDLER_HPP
```

11.6 src/include/config.hpp File Reference

Configures general project information.

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



Macros

- #define LOG_CONFIG "/home/simon/1_Coding/cpp/JsonToBat/build/Debug/config/easylogging.conf"
- #define EXECUTABLE_NAME "json2batch"
- #define MAJOR_VERSION "0"
- #define MINOR_VERSION "2"
- #define PATCH_VERSION "1"
- #define DESCRIPTION "A simple tool to convert json to batch."
- #define PROJECT_NAME "JSON2Batch"
- #define AUTHORS "Elena Schwarzbach, Max Rodler, Simon Blum, Sonia Sinaci"
- #define HOMEPAGE_URL "https://definitelynotsimon13.github.io/ProjectJsonToBat"

11.6.1 Detailed Description

Configures general project information.

Author

Simon Blum

Date

2024-04-18

Version

0.1.5

This file is used by CMake to configure general information which can be used throughout the project.

Note

This file is automatically configured by CMake. The original file can be found in conf/config.hpp.in @license GNU GPLv3

Copyright

See LICENSE file

Definition in file config.hpp.

11.6.2 Macro Definition Documentation

11.6.2.1 AUTHORS

```
#define AUTHORS "Elena Schwarzbach, Max Rodler, Simon Blum, Sonia Sinaci"
```

Definition at line 27 of file config.hpp.

11.6.2.2 DESCRIPTION

```
#define DESCRIPTION "A simple tool to convert json to batch."
```

Definition at line 25 of file config.hpp.

11.6.2.3 EXECUTABLE_NAME

```
#define EXECUTABLE_NAME "json2batch"
```

Definition at line 21 of file config.hpp.

11.6.2.4 HOMEPAGE_URL

```
#define HOMEPAGE_URL "https://definitelynotsimon13.github.io/ProjectJsonToBat"
```

Definition at line 28 of file config.hpp.

11.6.2.5 LOG_CONFIG

```
#define LOG_CONFIG "/home/simon/1_Coding/cpp/JsonToBat/build/Debug/config/easylogging.conf"
```

Definition at line 20 of file config.hpp.

11.6.2.6 MAJOR_VERSION

```
#define MAJOR_VERSION "0"
```

Definition at line 22 of file config.hpp.

11.6.2.7 MINOR_VERSION

```
#define MINOR_VERSION "2"
```

Definition at line 23 of file config.hpp.

11.6.2.8 PATCH_VERSION

```
#define PATCH_VERSION "1"
```

Definition at line 24 of file config.hpp.

11.6.2.9 PROJECT_NAME

```
#define PROJECT_NAME "JSON2Batch"
```

Definition at line 26 of file config.hpp.

11.7 config.hpp

Go to the documentation of this file.

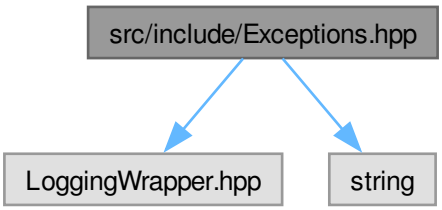
```
00001
00016 // This file is autogenerated. Changes will be overwritten
00017
00018 #ifndef CONFIG_HPP
00019 #define CONFIG_HPP
00020 #define LOG_CONFIG "/home/simon/1_Coding/cpp/JsonToBat/build/Debug/config/easylogging.conf"
00021 #define EXECUTABLE_NAME "json2batch"
00022 #define MAJOR_VERSION "0"
00023 #define MINOR_VERSION "2"
00024 #define PATCH_VERSION "1"
00025 #define DESCRIPTION "A simple tool to convert json to batch."
00026 #define PROJECT_NAME "JSON2Batch"
00027 #define AUTHORS "Elena Schwarzbach, Max Rodler, Simon Blum, Sonia Sinaci"
00028 #define HOMEPAGE_URL "https://definitelynotsimon13.github.io/ProjectJsonToBat"
00029 #endif
```

11.8 src/include/Exceptions.hpp File Reference

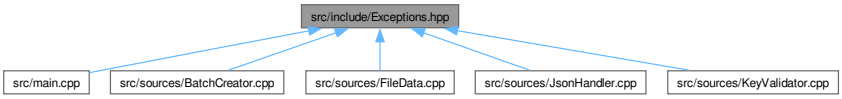
Contains all the custom exceptions used in the project.

```
#include "LoggingWrapper.hpp"
#include <string>
```

Include dependency graph for Exceptions.hpp:



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



Classes

- class exceptions::CustomException
  Base class for all custom exceptions.
- class exceptions::ParsingException
  Exception for syntax errors within the json file.
- class exceptions::FileExistsException
  Exception for an already exisiting outputfile.
- class exceptions::InvalidValueException
  Exception for an ivalid (usually empty) value field.
- class exceptions::InvalidKeyException
  Exception for invalid keys.
- class exceptions::InvalidTypeException
  Exception for invalid types.
- class exceptions::MissingKeyException
  Exception for missing keys within entries.
- class exceptions::MissingTypeException
  Exception for missing types of entries.
- class exceptions::UnreachableCodeException
  Exception for when the application reaches code it shouldn't reach.
- class exceptions::FailedToOpenFileException

Namespaces

- namespace exceptions
  Namespace used for customized exceptions.

11.8.1 Detailed Description

Contains all the custom exceptions used in the project.

Author

Simon Blum

Date

23.04.2024

Version

0.1.6

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Definition in file Exceptions.hpp.

11.9 Exceptions.hpp

Go to the documentation of this file.

```
00001
00010 #ifndef EXCEPTIONS_HPP
00011 #define EXCEPTIONS_HPP
00012
00013 #include "LoggingWrapper.hpp"
00014 #include <string>
00015
00020 namespace exceptions {
00030 class CustomException : public std::exception {
00031 public:
00032     [[nodiscard]] const char *what() const noexcept override {
00033         return "Base Exception";
00034     }
00035 };
00036
00041 class ParsingException : public CustomException {
00042 private:
00043     const std::string file;
00044     std::string message;
00045
00046 public:
00047     explicit ParsingException(const std::string &file) : file(file) {
00053         std::stringstream ss;
00054         ss « "Error while trying to parse \"" « file « "\"!\n"
00055            « "There most likely is a syntax error within the \".json\" file.";
00056         this->message = ss.str();
00057         LOG_INFO « "ParsingException: " « message;
00058     }
00059
00060     [[nodiscard]] const char *what() const noexcept override {
00061         return message.c_str();
00062     }
00063 };
00064
00069 class FileExistsException : public CustomException {
00070 private:
00071     const std::string file;
00072     std::string message;
00073
00074 public:
00075     explicit FileExistsException(const std::string &file) : file(file) {
00081         std::stringstream ss;
00082         ss « "The outputfile \"" « file « "\" already exists!";
00083         this->message = ss.str();
00084         LOG_INFO « "BatchExistsException: " « message;
00085     }
00086
00087     [[nodiscard]] const char *what() const noexcept override {
00088         return message.c_str();
00089     }
00090 };
00091
00096 class InvalidValueException : public CustomException {
00097 private:
00098     const std::string key;
00099     std::string message;
00100
00101 public:
00102     InvalidValueException(const std::string &key, const std::string &issue)
00103         : key(key) {
00109         std::stringstream ss;
00110         ss « "Error at key \"" « key « "\"! " « issue;
00111         this->message = ss.str();
00112         LOG_INFO « "InvalidValueException: " « message;
00113     }
00114     [[nodiscard]] const char *what() const noexcept override {
00115         return message.c_str();
00116     }
00117 };
00118
00130 class InvalidKeyException : public CustomException {
00131 private:
00132     std::string message = "Invalid key found!";
00133
00134 public:
00135     explicit InvalidKeyException(const std::vector<std::tuple<int, std::string» &keys) {
00136         LOG_INFO « "InvalidKeyException: " « message;
00137         for (const auto &[line, key] : keys) {
00138             LOG_WARNING « "Invalid key found at line " « line « ": \"" « key
00139                         « "\"!";
00140         }
00141     }
```

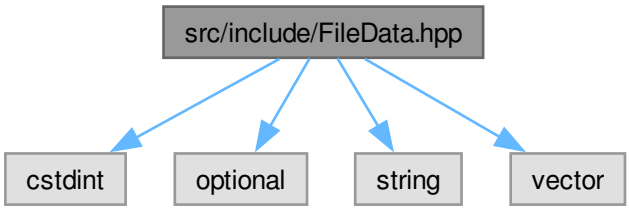
```
00142     [[nodiscard]] const char *what() const noexcept override {
00143         return message.c_str();
00144     }
00145 };
00146
00155 class InvalidTypeException : public CustomException {
00156 private:
00157     const std::string type;
00158     std::string message;
00159
00160 public:
00161     InvalidTypeException(const std::string &type, int line) : type(type) {
00167         std::stringstream ss;
00168         ss « "Invalid type found at line " « line « ": \"" « type « "\"";
00169         this->message = ss.str();
00170         LOG_INFO « "InvalidTypeException: " « message;
00171     }
00172     [[nodiscard]] const char *what() const noexcept override {
00173         return message.c_str();
00174     }
00175 };
00176
00184 class MissingKeyException : public CustomException {
00185 private:
00186     std::string message;
00187     std::string type;
00188     std::string key;
00189
00190 public:
00191     MissingKeyException(const std::string &key, const std::string &type)
00192         : type(type), key(key) {
00198         std::stringstream ss;
00199         ss « "Missing key \"" « key « "\" for type \"" « type « "\"!";
00200         this->message = ss.str();
00201         LOG_INFO « "MissingKeyException: " « message;
00202     }
00203     [[nodiscard]] const char *what() const noexcept override {
00204         return message.c_str();
00205     }
00206 };
00207
00214 class MissingTypeException : public CustomException {
00215 private:
00216     std::string message = "Missing \"type\" key for at least one entry!";
00217
00218 public:
00219     MissingTypeException() {
00220         LOG_INFO « "MissingTypeException: " « message;
00221     }
00222     [[nodiscard]] const char *what() const noexcept override {
00223         return message.c_str();
00224     }
00225 };
00226
00231 class UnreachableCodeException : public CustomException {
00232 private:
00233     std::string message;
00234
00235 public:
00236     explicit UnreachableCodeException(const std::string &message)
00237         : message(message) {
00238         LOG_INFO « "UnreachableCodeException: " « message;
00239     }
00240     [[nodiscard]] const char *what() const noexcept override {
00241         return message.c_str();
00242     }
00243 };
00244
00245 class FailedToOpenFileException : public CustomException {
00246 private:
00247     std::string message;
00248
00250 public:
00251     explicit FailedToOpenFileException(const std::string &file) {
00252         message = "Failed to open file: " + file;
00253         LOG_INFO « "FailedToOpenFileException: " « message;
00254     }
00255     [[nodiscard]] const char *what() const noexcept override {
00256         return message.c_str();
00257     }
00258 };
00259
00260 } // namespace exceptions
00261
00262 #endif
```

11.10 src/include/FileData.hpp File Reference

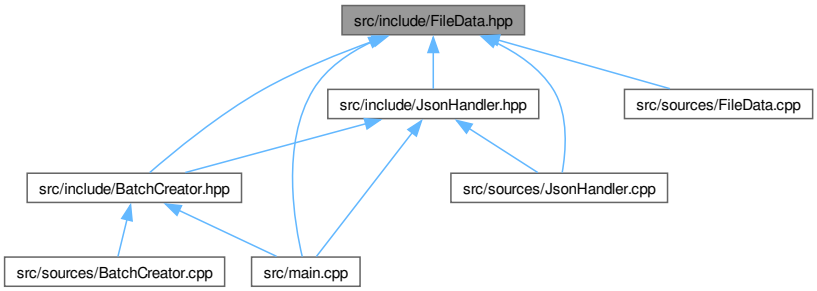
This file contains the FileData class.

```
#include <cstdint>
#include <optional>
#include <string>
#include <vector>
```

Include dependency graph for FileData.hpp:



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



Classes

- class parsing::FileData

  This class contains all data from the json file.

Namespaces

- namespace parsing

  The namespace containing everything relevant to parsing.

11.10.1 Detailed Description

This file contains the FileData class.

Author

Sonia Sinacci, Elena Schwartzbach

Date

16.04.2024

Version

0.1.5

See also

parsing::FileData

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Definition in file FileData.hpp.

11.11 FileData.hpp

Go to the documentation of this file.

```
00001
00013 #ifndef FILEDATA_HPP
00014 #define FILEDATA_HPP
00015
00016 #include <cstdint>
00017 #include <optional>
00018 #include <string>
00019 #include <vector>
00020
00021 namespace parsing {
00030 class FileData {
00031 public:
00042     void setOutputFile(std::string &newOutputfile);
00043
00048     void setHideShell(bool newHideShell) {
00049         this->hideShell = newHideShell;
00050     }
00051
00060     void setApplication(const std::string &newApplication);
00061
00072     void addCommand(const std::string &command);
00073
00085     void addEnvironmentVariable(const std::string &name,
00086                                 const std::string &value);
00087
00098     void addPathValue(const std::string &pathValue);
00099
00104     [[nodiscard]] const std::string &getOutputFile() const {
00105         return outputfile;
00106     }
00107
00112     [[nodiscard]] bool getHideShell() const {
00113         return hideShell;
00114     }
```

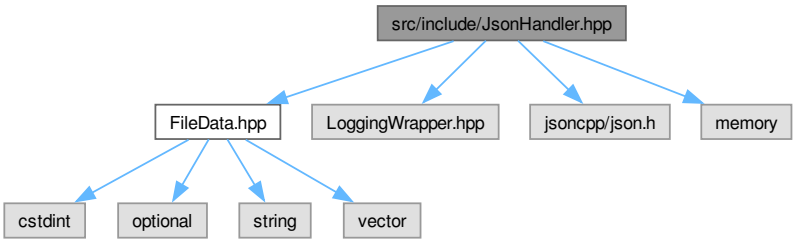
```
00115
00120     [[nodiscard]] const std::optional<std::string> &getApplication() const {
00121         return application;
00122     }
00123
00128     [[nodiscard]] const std::vector<std::string> &getCommands() const {
00129         return commands;
00130     }
00131
00136     [[nodiscard]] const std::vector<std::tuple<std::string, std::string>> &
00137     getEnvironmentVariables() const {
00138         return environmentVariables;
00139     }
00140
00145     [[nodiscard]] const std::vector<std::string> &getPathValues() const {
00146         return pathValues;
00147     }
00148
00149 private:
00150     std::string outputfile;
00151     bool hideShell;
00152     std::optional<std::string> application;
00153     std::vector<std::string> commands;
00154     std::vector<std::tuple<std::string, std::string>> environmentVariables;
00155     std::vector<std::string> pathValues;
00156 };
00157 } // namespace parsing
00158
00159 #endif // FILEDATA_HPP
```

11.12 src/include/JsonHandler.hpp File Reference

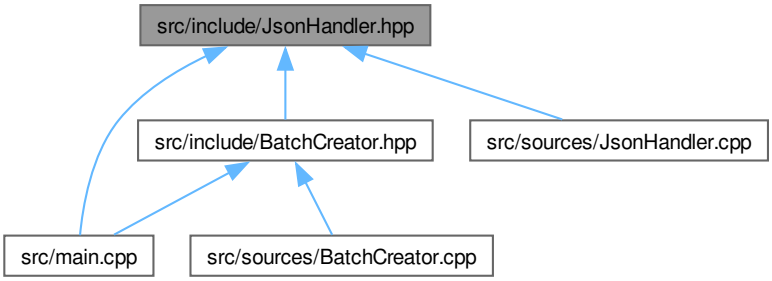
This file contains the JsonHandler class.

```
#include "FileData.hpp"
#include "LoggingWrapper.hpp"
#include <jsoncpp/json.h>
#include <memory>
```

Include dependency graph for JsonHandler.hpp:



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



Classes

- class parsing::JsonHandler

  This file reads all data from the json file.

Namespaces

- namespace parsing

  The namespace containing everything relevant to parsing.

11.12.1 Detailed Description

This file contains the JsonHandler class.

Author

Sonia Sinacci, Elena Schwartzbach

Date

23.04.2024

Version

0.1.5

See also

parsing::JsonHandler

Copyright

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Definition in file JsonHandler.hpp.

11.13 JsonHandler.hpp

Go to the documentation of this file.

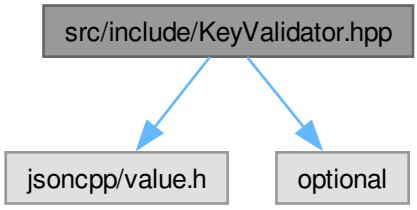
```
00001
00013 #ifndef JSONHANDLER_HPP
00014 #define JSONHANDLER_HPP
00015
00016 #include "FileData.hpp"
00017 #include "LoggingWrapper.hpp"
00018 #include <jsoncpp/json.h>
00019
00020 #include <memory>
00021
00034 namespace parsing {
00035
00045 class JsonHandler {
00046 public:
00053     JsonHandler() {
00054         LOG_INFO « "Initialising empty JsonHandler";
00055     }
00063     explicit JsonHandler(const std::string &filename);
00073     std::shared_ptr<FileData> getFileData();
00074
00075 private:
00091     [[nodiscard]] static std::shared_ptr<Json::Value>
00092     parseFile(const std::string &filename);
00101     void assignOutputFile() const;
00108     void assignHideShell() const;
00115     void assignApplication() const;
00127     void assignEntries() const;
00132     void assignCommand(const Json::Value &entry) const;
00137     void assignEnvironmentVariable(const Json::Value &entry) const;
00142     void assignPathValue(const Json::Value &entry) const;
00151     std::shared_ptr<FileData> createFileData();
00152     std::shared_ptr<Json::Value> root;
00153     std::shared_ptr<FileData> data;
00154 };
00155 } // namespace parsing
00156
00157 #endif // JSONHANDLER_HPP
```

11.14 src/include/KeyValidator.hpp File Reference

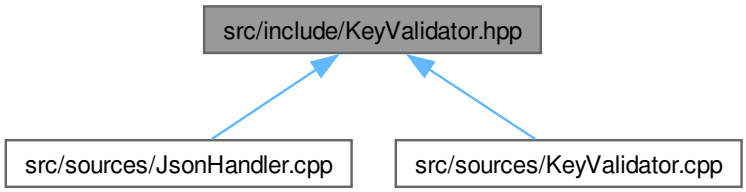
This file contains the KeyValidator class.

```
#include "jsoncpp/value.h"
#include <optional>
```

Include dependency graph for KeyValidator.hpp:



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



Classes

- class parsing::KeyValidator

  Validates keys of a Json::Value object.

Namespaces

- namespace parsing

  The namespace containing everything relevant to parsing.

11.14.1 Detailed Description

This file contains the KeyValidator class.

Author

Simon Blum

Date

21.04.2024

Version

0.1.6

See also

parsing::KeyValidator

Copyright

See LICENSE file

Definition in file KeyValidator.hpp.

11.15 KeyValidator.hpp

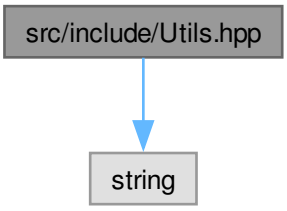
Go to the documentation of this file.

```
00001
00012 #ifndef KEYVALIDATOR_HPP
00013 #define KEYVALIDATOR_HPP
00014
00015 #include "jsoncpp/value.h"
00016 #include <optional>
00017 namespace parsing {
00026 class KeyValidator {
00027 public:
00033     static KeyValidator &getInstance();
00034
00048     std::vector<std::tuple<int, std::string»
00049     validateKeys(const Json::Value &root, const std::string &filename);
00050
00051 private:
00064     std::vector<std::tuple<int, std::string»
00065     getWrongKeys(const Json::Value& root, const std::string &filename);
00066
00067
00077     static void validateTypes(const std::string &filename,
00078                               const Json::Value &entry,
00079                               std::vector<std::string> &entryKeys);
00080
00091     std::vector<std::tuple<int, std::string»
00092     validateEntries(const std::string &filename,
00093                     const std::vector<std::string> &entryKeys);
00094
00105     static std::optional<int> getUnknownKeyLine(const std::string &filename,
00106             const std::string &wrongKey);
00107
00108     std::vector<std::string> validKeys = {"outputfile", "hideshell", "entries",
00109         "application"
00110     };
00111     std::vector<std::string> validEntryKeys = {"type", "key", "value", "path",
00112         "command"
00113     };
00114 };
00115 } // namespace parsing
00116
00117 #endif
```

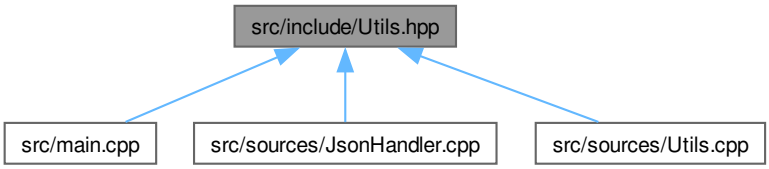
11.16 src/include/Utils.hpp File Reference

`#include <string>`

Include dependency graph for Utils.hpp:



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



Classes

- class utilities::Utils

  Responsible for utility function.

Namespaces

- namespace utilities

  Includes all utilities.

11.17 Utils.hpp

Go to the documentation of this file.

```
00001
00016 #ifndef UTILITIES_HPP
00017 #define UTILITIES_HPP
00018
00019 #include <string>
00020
00030 namespace utilities {
00031
00039 class Utils {
00040 public:
00048     static void setupEasyLogging(const std::string &configFile);
00049
00057     static bool checkIfFileExists(const std::string &fileName);
00058
00066     static bool checkFileEnding(const std::string_view &fileName);
00067
00075     static bool
00076     askToContinue(const std::string &prompt = "Do you want to continue? (Y/N)\n");
00077 };
00078 } // namespace utilities
00079
00080 #endif // UTILITIES_HPP
```

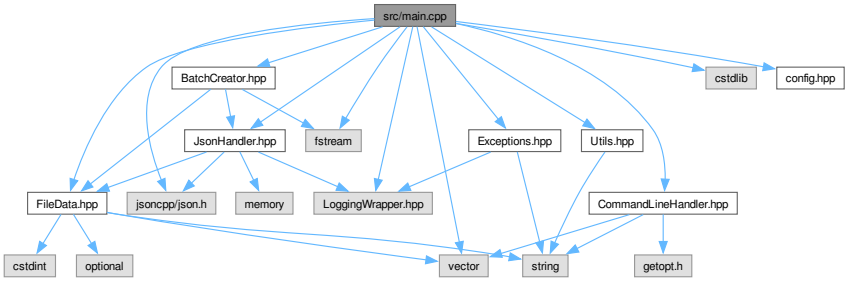
11.18 src/main.cpp File Reference

Contains the main function.

```
#include <LoggingWrapper.hpp>
#include <cstdlib>
#include <fstream>
```

```
#include <jsoncpp/json.h>
#include <vector>
#include "BatchCreator.hpp"
#include "CommandLineHandler.hpp"
#include "Exceptions.hpp"
#include "FileData.hpp"
#include "JsonHandler.hpp"
#include "Utils.hpp"
#include "config.hpp"
```

Include dependency graph for main.cpp:



Functions

- INITIALIZE_EASYLOGGINGPP std::vector< std::string > validateFiles (std::vector< std::string > files)
- void parseFiles (std::vector< std::string > files)
- int main (int argc, char *argv[])

  Main function of the program.

11.18.1 Detailed Description

Contains the main function.

Author

Elena Schwarzbach, Max Rodler, Simon Blum, Sonia Sinaci

Date

2024-04-18

Version

0.1.5

The main function is responsible for connection all parts of the programm. It calls all relevant classes and finishes when everything is done.

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Definition in file main.cpp.

11.18.2 Function Documentation

11.18.2.1 main()

```
int main (
            int argc,
            char * argv[] )
```

Main function of the program.

The main function is responsible for connection all parts of the programm. It calls all relevant classes and finishes when everything is done.

Parameters

argc	The number of arguments given
argv	Th command line arguments given

Returns

Returns 0 on success, 1 on failure

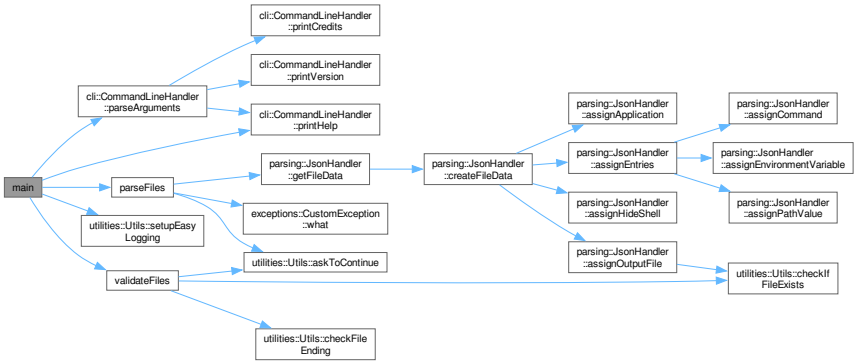
Todo Documentation

Refactoring

Definition at line 60 of file main.cpp.

References LOG_CONFIG, cli::CommandLineHandler::parseArguments(), parseFiles(), cli::CommandLineHandler::printHelp(), utilities::Utils::setupEasyLogging(), and validateFiles().

Here is the call graph for this function:



11.18.2.2 parseFiles()

```
void parseFiles (
            std::vector< std::string > files )
```

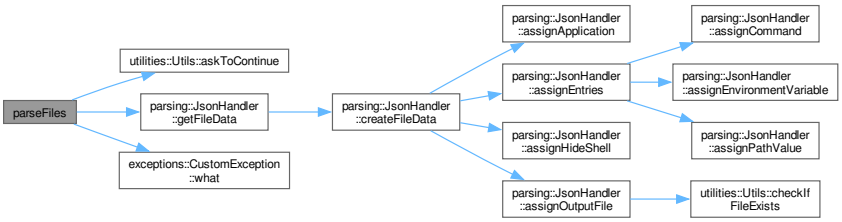
Parameters

files	

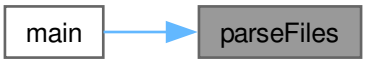
Definition at line 144 of file main.cpp.

References utilities::Utils::askToContinue(), parsing::JsonHandler::getFileData(), and exceptions::CustomException::what().

Here is the call graph for this function:



Here is the caller graph for this function:



11.18.2.3 validateFiles()

```
std::vector< std::string > validateFiles (
            std::vector< std::string > files )
```

Parameters

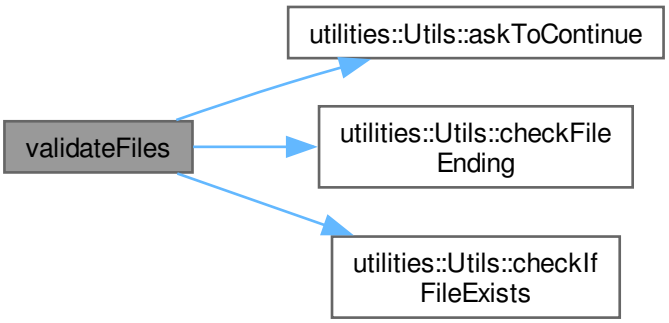
files	

Returns

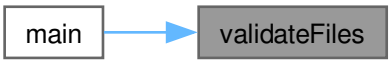
Definition at line 106 of file main.cpp.

References utilities::Utils::askToContinue(), utilities::Utils::checkFileEnding(), and utilities::Utils::checkIfFileExists().

Here is the call graph for this function:



Here is the caller graph for this function:



11.19 main.cpp

Go to the documentation of this file.

```
00001
00013 #include <LoggingWrapper.hpp>
00014 #include <cstdlib>
00015 #include <fstream>
00016 #include <jsoncpp/json.h>
00017 #include <vector>
00018
00019 #include "BatchCreator.hpp"
00020 #include "CommandLineHandler.hpp"
00021 #include "Exceptions.hpp"
00022 #include "FileData.hpp"
00023 #include "JsonHandler.hpp"
00024 #include "Utils.hpp"
00025 #include "config.hpp"
00026
00027 INITIALIZE_EASYLOGGINGPP
00028
00036 std::vector<std::string> validateFiles(std::vector<std::string> files);
00037
00044 void parseFiles(std::vector<std::string> files);
00045
00060 int main(int argc, char *argv[]) {
00061     std::ifstream configFile(LOG_CONFIG);
00062     if (!configFile.good()) {
00063         std::cerr « cli::RED « cli::BOLD
00064                  « "Fatal: Easylogging configuration file not found at:\n"
00065                  « cli::RESET « cli::ITALIC « "\n\t\"" « LOG_CONFIG « "\"\n\n"
00066                  « cli::RESET;
00067
```

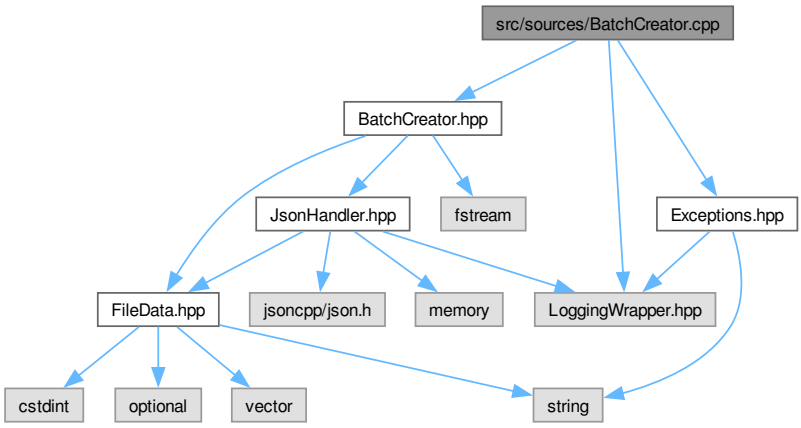
```
00068         std::cout « "Aborting...\n";
00069         return 1;
00070     }
00071
00072     utilities::Utils::setupEasyLogging(LOG_CONFIG);
00073
00074     // Check if any options/arguments were given
00075     if (argc < 2) {
00076         LOG_ERROR « "No options given!\n";
00077         cli::CommandLineHandler::printHelp();
00078     }
00079
00080     // Vector of all inputted file names
00081     std::vector<std::string> files =
00082         cli::CommandLineHandler::parseArguments(argc, argv);
00083
00084     if (files.empty()) {
00085         LOG_ERROR « "No files were given as arguments!\n";
00086         return 1;
00087     }
00088     OUTPUT « cli::BOLD « "Parsing the following files:\n" « cli::RESET;
00089     for (const auto &file : files) {
00090         OUTPUT « "\t - " « file « "\n";
00091     }
00092
00093     // The first element of the vector is the output directory
00094     // If the output directory is not given, there'll be an empty string
00095     std::string outputDir = files[0];
00096     files.erase(files.begin());
00097
00098     // Replace the original files vector with the validFiles vector
00099     files = std::move(validateFiles(files));
00100     parseFiles(files);
00101
00102     LOG_INFO « "Exiting...";
00103     return 0;
00104 }
00105
00106 std::vector<std::string> validateFiles(std::vector<std::string> files) {
00107     std::vector<std::string> validFiles;
00108
00109     for (const auto &file : files) {
00110         if (!utilities::Utils::checkIfFileExists(file)) {
00111             LOG_ERROR « "The file \"" « file « "\" does not exist!\n";
00112
00113             if (files.size() != 1 &&
00114                     !utilities::Utils::askToContinue("Do you want to continue with the "
00115                             "remaining files? (y/n) ")) {
00116                 // Exit if it's the only file or the user does not want to
00117                 // continue
00118                 OUTPUT « "Aborting...\n";
00119                 LOG_INFO « "Application ended by user Input";
00120                 exit(1);
00121             }
00122
00123             continue;
00124         }
00125
00126         if (!utilities::Utils::checkFileEnding(file)) {
00127             LOG_WARNING « "The file \"" « file « "\" does not end in \".json\"\n";
00128             OUTPUT « "If the file is not in JSON format, continuing may "
00129                    "result in\nunexpected behaviour!\n";
00130
00131             if (!utilities::Utils::askToContinue()) {
00132                 OUTPUT « "Aborting...\n";
00133                 LOG_INFO « "Application ended by user Input";
00134                 exit(1);
00135             }
00136         }
00137
00138         validFiles.push_back(file);
00139     }
00140
00141     return validFiles;
00142 }
00143
00144 void parseFiles(std::vector<std::string> files) {
00145
00146     for (auto file = files.begin(); file != files.end(); ++file) {
00147         OUTPUT « cli::ITALIC « "\nParsing file: " « *file « "...\n"
00148                « cli::RESET;
00149
00150         std::shared_ptr<parsing::FileData> fileData;
00151         try {
00152             parsing::JsonHandler jsonHandler(*file);
00153             fileData = jsonHandler.getFileData();
00154             BatchCreator batchCreator(fileData);
```

```
00155         } catch (const exceptions::CustomException &e) {
00156             OUTPUT « "\nThere has been a error while trying to parse \"" « *file
00157                    « ":\n";
00158             LOG_ERROR « e.what();
00159 
00160             if (std::next(file) != files.end() &&
00161                     !utilities::Utils::askToContinue(
00162                         "Do you want to continue with the other files? (y/n) "
00163                         "")) {
00164                 OUTPUT « "Aborting...";
00165                 LOG_INFO « "Application ended by user Input";
00166                 exit(1);
00167             }
00168 
00169             std::cout « "\n";
00170             continue;
00171         }
00172     }
00173     OUTPUT « cli::ITALIC « "Done with files!\n" « cli::RESET;
00174 }
```

11.20 src/sources/BatchCreator.cpp File Reference

```
#include "BatchCreator.hpp"
#include "Exceptions.hpp"
#include "LoggingWrapper.hpp"
```

Include dependency graph for BatchCreator.cpp:



11.21 BatchCreator.cpp

Go to the documentation of this file.

```
00001 
00012 #include "BatchCreator.hpp"
00013 #include "Exceptions.hpp"
00014 #include "LoggingWrapper.hpp"
00015 
00016 BatchCreator::BatchCreator(std::shared_ptr<parsing::FileData> fileData) {
00017     LOG_INFO « "Initializing BatchCreator";
00018     this->fileData = fileData;
00019     this->createBatch();
00020 }
00021 
00022 void BatchCreator::createBatch() {
00023     LOG_INFO « "Creating Batch file";
```

```
00024
00025     this->batchFile.open(this->fileData->getOutputFile());
00026     if (!this->batchFile.is_open()) {
00027         throw exceptions::FailedToOpenFileException(
00028             this->fileData->getOutputFile());
00029     }
00030     this->writeStart();
00031     this->writeHideShell();
00032     this->writeCommands();
00033     this->writeEnvVariables();
00034     this->writePathVariables();
00035     this->writeApp();
00036     this->writeEnd();
00037     this->batchFile.close();
00038 }
00039
00040 void BatchCreator::writeStart() {
00041     LOG_INFO « "writing Start of Batch";
00042     this->batchFile « "@ECHO OFF\r\nC:\\Windows\\System32\\cmd.exe ";
00043 }
00044
00045 void BatchCreator::writeHideShell() {
00046     if (this->fileData->getHideShell()) {
00047         LOG_INFO « "writing hide Shell";
00048         this->batchFile « "/c ";
00049
00050     } else {
00051         LOG_INFO « "writing show Shell";
00052         this->batchFile « "/k ";
00053     }
00054 }
00055
00056 void BatchCreator::writeCommands() {
00057     LOG_INFO « "writing Commands";
00058     this->batchFile « "\"";
00059     for (const std::string &command : this->fileData->getCommands()) {
00060         this->batchFile « command « " && ";
00061     }
00062 }
00063
00064 void BatchCreator::writeEnvVariables() {
00065     LOG_INFO « "writing Environment Variables";
00066     for (const std::tuple env : this->fileData->getEnvironmentVariables()) {
00067         this->batchFile « "set " « std::get<0>(env) « "=" « std::get<1>(env)
00068                         « " && ";
00069     }
00070 }
00071
00072 void BatchCreator::writePathVariables() {
00073     LOG_INFO « "writing Path Variables";
00074     this->batchFile « "set path=";
00075     for (const std::string &path : this->fileData->getPathValues()) {
00076         this->batchFile « path « ";";
00077     }
00078     this->batchFile « "%path%";
00079 }
00080
00081 void BatchCreator::writeApp() {
00082     std::string appName = this->fileData->getOutputFile();
00083     appName = appName.substr(0, appName.find("."));
00084     if (this->fileData->getApplication().has_value()) {
00085         LOG_INFO « "writing start Application";
00086         this->batchFile « " && start \"" « appName « "\" "
00087                         « this->fileData->getApplication().value() « "\"\r\n";
00088     } else {
00089         LOG_INFO « "writing not start Application";
00090         this->batchFile « "\"\r\n";
00091     }
00092 }
00093
00094 void BatchCreator::writeEnd() {
00095     this->batchFile « "@ECHO ON";
00096 }
```

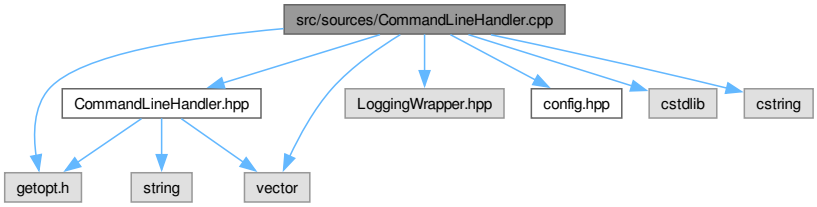
11.22 src/sources/CommandLineHandler.cpp File Reference

Implementation for the Command Line Interface.

```
#include "CommandLineHandler.hpp"
#include "LoggingWrapper.hpp"
```

```
#include "config.hpp"
#include <cstdlib>
#include <cstring>
#include <getopt.h>
#include <vector>
```

Include dependency graph for CommandLineHandler.cpp:



Namespaces

- namespace cli

  Includes everything regarding the CLI.

11.22.1 Detailed Description

Implementation for the Command Line Interface.

Author

Simon Blum

Date

2024-04-18

Version

0.1.5

See also

src/include/utility/CommandLineHandler.hpp

Copyright

See LICENSE file

Definition in file CommandLineHandler.cpp.

11.23 CommandLineHandler.cpp

Go to the documentation of this file.

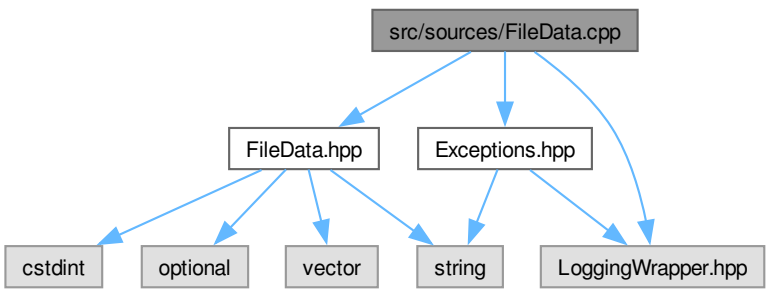
```
00001
00013 #include "CommandLineHandler.hpp"
00014 #include "LoggingWrapper.hpp"
00015 #include "config.hpp"
00016 #include <cstdlib>
00017 #include <cstring>
00018 #include <getopt.h>
00019 #include <vector>
00020
00021 namespace cli {
00022 void CommandLineHandler::printHelp() {
00023     LOG_INFO << "Printing help message...";
00024     OUTPUT << BOLD << "Usage:\n"
00025            << RESET << "----------\n"
00026            << EXECUTABLE_NAME << " [options] [filenames]\n"
00027            << "\n"
00028            << BOLD << "Options:\n"
00029            << RESET << "----------\n"
00030            << "-o, --outdir\t [path]\t\tOutput the batch file to the given "
00031            "dir\n"
00032            << "-h, --help\t\t\tPrint this help message\n"
00033            << "-v, --version\t\t\tPrint the version number\n"
00034            << "-c, --credits\t\t\tPrint the credits\n\n"
00035            << "    --verbose\t\t\tStart the application in verbose mode\n"
00036            << ITALIC
00037            << "          \t\t\tNote: Verbose flag should be passed first!\n\n"
00038            << RESET << BOLD << "Filenames:\n"
00039            << RESET << "----------\n"
00040            << "The json files to be processed into batch files.\n"
00041            << "Multiple files should be seperated by spaces!\n\n";
00042     exit(0);
00043 }
00044 void CommandLineHandler::printVersion() {
00045     LOG_INFO << "Printing version number...";
00046     OUTPUT << PROJECT_NAME << " v" << MAJOR_VERSION << "." << MINOR_VERSION << "."
00047            << PATCH_VERSION << "\n";
00048     exit(0);
00049 }
00050 void CommandLineHandler::printCredits() {
00051     LOG_INFO << "Printing credits...";
00052     OUTPUT << BOLD << "Project information:\n"
00053            << RESET << "----------\n"
00054            << CYAN << BOLD << PROJECT_NAME << RESET << " v" << MAJOR_VERSION
00055            << "." << MINOR_VERSION << "." << PATCH_VERSION << "\n"
00056            << "\n"
00057            << DESCRIPTION << "\n"
00058            << "\n"
00059            << GREEN << "Authors: " << RESET << ITALIC << AUTHORS << RESET << "\n"
00060            << GREEN << "Documentation: " << RESET << ITALIC << HOMEPAGE_URL
00061            << RESET << GREEN << "\nContact: " << RESET << ITALIC
00062            << "simon21.blum@gmail.com" << "\n";
00063     exit(0);
00064 }
00065
00066 std::vector<std::string> CommandLineHandler::parseArguments(int argc,
00067         char *argv[]) {
00068     LOG_INFO << "Parsing arguments...";
00069
00070     std::vector<std::string> files;
00071
00072     while (true) {
00073         int optIndex = -1;
00074         struct option longOption = {};
00075         auto result = getopt_long(argc, argv, "hvco:", options, &optIndex);
00076
00077         if (result == -1) {
00078             LOG_INFO << "End of options reached";
00079             break;
00080         }
00081
00082         switch (result) {
00083         case '?':
00084             LOG_ERROR << "Invalid Option (argument)\n";
00085             CommandLineHandler::printHelp();
00086
00087         case 'h':
00088             LOG_INFO << "Help option detected";
00089             CommandLineHandler::printHelp();
00090
00091         case 'v':
00092             LOG_INFO << "Version option detected";
00093             CommandLineHandler::printVersion();
```

```
00094
00095         case 'c':
00096             LOG_INFO « "Credit option detected";
00097             CommandLineHandler::printCredits();
00098
00099         case 'o':
00100             LOG_INFO « "Output option detected";
00101             LOG_DEBUG « "Output file: " « optarg;
00102             files.emplace_back(optarg);
00103             break;
00104
00105         case 0:
00106             LOG_INFO « "Long option without short version detected";
00107             longOption = options[optIndex];
00108             LOG_INFO « "Option: " « longOption.name « " given";
00109
00110             if (longOption.has_arg) {
00111                 LOG_INFO « "  Argument: " « optarg;
00112             }
00113
00114             if (strcmp(longOption.name, "verbose") == 0) {
00115                 logging::setVerboseMode(true);
00116                 LOG_INFO « "Verbose mode activated";
00117             }
00118
00119             break;
00120
00121         default:
00122             LOG_ERROR « "Default case for options reached!";
00123             break;
00124         }
00125     }
00126
00127     LOG_INFO « "Options have been parsed";
00128     LOG_INFO « "Checking for arguments...";
00129
00130     if (files.empty()) {
00131         files.emplace_back("");
00132     }
00133
00134     while (optind < argc) {
00135         LOG_INFO « "Adding file: " « argv[optind];
00136         files.emplace_back(argv[optind++]);
00137     }
00138
00139     LOG_INFO « "Arguments and options have been parsed";
00140     return files;
00141 }
00142 } // namespace cli
```

11.24 src/sources/FileData.cpp File Reference

```
#include "FileData.hpp"
#include "Exceptions.hpp"
#include "LoggingWrapper.hpp"
```

Include dependency graph for FileData.cpp:



Namespaces

- namespace parsing

  The namespace containing everything relevant to parsing.

11.24.1 Detailed Description

Author

Date

Version

Copyright

See LICENSE file

Definition in file FileData.cpp.

11.25 FileData.cpp

Go to the documentation of this file.

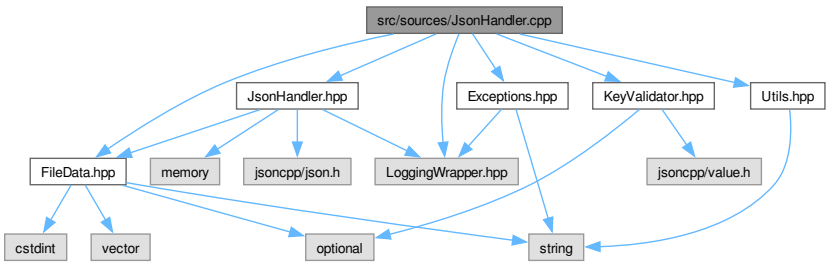
```
00001
00012 #include "FileData.hpp"
00013 #include "Exceptions.hpp"
00014 #include "LoggingWrapper.hpp"
00015
00016 namespace parsing {
00017 void FileData::setOutputFile(std::string &newOutputfile)
00018 {
00019     LOG_INFO « "Setting outputfile to...";
00020
00021     // If no value for key "outputfile"
00022     if (newOutputfile.empty()) {
00023         LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00024         throw exceptions::InvalidValueException("outputfile", "Outputfile can't be empty!");
00025     }
00026
00027     // If outputfile is already set
00028     if (!this->outputfile.empty()) {
00029         LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00030         throw exceptions::InvalidValueException("outputfile", "Outputfile is already set!");
00031     }
00032
00033     // If outputfile does not end with ".bat"
00034     if (!newOutputfile.ends_with(".bat")) {
00035         newOutputfile += ".bat";
00036         LOG_WARNING « "Outputfile does not end with \".bat\", adding it now: "
00037                     « newOutputfile;
00038     }
00039
00040     this->outputfile = newOutputfile;
00041     LOG_INFO « "Outputfile set to: " « this->outputfile « "\n";
00042 }
00043
00044 void FileData::setApplication(const std::string &newApplication)
00045 {
```

```
00046     if (newApplication.empty()) {
00047         LOG_INFO « "newApplication empty, returning";
00048         return;
00049     }
00050
00051     LOG_INFO « "Setting application to: " « newApplication « "\n";
00052     this->application.emplace(newApplication);
00053 }
00054
00055 void FileData::addCommand(const std::string &command)
00056 {
00057     if (command.empty()) {
00058         LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00059         throw exceptions::InvalidValueException("command", "Command value is empty!");
00060     }
00061
00062     LOG_INFO « "Adding command: " « command « "\n";
00063     this->commands.push_back(command);
00064 }
00065
00066 void FileData::addEnvironmentVariable(const std::string &name,
00067                                       const std::string &value)
00068 {
00069     if (name.empty()) {
00070         LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00071         throw exceptions::InvalidValueException("name", "Name value is empty!");
00072     }
00073
00074     if (value.empty()) {
00075         LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00076         throw exceptions::InvalidValueException("key", "Key value is empty");
00077     }
00078
00079     LOG_INFO « "Adding environment variable: " « name « "=" « value « "\n";
00080     this->environmentVariables.emplace_back(name, value);
00081 }
00082
00083 void FileData::addPathValue(const std::string &pathValue)
00084 {
00085     if (pathValue.empty()) {
00086         LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00087         throw exceptions::InvalidValueException("path", "Path value is empty");
00088     }
00089
00090     LOG_INFO « "Adding path value: " « pathValue « "\n";
00091     this->pathValues.push_back(pathValue);
00092 }
00093 } // namespace parsing
```

11.26 src/sources/JsonHandler.cpp File Reference

```
#include "JsonHandler.hpp"
#include "Exceptions.hpp"
#include "FileData.hpp"
#include "KeyValidator.hpp"
#include "LoggingWrapper.hpp"
#include "Utils.hpp"
```

Include dependency graph for JsonHandler.cpp:



Namespaces

- namespace parsing

  The namespace containing everything relevant to parsing.

11.26.1 Detailed Description

Author

Date

Version

Copyright

See LICENSE file

Definition in file JsonHandler.cpp.

11.27 JsonHandler.cpp

Go to the documentation of this file.

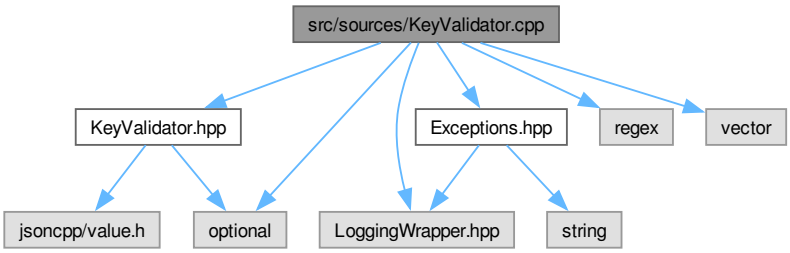
```
00001
00012 #include "JsonHandler.hpp"
00013 #include "Exceptions.hpp"
00014 #include "FileData.hpp"
00015 #include "KeyValidator.hpp"
00016 #include "LoggingWrapper.hpp"
00017 #include "Utils.hpp"
00018
00019 namespace parsing {
00020 JsonHandler::JsonHandler(const std::string &filename) {
00021     LOG_INFO << "Initializing JSONHandler with filename: " << filename << "\n";
00022     this->root = parseFile(filename);
00023 }
00024
00025 std::shared_ptr<Json::Value> JsonHandler::parseFile(const std::string &filename)
00026
00027 {
00028     LOG_INFO << "Parsing file: " << filename << "\n";
00029     std::ifstream file(filename);
00030     Json::Value newRoot;
00031
00032     // Json::Reader.parse() returns false if parsing fails
00033     if (Json::Reader reader; !reader.parse(file, newRoot)) {
00034         throw exceptions::ParsingException(filename);
00035     }
00036
00037     // Validate keys
00038     // Check for errors
00039     if (auto errors = KeyValidator::getInstance().validateKeys(newRoot, filename);
00040             !errors.empty()) {
00041         throw exceptions::InvalidKeyException(errors);
00042     }
00043
00044     LOG_INFO << "File \"" << filename << "\" has been parsed\n";
00045     return std::make_shared<Json::Value>(newRoot);
```

```
00046 }
00047
00048 std::shared_ptr<FileData> JsonHandler::getFileData() {
00049     LOG_INFO << "Creating FileData object for return...\n";
00050     return this->createFileData();
00051 }
00052
00053 std::shared_ptr<FileData> JsonHandler::createFileData() {
00054     LOG_INFO << "Creating FileData object...\n";
00055     this->data = std::make_shared<FileData>();
00056     this->assignOutputFile();
00057     this->assignHideShell();
00058     this->assignApplication();
00059     this->assignEntries();
00060     return this->data;
00061 }
00062
00063 void JsonHandler::assignOutputFile() const {
00064     LOG_INFO << "Assigning outputfile...\n";
00065     std::string outputFile = this->root->get("outputfile", "").asString();
00066
00067     if (utilities::Utils::checkIfFileExists(outputFile)) {
00068         throw exceptions::FileExistsException(outputFile);
00069     }
00070
00071     this->data->setOutputFile(outputFile);
00072 }
00073
00074 void JsonHandler::assignHideShell() const {
00075     LOG_INFO << "Assigning hide shell...\n";
00076     // If the 'hideshell' key is not given, it defaults to false
00077     bool hideShell = this->root->get("hideshell", false).asBool();
00078     this->data->setHideShell(hideShell);
00079 }
00080
00081 void JsonHandler::assignApplication() const {
00082     LOG_INFO << "Assigning application...\n";
00083     std::string application = this->root->get("application", "").asString();
00084     this->data->setApplication(application);
00085 }
00086
00087 void JsonHandler::assignEntries() const {
00088     LOG_INFO << "Assigning entries...\n";
00089
00090     for (const auto &entry : this->root->get("entries", "")) {
00091         std::string entryType = entry.get("type", "").asString();
00092
00093         if (entryType == "EXE") {
00094             LOG_INFO << "Calling function to assign command...\n";
00095             this->assignCommand(entry);
00096         } else if (entryType == "ENV") {
00097             LOG_INFO << "Calling function to assign environment variable...\n";
00098             this->assignEnvironmentVariable(entry);
00099         } else if (entryType == "PATH") {
00100             LOG_INFO << "Calling function to assign path value...\n";
00101             this->assignPathValue(entry);
00102         } else {
00103             // Due to validation beforehand - this should never be reached!
00104             throw exceptions::UnreachableCodeException(
00105                 "Unknown entries should be caught by KeyValidator!\nPlease report "
00106                 "this bug!");
00107         }
00108     }
00109 }
00110
00111 void JsonHandler::assignCommand(const Json::Value &entry) const {
00112     LOG_INFO << "Assigning command...\n";
00113     std::string command = entry.get("command", "").asString();
00114     this->data->addCommand(command);
00115 }
00116
00117 void JsonHandler::assignEnvironmentVariable(const Json::Value &entry) const {
00118     LOG_INFO << "Assigning environment variable...\n";
00119     std::string key = entry.get("key", "").asString();
00120     std::string value = entry.get("value", "").asString();
00121     this->data->addEnvironmentVariable(key, value);
00122 }
00123
00124 void JsonHandler::assignPathValue(const Json::Value &entry) const {
00125     LOG_INFO << "Assigning path value...\n";
00126     std::string pathValue = entry.get("path", "").asString();
00127     this->data->addPathValue(pathValue);
00128 }
00129 } // namespace parsing
```

11.28 src/sources/KeyValidator.cpp File Reference

```
#include "KeyValidator.hpp"
#include "Exceptions.hpp"
#include "LoggingWrapper.hpp"
#include <optional>
#include <regex>
#include <vector>
```

Include dependency graph for KeyValidator.cpp:



Namespaces

- namespace parsing

  The namespace containing everything relevant to parsing.

11.28.1 Detailed Description

Author

Date

Version

Copyright

See LICENSE file

Definition in file KeyValidator.cpp.

11.29 KeyValidator.cpp

Go to the documentation of this file.

```
00001
00011 #include "KeyValidator.hpp"
00012 #include "Exceptions.hpp"
00013 #include "LoggingWrapper.hpp"
00014 #include <optional>
00015 #include <regex>
00016 #include <vector>
00017
00018 namespace parsing {
00019 KeyValidator &KeyValidator::getInstance() {
00020     static KeyValidator keyValidator;
00021     LOG_INFO << "Returning KeyValidator instance!";
00022     return keyValidator;
00023 }
00024 std::vector<std::tuple<int, std::string>>
00025 KeyValidator::validateKeys(const Json::Value &root,
00026                            const std::string &filename) {
00027
00028     // Initiate vector , with wrong keys at top leve
00029     std::vector<std::tuple<int, std::string>> wrongKeys =
00030         getWrongKeys(root, filename);
00031
00032     // Go through the entry keys
00033     for (Json::Value entries = root.get("entries", "");
00034             const auto &entry : entries) {
00035
00036         // Retrieve all EntryKeys
00037         std::vector<std::string> entryKeys = entry.getMemberNames();
00038
00039         // Add all invalid entries to an array
00040         auto wrongEntries = validateEntries(filename, entryKeys);
00041
00042         // Append the invalid entries to the invalid keys
00043         wrongKeys.insert(wrongKeys.end(), wrongEntries.begin(), wrongEntries.end());
00044
00045         // Validate that each entry has it's necessary keys
00046         validateTypes(filename, entry, entryKeys);
00047     }
00048
00049     return wrongKeys;
00050 }
00051
00052 std::vector<std::tuple<int, std::string>>
00053 KeyValidator::getWrongKeys(const Json::Value &root,
00054                            const std::string &filename) {
00055     std::vector<std::tuple<int, std::string>> wrongKeys = {};
00056
00057     // Go through each key at top level
00058     for (std::vector<std::string> keys = root.getMemberNames();
00059             const auto &key : keys) {
00060         // Iterator tries to find the key within the valid keys
00061         auto keyIterator = std::ranges::find(validKeys, key);
00062
00063         // If the valid key isn't found, the iterator will be at the end
00064         if (keyIterator == validKeys.end()) {
00065             auto error = getUnknownKeyLine(filename, key);
00066
00067             if (!error.has_value()) {
00068                 LOG_ERROR << "Unable to find line of wrong key!";
00069                 continue;
00070             }
00071
00072             // Add the wrong key to the array
00073             wrongKeys.emplace_back(error.value_or(-1), key);
00074         }
00075     }
00076     return wrongKeys;
00077 }
00078
00079 std::vector<std::tuple<int, std::string>>
00080 KeyValidator::validateEntries(const std::string &filename,
00081                               const std::vector<std::string> &entryKeys) {
00082     std::vector<std::tuple<int, std::string>> wrongKeys = {};
00083
00084     // Go through each key within the entries
00085     for (const auto &key : entryKeys) {
00086         // try to find the key within the valid entry keys
00087         auto keyIterator = std::ranges::find(validEntryKeys, key);
00088
00089         // if the key isn't found, the iterator will be at the end
00090         if (keyIterator == validEntryKeys.end()) {
00091             auto error = getUnknownKeyLine(filename, key);
```

```
00092
00093             if (!error.has_value()) {
00094                 LOG_ERROR << "Unable to find line of wrong key!";
00095                 continue;
00096             }
00097
00098             // Add the wrong key to the array
00099             wrongKeys.emplace_back(error.value(), key);
00100         }
00101     }
00102
00103     return wrongKeys;
00104 }
00105
00106 void KeyValidator::validateTypes(const std::string &filename,
00107                                  const Json::Value &entry,
00108                                  std::vector<std::string> &entryKeys) {
00109     // Retrieve the type of the entry - ERROR if it can't be found
00110     std::string type = entry.get("type", "ERROR").asString();
00111
00112     if (type == "EXE") {
00113         // Try to find the "command" key
00114         if (auto commandIterator = std::ranges::find(entryKeys, "command");
00115                 commandIterator == entryKeys.end()) {
00116             throw exceptions::MissingKeyException("command", "EXE");
00117         }
00118     } else if (type == "PATH") {
00119         // Try to find the "path" key
00120         if (auto pathIterator = std::ranges::find(entryKeys, "path");
00121                 pathIterator == entryKeys.end()) {
00122             throw exceptions::MissingKeyException("path", "PATH");
00123         }
00124     } else if (type == "ENV") {
00125         // Try to find the "key" key
00126         if (auto keyIterator = std::ranges::find(entryKeys, "key");
00127                 keyIterator == entryKeys.end()) {
00128             throw exceptions::MissingKeyException("key", "ENV");
00129         }
00130         // Try to find the "value" key
00131         if (auto valueIterator = std::ranges::find(entryKeys, "value");
00132                 valueIterator == entryKeys.end()) {
00133             throw exceptions::MissingKeyException("value", "ENV");
00134         }
00135     } else if (type == "ERROR") {
00136         // If the "type" key wasn't found, throw an error
00137         throw exceptions::MissingTypeException();
00138     } else {
00139         // If the type wasn't any of the above, it's invalid
00140         std::optional<int> line = getUnknownKeyLine(filename, type);
00141
00142         if (!line.has_value()) {
00143             LOG_INFO << "Unable to find line of wrong type!";
00144         }
00145
00146         throw exceptions::InvalidTypeException(type, line.value());
00147     }
00148 }
00149
00150 std::optional<int>
00151 KeyValidator::getUnknownKeyLine(const std::string &filename,
00152                                 const std::string &wrongKey) {
00153     std::ifstream file(filename);
00154
00155     if (!file.is_open()) {
00156         LOG_ERROR << "File not open!";
00157     }
00158
00159     int lineNumber = 1;
00160     std::string errorLine;
00161     std::regex wrongKeyPattern("\\b" + wrongKey + "\\b");
00162
00163     // Go through each line of the file and search for the wrong key
00164     for (std::string line; std::getline(file, line);) {
00165         if (std::regex_search(line, wrongKeyPattern)) {
00166             errorLine = line;
00167             break;
00168         }
00169
00170         ++lineNumber;
00171     }
00172
00173     if (errorLine.empty()) {
00174         return std::nullopt;
00175     }
00176
00177     return lineNumber;
00178 }
```

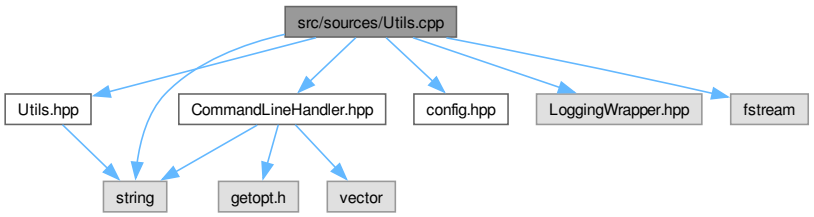
```
00179
00180 } // namespace parsing
```

11.30 src/sources/Utils.cpp File Reference

Implementation for the Utils class.

```
#include "Utils.hpp"
#include "CommandLineHandler.hpp"
#include "config.hpp"
#include <LoggingWrapper.hpp>
#include <fstream>
#include <string>
```

Include dependency graph for Utils.cpp:



Namespaces

- namespace utilities

  Includes all utilities.

11.30.1 Detailed Description

Implementation for the Utils class.

Author

Simon Blum

Date

2024-04-18

Version

0.1.5

This file includes the implementation for the Utils class.

See also

src/include/utility/Utilities.hpp

Copyright

See LICENSE file

Definition in file Utils.cpp.

11.31 Utils.cpp

Go to the documentation of this file.

```
00001
00015 #include "Utils.hpp"
00016 #include "CommandLineHandler.hpp"
00017 #include "config.hpp"
00018
00019 #include <LoggingWrapper.hpp>
00020 #include <fstream>
00021 #include <string>
00022
00023 namespace utilities {
00024 void Utils::setupEasyLogging(const std::string &configFile) {
00025     el::Configurations conf(configFile);
00026     el::Loggers::reconfigureAllLoggers(conf);
00027     LOG_INFO « "Running " « PROJECT_NAME « " v" « MAJOR_VERSION « "."
00028              « MINOR_VERSION « "." « PATCH_VERSION;
00029     LOG_INFO « "For more Information checkout " « HOMEPAGE_URL;
00030     LOG_INFO « "EasyLogging has been setup!";
00031 }
00032 bool Utils::checkIfFileExists(const std::string &fileName) {
00033     LOG_INFO « "Checking if file \"" « fileName « "\"exists...";
00034     std::ifstream file(fileName);
00035     return file.good();
00036 }
00037 bool Utils::checkFileEnding(const std::string_view &fileName) {
00038     return fileName.size() >= 5 && fileName.ends_with(".json");
00039 }
00040 bool Utils::askToContinue(const std::string &prompt) {
00041     std::string userInput;
00042     LOG_INFO « "Asking for user Confirmation to continue...";
00043     OUTPUT « cli::BOLD « prompt « cli::RESET;
00044
00045     do {
00046         std::cin » userInput;
00047         std::ranges::transform(userInput, userInput.begin(), ::tolower);
00048
00049         if (userInput != "y" && userInput != "yes" && userInput != "n" &&
00050                 userInput != "no") {
00051             LOG_INFO « "Wrong user input!";
00052             OUTPUT « cli::ITALIC « "Please enter Y/Yes or N/No!\n" « cli::RESET;
00053             continue;
00054         }
00055
00056         break;
00057     } while (true);
00058
00059     return userInput == "y" || userInput == "yes";
00060 }
00061 } // namespace utilities
```

Index