JSON2Batch

0.2.2

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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: 0.2.2

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

Documentation: `https://dhbwprojectsit23.github.io/JSON2Bat`

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

File BatchCreator.hpp

Documentation in english

Member BatchCreator::getDataStream () const

Documentation

Member cli::CommandLineHandler::parseArguments (int argc, char ∗argv[])

Update documentation

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

Documentation

Member exceptions::NoSuchDirException::NoSuchDirException (const std::string &dir)

Documentation

Member main (int argc, char ∗argv[])

Documentation

Refactoring

page Main Page

Update README.md

Namespace parsing

Document – map/set for efficient

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

Documentation

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

Documentation

Member utilities::Utils::checkDirectory (std::string &directory)

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 117 of file CommandLineHandler.hpp.

9.2 config Namespace Reference

Variables

- constexpr auto LOG_CONFIG
- constexpr auto EXECUTABLE_NAME = "json2batch"
- constexpr auto MAJOR_VERSION = "0"
- constexpr auto MINOR_VERSION = "2"
- constexpr auto PATCH_VERSION = "2"
- constexpr auto DESCRIPTION = "A simple tool to convert json to batch."
- constexpr auto PROJECT_NAME = "JSON2Batch"
- constexpr auto AUTHORS
- constexpr auto HOMEPAGE_URL

9.2.1 Variable Documentation

9.2.1.1 AUTHORS

```
constexpr auto config::AUTHORS  [inline], [constexpr]
```

Initial value:

```
=
    "Elena Schwarzbach, Max Rodler, Simon Blum, Sonia Sinaci"
```

Definition at line 32 of file config.hpp.

9.2.1.2 DESCRIPTION

```
constexpr auto config::DESCRIPTION = "A simple tool to convert json to batch."  [inline],
[constexpr]
```

Definition at line 30 of file config.hpp.

9.2.1.3 EXECUTABLE_NAME

```
constexpr auto config::EXECUTABLE_NAME = "json2batch"  [inline], [constexpr]
```

Definition at line 26 of file config.hpp.

9.2.1.4 HOMEPAGE_URL

```
constexpr auto config::HOMEPAGE_URL  [inline], [constexpr]
```

Initial value:

```
=
    "https://dhbwprojectsit23.github.io/JSON2Bat"
```

Definition at line 34 of file config.hpp.

9.2.1.5 LOG_CONFIG

```
constexpr auto config::LOG_CONFIG  [inline], [constexpr]
```

Initial value:

```
= "/home/simon/1_Coding/projectJsonToBat/"
                                "build/Release/config/easylogging.conf"
```

Definition at line 24 of file config.hpp.

9.2.1.6 MAJOR_VERSION

```
constexpr auto config::MAJOR_VERSION = "0"  [inline], [constexpr]
```

Definition at line 27 of file config.hpp.

9.2.1.7 MINOR_VERSION

```
constexpr auto config::MINOR_VERSION = "2"  [inline], [constexpr]
```

Definition at line 28 of file config.hpp.

9.2.1.8 PATCH_VERSION

```
constexpr auto config::PATCH_VERSION = "2"  [inline], [constexpr]
```

Definition at line 29 of file config.hpp.

9.2.1.9 PROJECT_NAME

```
constexpr auto config::PROJECT_NAME = "JSON2Batch"  [inline], [constexpr]
```

Definition at line 31 of file config.hpp.

9.3 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 NoSuchDirException
- class ParsingException

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

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

9.3.1 Detailed Description

Namespace used for customized exceptions.

9.4 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.

9.4.1 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

Todo Document – map/set for efficient

9.5 utilities Namespace Reference

Includes all utilities.

Classes

- class Utils

  Responsible for utility function.

9.5.1 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.
- std::shared_ptr< std::stringstream > getDataStream () const

Private Member Functions

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

Private Attributes

- std::shared_ptr< std::stringstream > dataStream
- 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 27 of file BatchCreator.hpp.

10.1.2 Constructor & Destructor Documentation

10.1.2.1 BatchCreator()

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

Initialisiert BatchCreator.

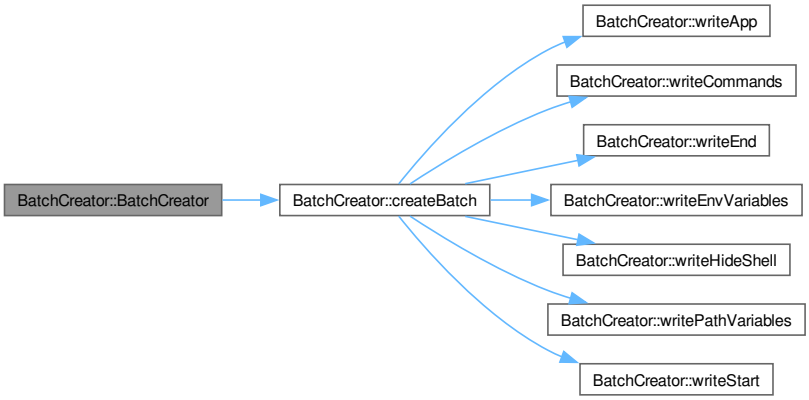
Parameters

filename	

Definition at line 17 of file BatchCreator.cpp.

References createBatch(), and dataStream.

Here is the call graph for this function:



10.1.3 Member Function Documentation

10.1.3.1 createBatch()

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

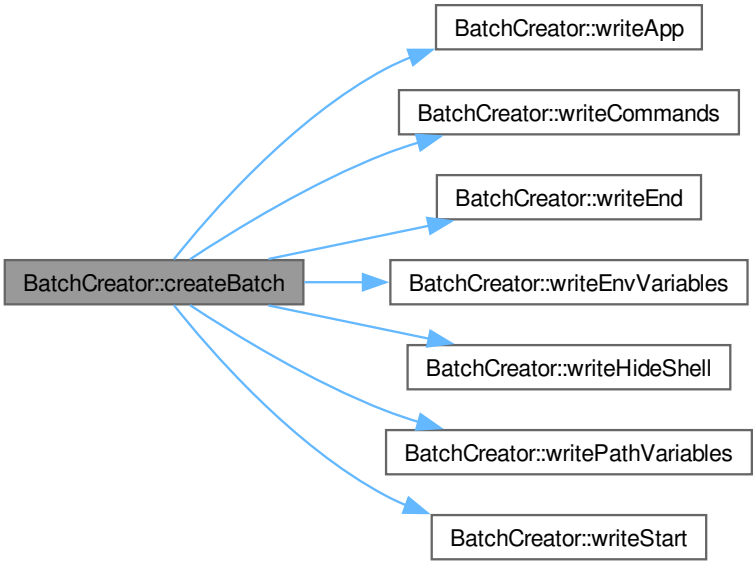
Setzt batch Datei zusammen.

Beinhaltet Aufrufe der einzelnen Komponenten der batch Datei

Definition at line 24 of file BatchCreator.cpp.

References 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 getDataStream()

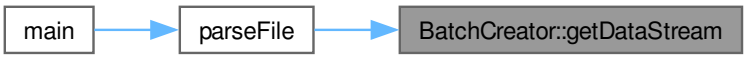
```
std::shared_ptr< std::stringstream > BatchCreator::getDataStream ( ) const  [inline]
```

Todo Documentation

Definition at line 39 of file BatchCreator.hpp.

References dataStream.

Here is the caller graph for this function:



10.1.3.3 writeApp()

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

Öffnet Anwednung falls gewünscht.

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

Definition at line 76 of file BatchCreator.cpp.

References dataStream, and fileData.

Here is the caller graph for this function:

10.1.3.4 writeCommands()

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

Befehle ausführen.

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

Definition at line 52 of file BatchCreator.cpp.

References dataStream, and fileData.

Here is the caller graph for this function:

10.1.3.5 writeEnd()

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

Ende der Batch Datei.

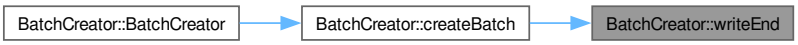
Schreibt den teil der Batch Datei der immer gleich ist

- setzt ECHO OFF

Definition at line 89 of file BatchCreator.cpp.

References dataStream.

Here is the caller graph for this function:



10.1.3.6 writeEnvVariables()

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

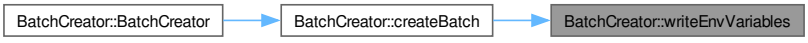
Umgebungsvariablen setzten.

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

Definition at line 60 of file BatchCreator.cpp.

References dataStream, and fileData.

Here is the caller graph for this function:



10.1.3.7 writeHideShell()

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

Sichtbarkeit Konsole.

Zeigt bzw. versteckt Konsolenausgabe

Definition at line 41 of file BatchCreator.cpp.

References dataStream, and fileData.

Here is the caller graph for this function:

10.1.3.8 writePathVariables()

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

Pfade setzten.

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

Definition at line 67 of file BatchCreator.cpp.

References dataStream, and fileData.

Here is the caller graph for this function:

10.1.3.9 writeStart()

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

Anfang der Batch Datei.

Schreibt den Teil der Batch Datei der immer gleich ist.

- setzt ECHO off
- startet cmd.exe

Definition at line 36 of file BatchCreator.cpp.

References dataStream.

Here is the caller graph for this function:

10.1.4 Member Data Documentation

10.1.4.1 dataStream

```
std::shared_ptr<std::stringstream> BatchCreator::dataStream  [private]
```

Definition at line 44 of file BatchCreator.hpp.

10.1.4.2 fileData

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

Definition at line 46 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::tuple< std::optional< std::string >, 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 53 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::tuple< std::optional< std::string >, std::vector< std::string > > cli::CommandLine↩
Handler::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

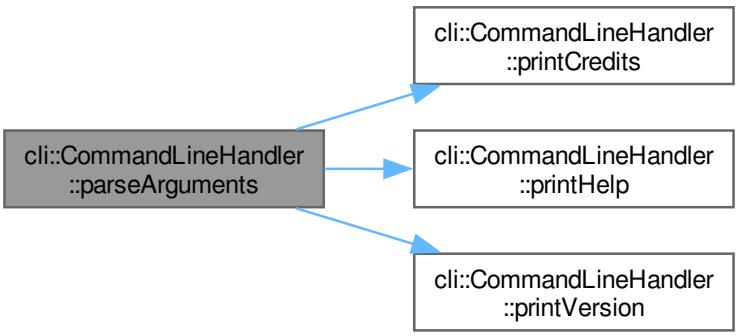
Returns a vector of strings containing all filenames.

Todo Update documentation

Definition at line 70 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.

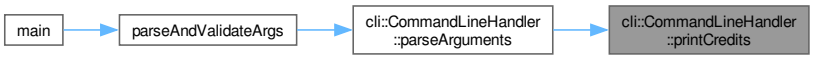
Note

This function ends the application.

Definition at line 50 of file CommandLineHandler.cpp.

References config::AUTHORS, config::DESCRIPTION, config::HOMEPAGE_URL, config::MAJOR_VERSION, config::MINOR_VERSION, config::PATCH_VERSION, and config::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.

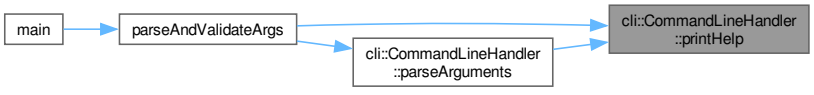
Note

This function ends the application.

Definition at line 22 of file CommandLineHandler.cpp.

References config::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.

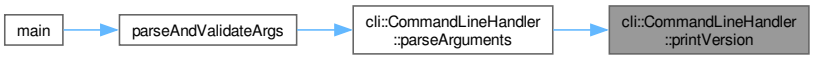
Note

This function ends the application.

Definition at line 44 of file CommandLineHandler.cpp.

References config::MAJOR_VERSION, config::MINOR_VERSION, config::PATCH_VERSION, and config::PROJECT_NAME.

Here is the caller graph for this function:



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

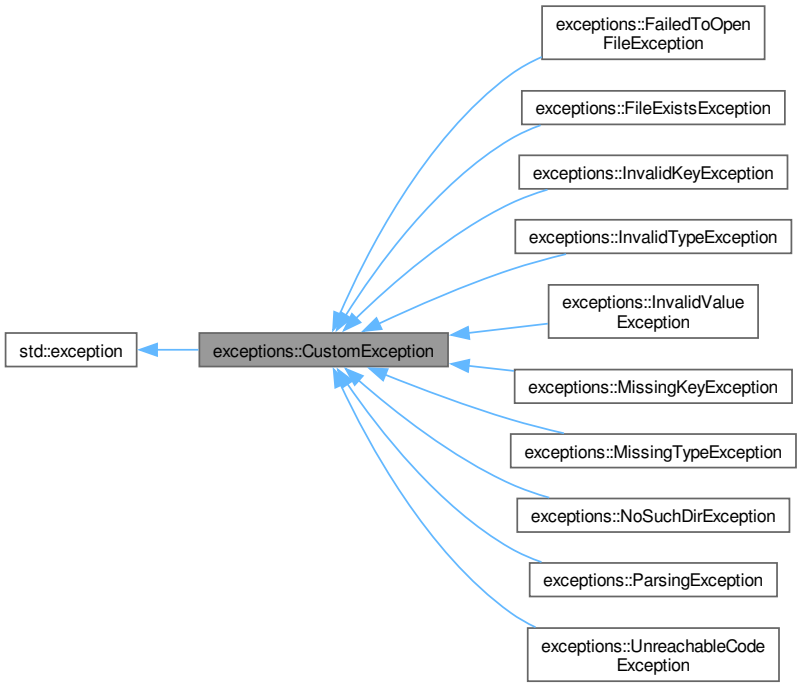
- src/include/CommandLineHandler.hpp
- src/sources/CommandLineHandler.cpp

10.3 exceptions::CustomException Class Reference

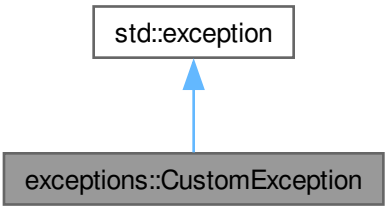
Base class for all custom exceptions.

```
#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.

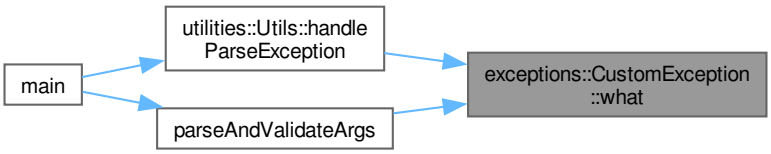
10.3.2 Member Function Documentation

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:



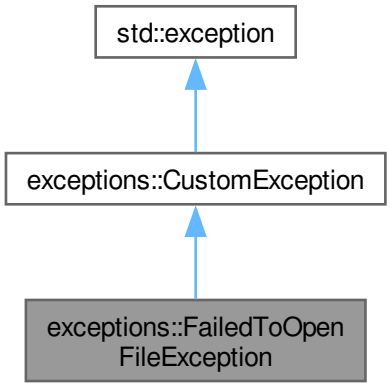
The documentation for this class was generated from the following file:

- src/include/Exceptions.hpp

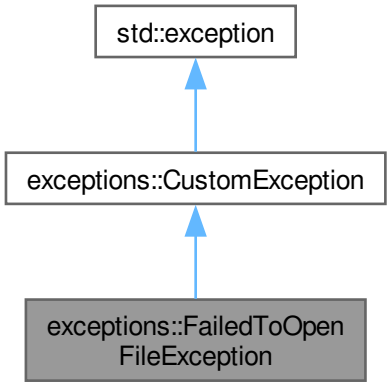
10.4 exceptions::FailedToOpenFileException Class Reference

```
#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 246 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 252 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 256 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 248 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 82 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 114 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 122 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 131 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 108 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 102 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 139 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 45 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 146 of file FileData.hpp.

10.5.3.2 commands

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

Definition at line 147 of file FileData.hpp.

10.5.3.3 environmentVariables

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

Definition at line 148 of file FileData.hpp.

10.5.3.4 hideShell

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

Definition at line 145 of file FileData.hpp.

10.5.3.5 outputfile

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

Definition at line 144 of file FileData.hpp.

10.5.3.6 pathValues

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

Definition at line 149 of file FileData.hpp.

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

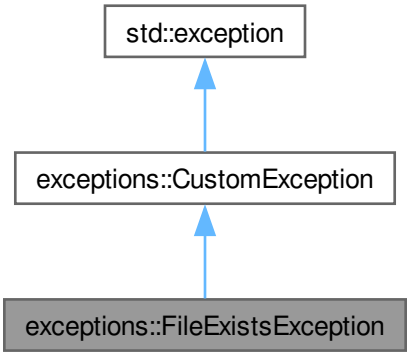
- src/include/FileData.hpp
- src/sources/FileData.cpp

10.6 exceptions::FileExistsException Class Reference

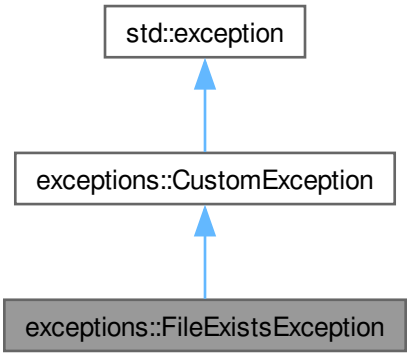
Exception for an already exisiting outputfile.

```
#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:

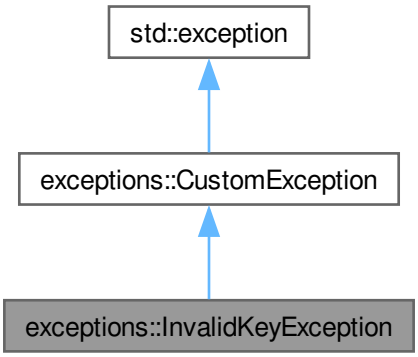
- src/include/Exceptions.hpp

10.7 exceptions::InvalidKeyException Class Reference

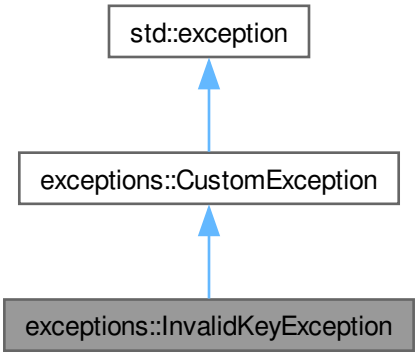
Exception for invalid keys.

```
#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 143 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:

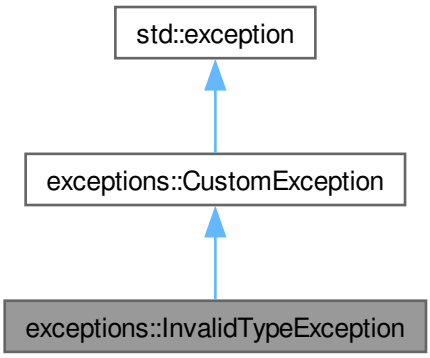
- src/include/Exceptions.hpp

10.8 exceptions::InvalidTypeException Class Reference

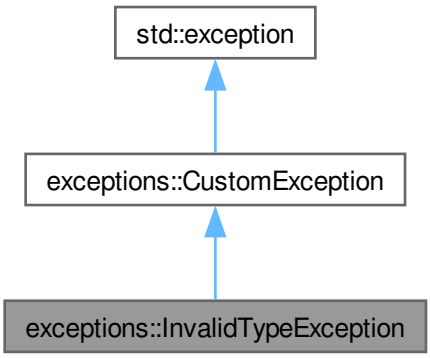
Exception for invalid types.

```
#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 156 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 162 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 173 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 159 of file Exceptions.hpp.

10.8.4.2 type

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

Definition at line 158 of file Exceptions.hpp.

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

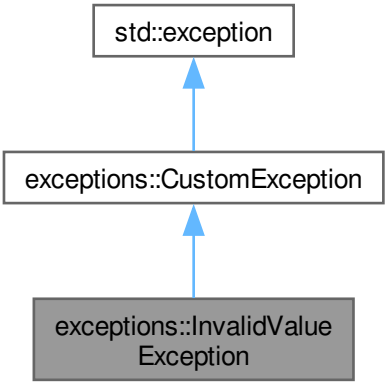
- src/include/Exceptions.hpp

10.9 exceptions::InvalidValueException Class Reference

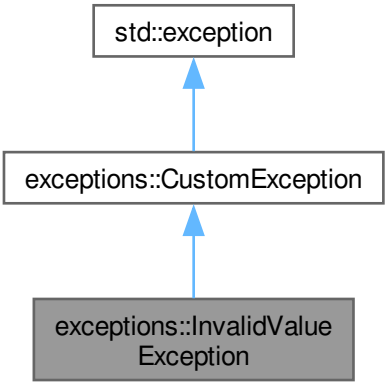
Exception for an ivalid (usually empty) value field.

`#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.

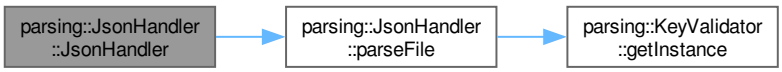
Parameters

filename	Name of the json file

Definition at line 19 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 75 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 104 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

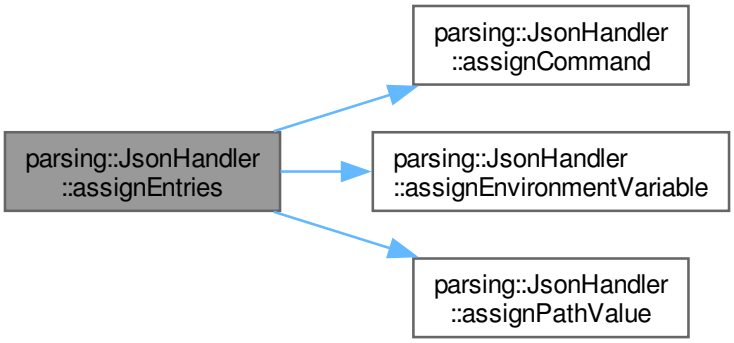
Exceptions

exceptions::UnreachableCodeException	

Definition at line 80 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 109 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 69 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 62 of file JsonHandler.cpp.

References data, and root.

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 116 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.

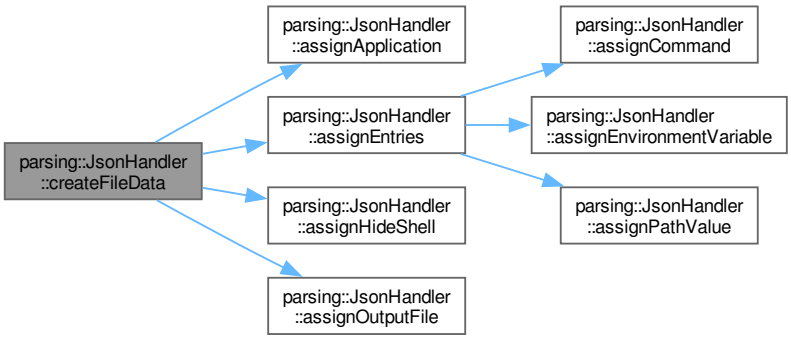
Returns

Pointer to the created instance of FileData

Definition at line 52 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.

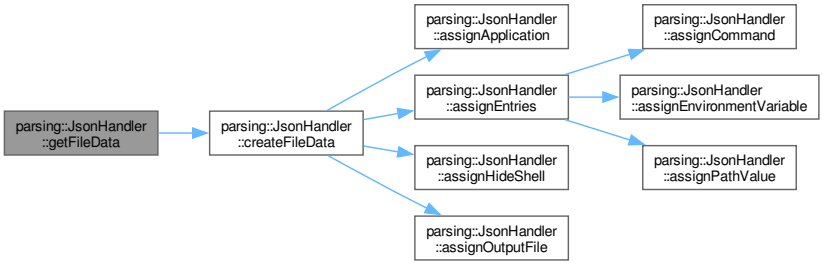
Returns

Pointer to the FileData Object with the parsed data from json

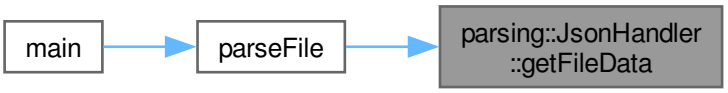
Definition at line 47 of file JsonHandler.cpp.

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()

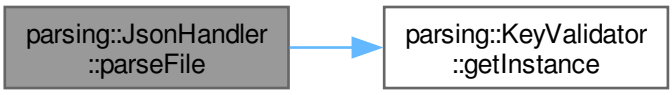
Exceptions

exceptions::ParsingException	
exceptions::InvalidKeyException	

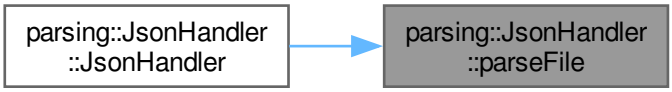
Definition at line 24 of file JsonHandler.cpp.

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) const

  Retrieve the wrong keys from a Json::Value object.
- void validateTypes (const std::string &filename, const Json::Value &entry, const std::unordered_set< std::string > &entryKeys)

  Validates types from the entries array.
- std::vector< std::tuple< int, std::string > > validateEntries (const std::string &filename, const std::unordered_set< std::string > &entryKeys) const

  Validates that an entries 'type' key is valid.

Static Private Member Functions

- static std::optional< int > getUnknownKeyLine (const std::string &filename, const std::string &wrongKey)

Private Attributes

- std::unordered_set< std::string > validKeys
- std::unordered_set< std::string > validEntryKeys
- std::unordered_map< std::string_view, std::vector< std::string > > typeToKeys

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 28 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 21 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

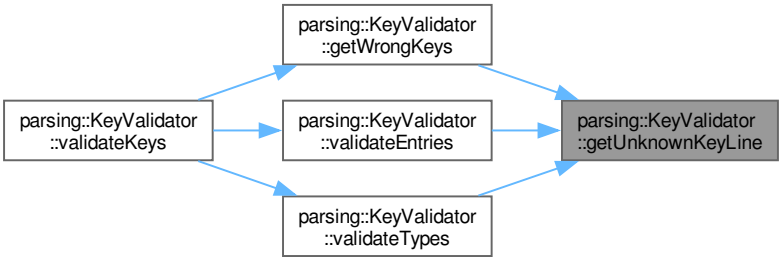
filename	
wrongKey	

Returns

Todo Documentation

Definition at line 117 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 ) const  [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.

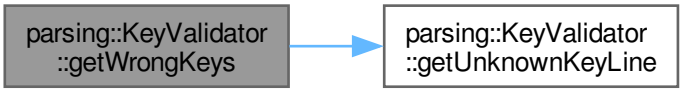
Returns

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

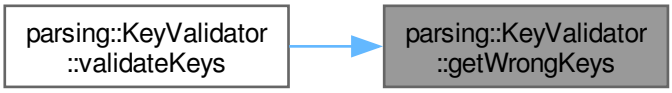
Definition at line 51 of file KeyValidator.cpp.

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::unordered_set< std::string > & entryKeys ) const  [private]
```

Validates that an entries 'type' key is valid.

Parameters

filename	
entryKeys	

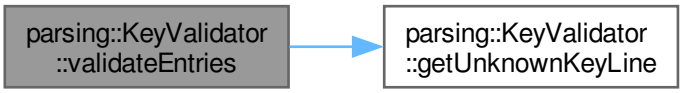
Returns

Todo Documentation

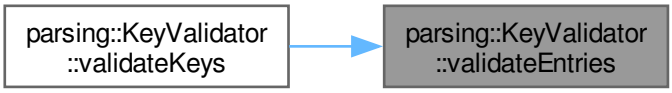
Definition at line 71 of file KeyValidator.cpp.

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.

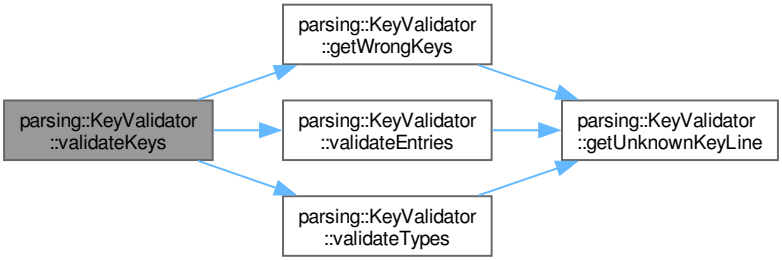
Returns

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

Definition at line 28 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,
            const std::unordered_set< std::string > & entryKeys )  [private]
```

Validates types from the entries array.

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

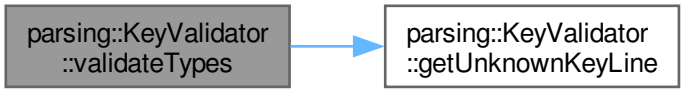
Parameters

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

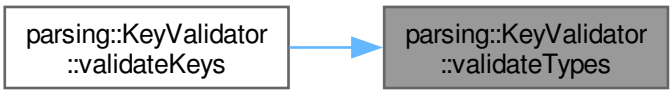
Definition at line 92 of file KeyValidator.cpp.

References getUnknownKeyLine(), and typeToKeys.

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 typeToKeys

```
std::unordered_map<std::string_view, std::vector<std::string> > parsing::KeyValidator::type↩
ToKeys  [private]
```

Initial value:

```
= {
      {"EXE", {"command"}}, {"PATH", {"path"}}, {"ENV", {"key", "value"}}}
```

Definition at line 113 of file KeyValidator.hpp.

10.11.3.2 validEntryKeys

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

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

Definition at line 110 of file KeyValidator.hpp.

10.11.3.3 validKeys

```
std::unordered_set<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:

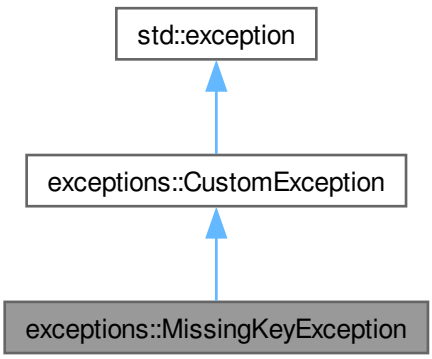
- src/include/KeyValidator.hpp
- src/sources/KeyValidator.cpp

10.12 exceptions::MissingKeyException Class Reference

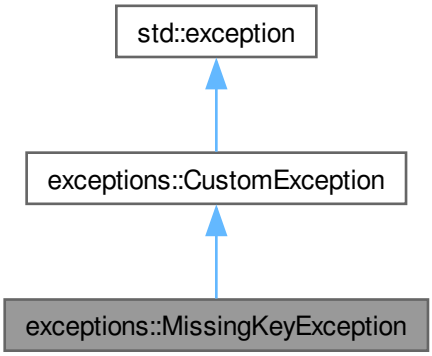
Exception for missing keys within entries.

```
#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 185 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 192 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 204 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 189 of file Exceptions.hpp.

10.12.4.2 message

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

Definition at line 187 of file Exceptions.hpp.

10.12.4.3 type

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

Definition at line 188 of file Exceptions.hpp.

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

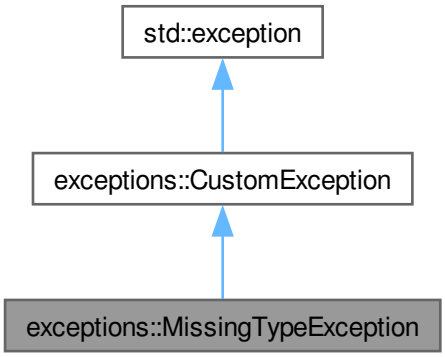
- src/include/Exceptions.hpp

10.13 exceptions::MissingTypeException Class Reference

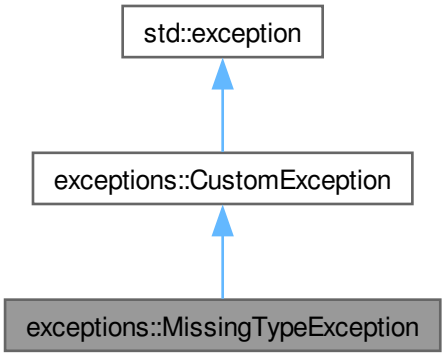
Exception for missing types of entries.

`#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 215 of file Exceptions.hpp.

10.13.2 Constructor & Destructor Documentation

10.13.2.1 MissingTypeException()

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

Definition at line 220 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 223 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 217 of file Exceptions.hpp.

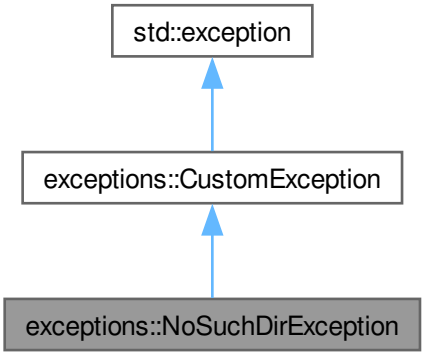
The documentation for this class was generated from the following file:

- src/include/Exceptions.hpp

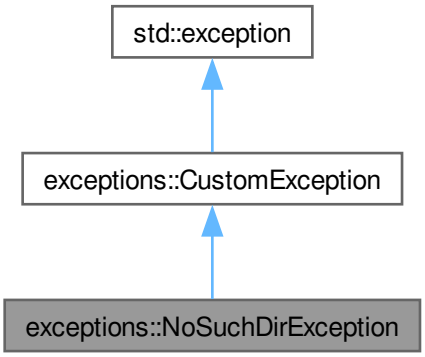
10.14 exceptions::NoSuchDirException Class Reference

`#include <Exceptions.hpp>`

Inheritance diagram for exceptions::NoSuchDirException:



Collaboration diagram for exceptions::NoSuchDirException:



Public Member Functions

- NoSuchDirException (const std::string &dir)
- const char * what () const noexcept override

Public Member Functions inherited from exceptions::CustomException

- const char * what () const noexcept override

Private Attributes

- std::string message

10.14.1 Detailed Description

Definition at line 261 of file Exceptions.hpp.

10.14.2 Constructor & Destructor Documentation

10.14.2.1 NoSuchDirException()

```
exceptions::NoSuchDirException::NoSuchDirException (
            const std::string & dir )  [inline], [explicit]
```

Todo Documentation

Definition at line 267 of file Exceptions.hpp.

References message.

10.14.3 Member Function Documentation

10.14.3.1 what()

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

Definition at line 271 of file Exceptions.hpp.

References message.

10.14.4 Member Data Documentation

10.14.4.1 message

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

Definition at line 263 of file Exceptions.hpp.

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

- src/include/Exceptions.hpp

10.15 options Struct Reference

The struct containing all possible options.

`#include <CommandLineHandler.hpp>`

10.15.1 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:

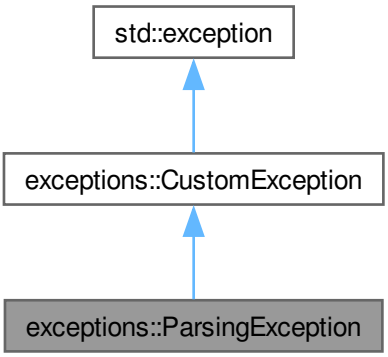
- src/include/CommandLineHandler.hpp

10.16 exceptions::ParsingException Class Reference

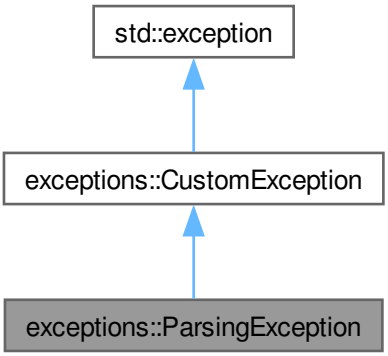
Exception for syntax errors within the json file.

`#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

10.16.1 Detailed Description

Exception for syntax errors within the json file.

Definition at line 41 of file Exceptions.hpp.

10.16.2 Constructor & Destructor Documentation

10.16.2.1 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.

10.16.3 Member Function Documentation

10.16.3.1 what()

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

Definition at line 60 of file Exceptions.hpp.

References message.

10.16.4 Member Data Documentation

10.16.4.1 file

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

Definition at line 43 of file Exceptions.hpp.

10.16.4.2 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:

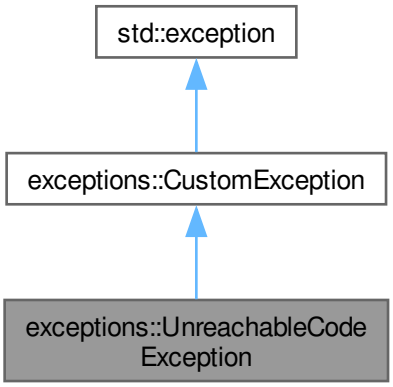
- src/include/Exceptions.hpp

10.17 exceptions::UnreachableCodeException Class Reference

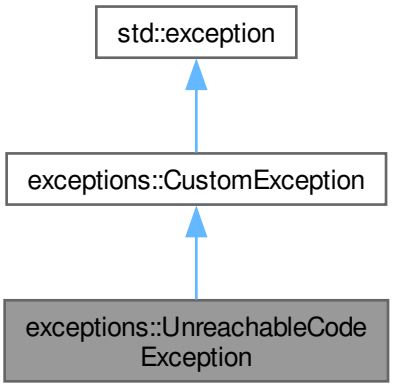
Exception for when the application reaches code it shouldn't reach.

```
#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

10.17.1 Detailed Description

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

Definition at line 232 of file Exceptions.hpp.

10.17.2 Constructor & Destructor Documentation

10.17.2.1 UnreachableCodeException()

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

Definition at line 237 of file Exceptions.hpp.

References message.

10.17.3 Member Function Documentation

10.17.3.1 what()

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

Definition at line 241 of file Exceptions.hpp.

References message.

10.17.4 Member Data Documentation

10.17.4.1 message

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

Definition at line 234 of file Exceptions.hpp.

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

- src/include/Exceptions.hpp

10.18 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 handleParseException (const exceptions::CustomException &e, const std::vector< std::string >↩ ::iterator &file, const std::vector< std::string > &files)
- static bool askToContinue (const std::string &prompt="Do you want to continue? (Y/N)\n")

  Asks if the user wants to continue.
- static void checkConfigFile (const std::string &configFile)

  Checks if the easylogging-config file exists.
- static std::string & checkDirectory (std::string &directory)

10.18.1 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 40 of file Utils.hpp.

10.18.2 Member Function Documentation

10.18.2.1 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

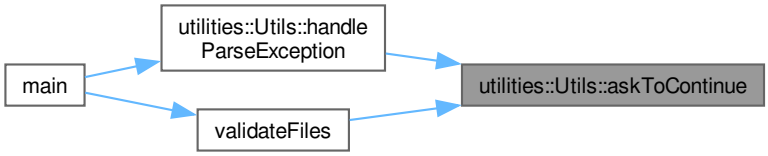
prompt	(Optional) A custom prompt to be used.

Returns

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

Definition at line 34 of file Utils.cpp.

Here is the caller graph for this function:



10.18.2.2 checkConfigFile()

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

Checks if the easylogging-config file exists.

Definition at line 55 of file Utils.cpp.

Here is the caller graph for this function:

10.18.2.3 checkDirectory()

```
std::string & utilities::Utils::checkDirectory (
            std::string & directory )  [static]
```

Todo documentation

Definition at line 65 of file Utils.cpp.

Here is the caller graph for this function:

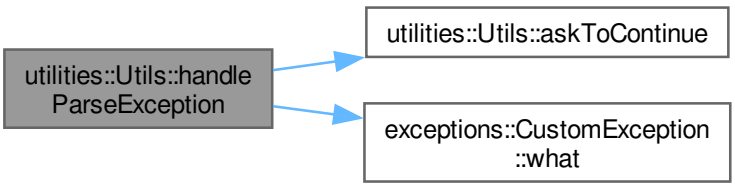
10.18.2.4 handleParseException()

```
bool utilities::Utils::handleParseException (
            const exceptions::CustomException & e,
            const std::vector< std::string >::iterator & file,
            const std::vector< std::string > & files )  [static]
```

Definition at line 76 of file Utils.cpp.

References askToContinue(), and exceptions::CustomException::what().

Here is the call graph for this function:



Here is the caller graph for this function:

10.18.2.5 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.

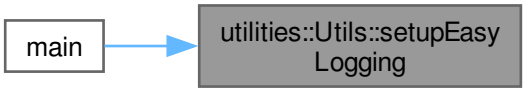
Parameters

configFile	The config file which is used

Definition at line 25 of file Utils.cpp.

References config::HOMEPAGE_URL, config::MAJOR_VERSION, config::MINOR_VERSION, config::PATCH_VERSION, and config::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

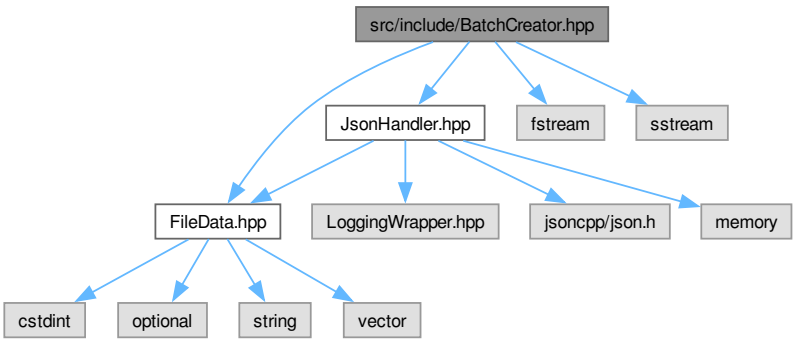
11.1 README.md File Reference

11.2 src/include/BatchCreator.hpp File Reference

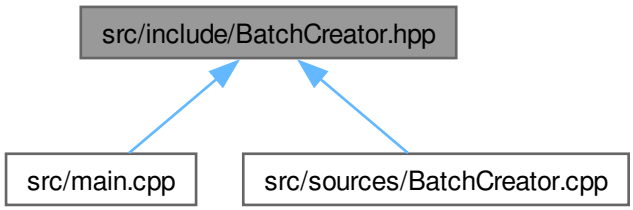
Creates batch file.

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

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

Todo Documentation in english

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.

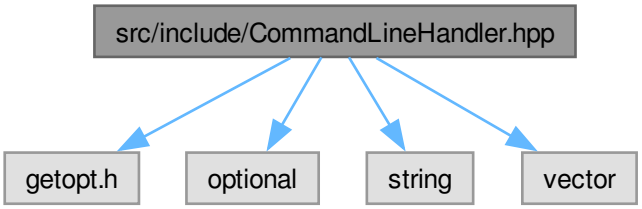
```
00001
00014 #include "FileData.hpp"
00015 #include "JsonHandler.hpp"
00016 #include <fstream>
00017 #include <sstream>
00018
00027 class BatchCreator {
00028 public:
00036   explicit BatchCreator(std::shared_ptr<parsing::FileData> fileData);
00037
00039   [[nodiscard]] std::shared_ptr<std::stringstream> getDataStream() const {
00040     return dataStream;
00041   }
00042
00043 private:
00044   std::shared_ptr<std::stringstream> dataStream;
00045
00046   std::shared_ptr<parsing::FileData> fileData;
00047
00053   void createBatch();
00054
00062   void writeStart() const;
00063
00069   void writeHideShell() const;
00070
00077   void writeCommands() const;
00078
00085   void writeEnvVariables() const;
00086
00093   void writePathVariables() const;
00094
00101   void writeApp() const;
00102
00109   void writeEnd() const;
00110 };
```

11.4 src/include/CommandLineHandler.hpp File Reference

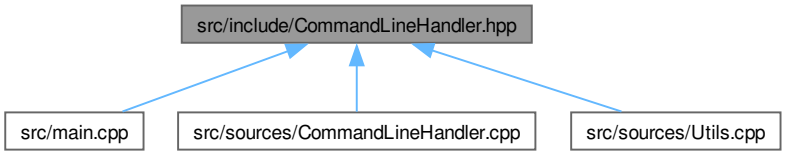
Responsible for the Command Line Interface.

```
#include <getopt.h>
#include <optional>
#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.

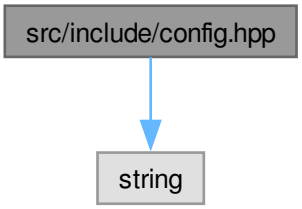
```
00001
00019 #ifndef COMMANDLINEHANDLER_HPP
00020 #define COMMANDLINEHANDLER_HPP
00021
00022 #include <getopt.h>
00023 #include <optional>
00024 #include <string>
00025 #include <vector>
00026
00039 namespace cli {
00040
00053 class CommandLineHandler {
00054 public:
00062     [[noreturn]] static void printHelp();
00070     [[noreturn]] static void printVersion();
00078     [[noreturn]] static void printCredits();
00092     static std::tuple<std::optional<std::string>, std::vector<std::string»
00093     parseArguments(int argc, char *argv[]);
00099     CommandLineHandler() = delete;
00105     ~CommandLineHandler() = delete;
00106 };
00107
00117 static const struct option options[] = {
00118     {"help", no_argument, nullptr, 'h'},
00119     {"version", no_argument, nullptr, 'v'},
00120     {"credits", no_argument, nullptr, 'c'},
00121     {"verbose", no_argument, nullptr, 0},
00122     {"outdir", required_argument, nullptr, 'o'},
00123     nullptr
00124     // Brief/verbose
00125     // Output dir
00126 };
00127
00139 #ifdef IS_UNIX // CLI Formatting for Linux
00140 static const std::string CLEAR_TERMINAL = "\033[2J\033[1;1H";
00141 static const std::string RESET = "\033[0m";
00142 static const std::string RED = "\033[0;31m";
00143 static const std::string GREEN = "\033[0;32m";
00144 static const std::string YELLOW = "\033[0;33m";
00145 static const std::string BLUE = "\033[0;34m";
00146 static const std::string MAGENTA = "\033[0;35m";
00147 static const std::string CYAN = "\033[0;36m";
00148 static const std::string WHITE = "\033[0;37m";
00149 static const std::string BOLD = "\033[1m";
00150 static const std::string UNDERLINE = "\033[4m";
00151 static const std::string ITALIC = "\033[3m";
00152 #elif defined(                                                              \
00153     IS_WINDOWS) // Windows doesn't support ANSI escape codes the same way
00154 static const std::string CLEAR_TERMINAL = "";
00155 static const std::string RESET = "";
00156 static const std::string RED = "";
00157 static const std::string GREEN = "";
00158 static const std::string YELLOW = "";
00159 static const std::string BLUE = "";
00160 static const std::string MAGENTA = "";
00161 static const std::string CYAN = "";
00162 static const std::string WHITE = "";
00163 static const std::string BOLD = "";
00164 static const std::string UNDERLINE = "";
00165 static const std::string ITALIC = "";
00166 #endif
// end of group StyleHelpers  00168
00169 } // namespace cli
00170
00171 #endif // COMMANDLINEHANDLER_HPP
```

11.6 src/include/config.hpp File Reference

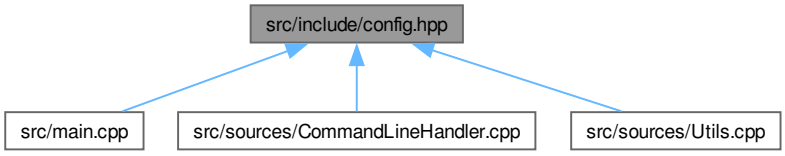
Configures general project information.

```
#include <string>
```

Include dependency graph for config.hpp:



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



Namespaces

- namespace config

Variables

- constexpr auto config::LOG_CONFIG
- constexpr auto config::EXECUTABLE_NAME = "json2batch"
- constexpr auto config::MAJOR_VERSION = "0"
- constexpr auto config::MINOR_VERSION = "2"
- constexpr auto config::PATCH_VERSION = "2"
- constexpr auto config::DESCRIPTION = "A simple tool to convert json to batch."
- constexpr auto config::PROJECT_NAME = "JSON2Batch"
- constexpr auto config::AUTHORS
- constexpr auto config::HOMEPAGE_URL

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.

11.7 config.hpp

Go to the documentation of this file.

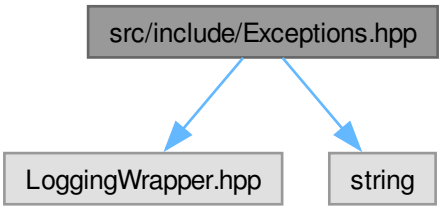
```
00001
00016 // This file is autogenerated. Changes will be overwritten
00017
00018 #ifndef CONFIG_HPP
00019 #define CONFIG_HPP
00020
00021 #include <string>
00022
00023 namespace config {
00024 inline constexpr auto LOG_CONFIG = "/home/simon/1_Coding/projectJsonToBat/"
00025                                    "build/Release/config/easylogging.conf";
00026 inline constexpr auto EXECUTABLE_NAME = "json2batch";
00027 inline constexpr auto MAJOR_VERSION = "0";
00028 inline constexpr auto MINOR_VERSION = "2";
00029 inline constexpr auto PATCH_VERSION = "2";
00030 inline constexpr auto DESCRIPTION = "A simple tool to convert json to batch.";
00031 inline constexpr auto PROJECT_NAME = "JSON2Batch";
00032 inline constexpr auto AUTHORS =
00033     "Elena Schwarzbach, Max Rodler, Simon Blum, Sonia Sinaci";
00034 inline constexpr auto HOMEPAGE_URL =
00035     "https://dhbwprojectsit23.github.io/JSON2Bat";
00036 } // namespace config
00037
00038 #endif
```

11.8 src/include/Exceptions.hpp File Reference

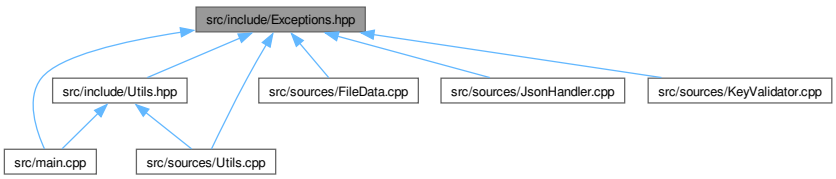
Contains all the custom exceptions used in the project.

```
#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
- class exceptions::NoSuchDirException

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(
00136         const std::vector<std::tuple<int, std::string» &keys) {
00137         LOG_INFO « "InvalidKeyException: " « message;
00138         for (const auto &[line, key] : keys) {
00139             LOG_WARNING « "Invalid key found at line " « line « ": \"" « key
00140                         « "\"!";
00141         }
00142     }
00143     [[nodiscard]] const char *what() const noexcept override {
00144         return message.c_str();
00145     }
00146 };
00147
00156 class InvalidTypeException : public CustomException {
00157 private:
00158     const std::string type;
00159     std::string message;
00160
00161 public:
00162     InvalidTypeException(const std::string &type, int line) : type(type) {
00168         std::stringstream ss;
00169         ss « "Invalid type found at line " « line « ": \"" « type « "\"";
00170         this->message = ss.str();
00171         LOG_INFO « "InvalidTypeException: " « message;
00172     }
00173     [[nodiscard]] const char *what() const noexcept override {
00174         return message.c_str();
00175     }
00176 };
00177
00185 class MissingKeyException : public CustomException {
00186 private:
00187     std::string message;
00188     std::string type;
00189     std::string key;
00190
00191 public:
00192     MissingKeyException(const std::string &key, const std::string &type)
00193         : type(type), key(key) {
00199         std::stringstream ss;
00200         ss « "Missing key \"" « key « "\" for type \"" « type « "\"!";
00201         this->message = ss.str();
00202         LOG_INFO « "MissingKeyException: " « message;
```

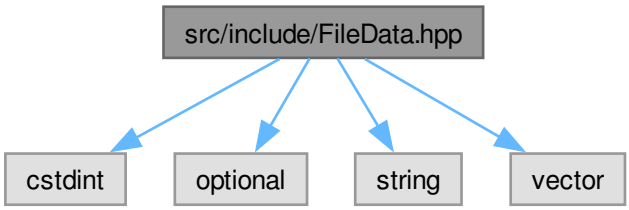
```
00203     }
00204     [[nodiscard]] const char *what() const noexcept override {
00205         return message.c_str();
00206     }
00207 };
00208
00215 class MissingTypeException : public CustomException {
00216 private:
00217     std::string message = "Missing \"type\" key for at least one entry!";
00218
00219 public:
00220     MissingTypeException() {
00221         LOG_INFO « "MissingTypeException: " « message;
00222     }
00223     [[nodiscard]] const char *what() const noexcept override {
00224         return message.c_str();
00225     }
00226 };
00227
00232 class UnreachableCodeException : public CustomException {
00233 private:
00234     std::string message;
00235
00236 public:
00237     explicit UnreachableCodeException(const std::string &message)
00238         : message(message) {
00239         LOG_INFO « "UnreachableCodeException: " « message;
00240     }
00241     [[nodiscard]] const char *what() const noexcept override {
00242         return message.c_str();
00243     }
00244 };
00245
00246 class FailedToOpenFileException : public CustomException {
00247 private:
00248     std::string message;
00249
00251 public:
00252     explicit FailedToOpenFileException(const std::string &file) {
00253         message = "Failed to open file: " + file;
00254         LOG_INFO « "FailedToOpenFileException: " « message;
00255     }
00256     [[nodiscard]] const char *what() const noexcept override {
00257         return message.c_str();
00258     }
00259 };
00260
00261 class NoSuchDirException : public CustomException {
00262 private:
00263     std::string message;
00264
00266 public:
00267     explicit NoSuchDirException(const std::string &dir) {
00268         message = "No such directory: " + dir;
00269         LOG_INFO « "NoSuchDirException: " « message;
00270     }
00271     [[nodiscard]] const char *what() const noexcept override {
00272         return message.c_str();
00273     }
00274 };
00275
00276 } // namespace exceptions
00277
00278 #endif
```

11.10 src/include/FileData.hpp File Reference

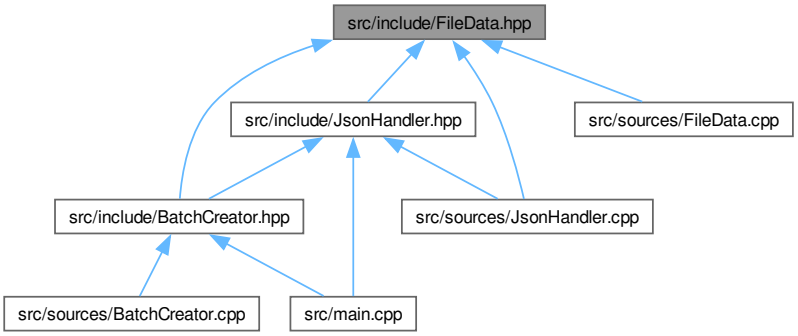
This file contains the FileData class.

```
#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

Copyright

See LICENSE file

Definition in file FileData.hpp.

11.11 FileData.hpp

Go to the documentation of this file.

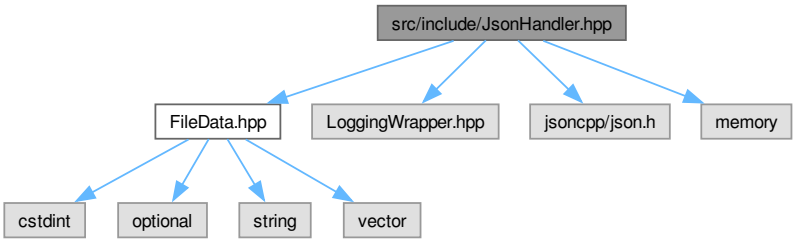
```
00001
00013 #ifndef FILEDATA_HPP
00014 #define FILEDATA_HPP
00015
00016 #include <cstdint>
00017 #include <optional>
00018 #include <string>
00019 #include <vector>
00020
00021 namespace parsing {
00030 class FileData {
00031 public:
00042   void setOutputFile(std::string &newOutputfile);
00043
00048   void setHideShell(bool newHideShell) { this->hideShell = newHideShell; }
00049
00058   void setApplication(const std::string &newApplication);
00059
00070   void addCommand(const std::string &command);
00071
00083   void addEnvironmentVariable(const std::string &name,
00084                               const std::string &value);
00085
00096   void addPathValue(const std::string &pathValue);
00097
00102   [[nodiscard]] const std::string &getOutputFile() const { return outputfile; }
00103
00108   [[nodiscard]] bool getHideShell() const { return hideShell; }
00109
00114   [[nodiscard]] const std::optional<std::string> &getApplication() const {
00115     return application;
00116   }
00117
00122   [[nodiscard]] const std::vector<std::string> &getCommands() const {
00123     return commands;
00124   }
00125
00130   [[nodiscard]] const std::vector<std::tuple<std::string, std::string» &
00131   getEnvironmentVariables() const {
00132     return environmentVariables;
00133   }
00134
00139   [[nodiscard]] const std::vector<std::string> &getPathValues() const {
00140     return pathValues;
00141   }
00142
00143 private:
00144   std::string outputfile;
00145   bool hideShell;
00146   std::optional<std::string> application;
00147   std::vector<std::string> commands;
00148   std::vector<std::tuple<std::string, std::string» environmentVariables;
00149   std::vector<std::string> pathValues;
00150 };
00151 } // namespace parsing
00152
00153 #endif // FILEDATA_HPP
```

11.12 src/include/JsonHandler.hpp File Reference

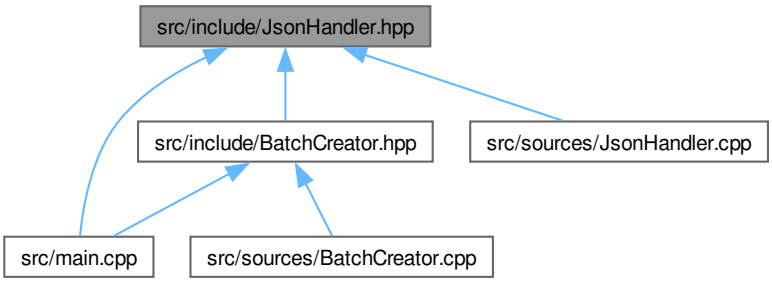
This file contains the JsonHandler class.

```
#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

See LICENSE file

Definition in file JsonHandler.hpp.

11.13 JsonHandler.hpp

Go to the documentation of this file.

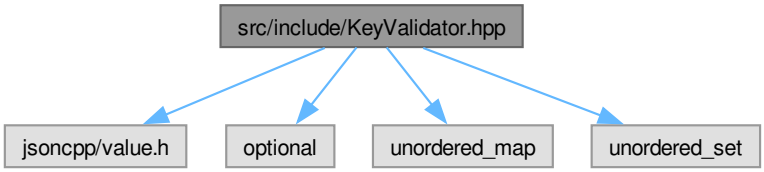
```
00001
00013 #ifndef JSONHANDLER_HPP
00014 #define JSONHANDLER_HPP
00015
00016 #include "FileData.hpp"
00017 #include "LoggingWrapper.hpp"
00018 #include <jsoncpp/json.h>
00019
00020 #include <memory>
00021
00034 namespace parsing {
00035
00045 class JsonHandler {
00046 public:
00053     JsonHandler() {
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

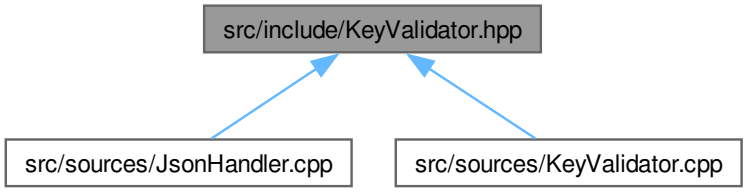
This file contains the KeyValidator class.

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

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

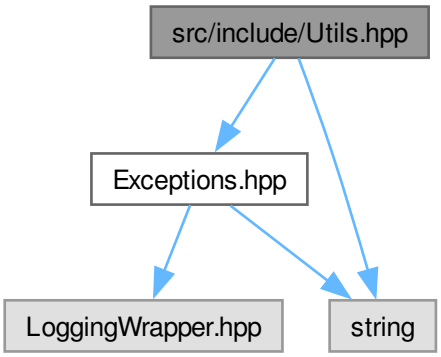
Go to the documentation of this file.

```
00001
00012 #ifndef KEYVALIDATOR_HPP
00013 #define KEYVALIDATOR_HPP
00014
00015 #include "jsoncpp/value.h"
00016 #include <optional>
00017 #include <unordered_map>
00018 #include <unordered_set>
00019 namespace parsing {
00028 class KeyValidator {
00029 public:
00035   static KeyValidator &getInstance();
00036
00050   std::vector<std::tuple<int, std::string»
00051   validateKeys(const Json::Value &root, const std::string &filename);
00052
00053 private:
00066   std::vector<std::tuple<int, std::string»
00067   getWrongKeys(const Json::Value &root, const std::string &filename) const;
00068
00078   void validateTypes(const std::string &filename, const Json::Value &entry,
00079                      const std::unordered_set<std::string> &entryKeys);
00080
00091   std::vector<std::tuple<int, std::string»
00092   validateEntries(const std::string &filename,
00093                   const std::unordered_set<std::string> &entryKeys) const;
00094
00105   static std::optional<int> getUnknownKeyLine(const std::string &filename,
00106                                               const std::string &wrongKey);
00107
00108   std::unordered_set<std::string> validKeys = {"outputfile", "hideshell",
00109                                                "entries", "application"};
00110   std::unordered_set<std::string> validEntryKeys = {"type", "key", "value",
00111                                                     "path", "command"};
00112
00113   std::unordered_map<std::string_view, std::vector<std::string» typeToKeys = {
00114       {"EXE", {"command"}}, {"PATH", {"path"}}, {"ENV", {"key", "value"}}};
00115 };
00116 } // namespace parsing
00117
00118 #endif
```

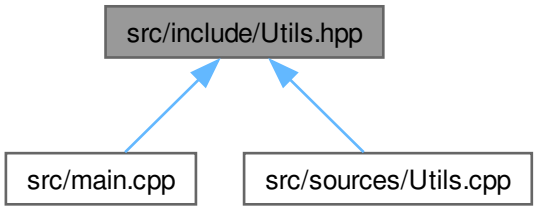
11.16 src/include/Utils.hpp File Reference

```
#include "Exceptions.hpp"
#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.

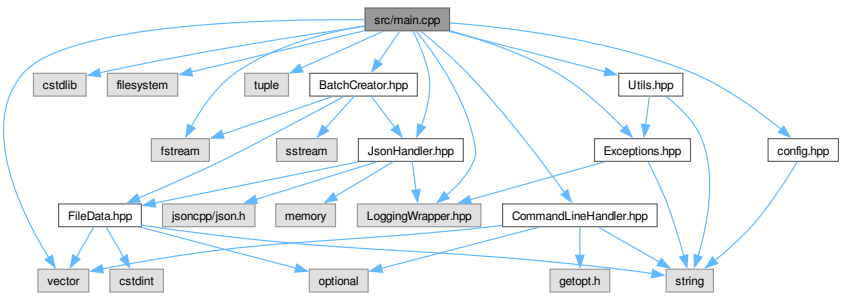
```
00001
00016 #ifndef UTILITIES_HPP
00017 #define UTILITIES_HPP
00018
00019 #include "Exceptions.hpp"
00020 #include <string>
00021
00031 namespace utilities {
00032
00040 class Utils {
00041 public:
00049   static void setupEasyLogging(const std::string &configFile);
00050
00051   static bool
00052   handleParseException(const exceptions::CustomException &e,
00053                        const std::vector<std::string>::iterator &file,
00054                        const std::vector<std::string> &files);
00055
00063   static bool
00064   askToContinue(const std::string &prompt = "Do you want to continue? (Y/N)\n");
00065
00069   static void checkConfigFile(const std::string &configFile);
00070
00072   static std::string &checkDirectory(std::string &directory);
00073 };
00074 } // namespace utilities
00075
00076 #endif // UTILITIES_HPP
```

11.18 src/main.cpp File Reference

Contains the main function.

```
#include <LoggingWrapper.hpp>
#include <cstdlib>
#include <filesystem>
#include <fstream>
#include <tuple>
#include <vector>
#include "BatchCreator.hpp"
#include "CommandLineHandler.hpp"
#include "Exceptions.hpp"
#include "JsonHandler.hpp"
#include "Utils.hpp"
#include "config.hpp"
```

Include dependency graph for main.cpp:



Functions

- INITIALIZE_EASYLOGGINGPP std::tuple< std::vector< std::string >, std::string > parseAndValidateArgs (int argc, char *argv[])
- std::vector< std::string > validateFiles (const std::vector< std::string > &files)
- void parseFile (const std::string &file, const std::string &outputDirectory)
- 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

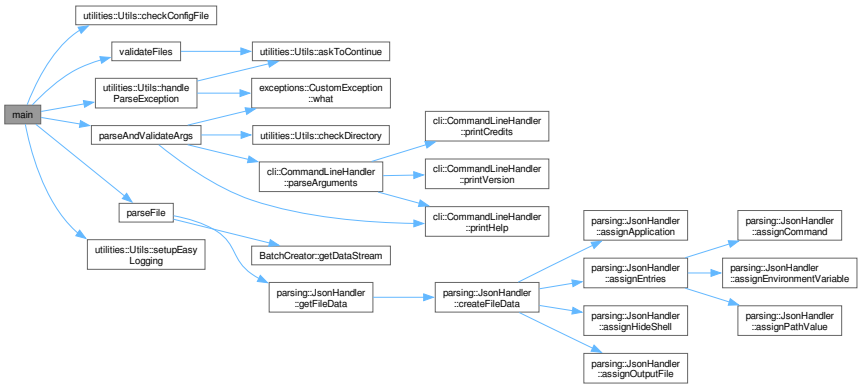
Todo Documentation

Refactoring

Definition at line 72 of file main.cpp.

References utilities::Utils::checkConfigFile(), utilities::Utils::handleParseException(), config::LOG_CONFIG, parseAndValidateArgs(), parseFile(), utilities::Utils::setupEasyLogging(), and validateFiles().

Here is the call graph for this function:



11.18.2.2 parseAndValidateArgs()

```
std::tuple< std::vector< std::string >, std::string > parseAndValidateArgs (
            int argc,
            char * argv[] )
```

Parameters

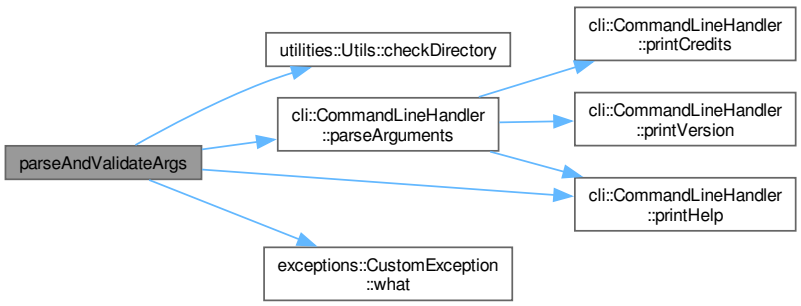
argc	
argv	

Returns

Definition at line 100 of file main.cpp.

References utilities::Utils::checkDirectory(), cli::CommandLineHandler::parseArguments(), cli::CommandLineHandler::printHelp(), and exceptions::CustomException::what().

Here is the call graph for this function:



Here is the caller graph for this function:

11.18.2.3 parseFile()

```
void parseFile (
            const std::string & file,
            const std::string & outputDirectory )
```

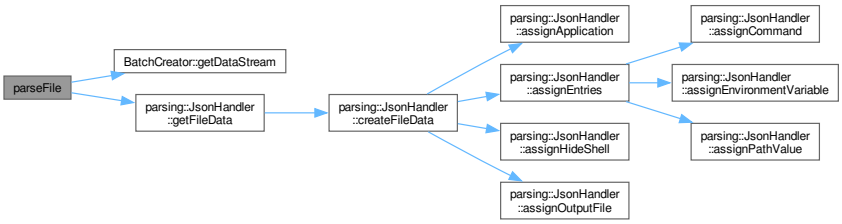
Parameters

file	

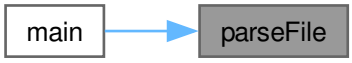
Definition at line 150 of file main.cpp.

References BatchCreator::getDataStream(), and parsing::JsonHandler::getFileData().

Here is the call graph for this function:



Here is the caller graph for this function:



11.18.2.4 validateFiles()

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

Parameters

files	

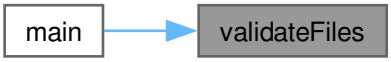
Returns

Definition at line 122 of file main.cpp.

References utilities::Utils::askToContinue().

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.

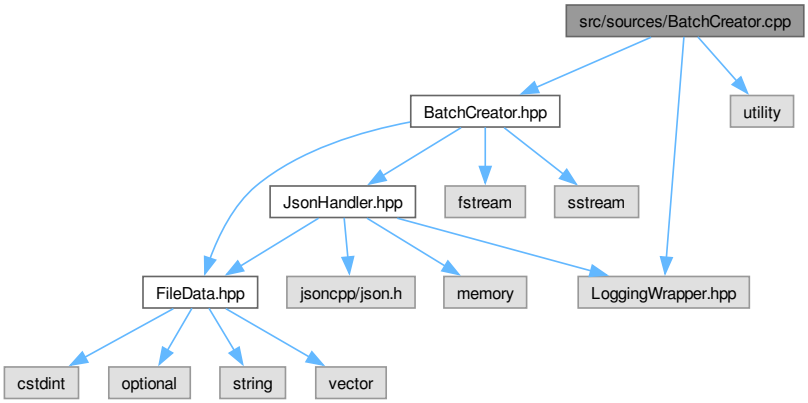
```
00001
00013 #include <LoggingWrapper.hpp>
00014 #include <cstdlib>
00015 #include <filesystem>
00016 #include <fstream>
00017 #include <tuple>
00018 #include <vector>
00019
00020 #include "BatchCreator.hpp"
00021 #include "CommandLineHandler.hpp"
00022 #include "Exceptions.hpp"
00023 #include "JsonHandler.hpp"
00024 #include "Utils.hpp"
00025 #include "config.hpp"
00026
00027 INITIALIZE_EASYLOGGINGPP
00028
00037 std::tuple<std::vector<std::string>, std::string>
00038 parseAndValidateArgs(int argc, char *argv[]);
00039
00047 std::vector<std::string> validateFiles(const std::vector<std::string> &files);
00048
00055 void parseFile(const std::string &file, const std::string &outputDirectory);
00056
00072 int main(int argc, char *argv[]) {
00073
00074   utilities::Utils::checkConfigFile(config::LOG_CONFIG);
00075   utilities::Utils::setupEasyLogging(config::LOG_CONFIG);
00076   auto [files, outDir] = parseAndValidateArgs(argc, argv);
00077   OUTPUT « cli::BOLD « "Parsing the following files:\n" « cli::RESET;
00078   for (const auto &file : files) {
00079     OUTPUT « "\t - " « file « "\n";
00080   }
00081
00082   files = validateFiles(files);
00083   for (auto file = files.begin(); file != files.end(); ++file) {
00084     OUTPUT « cli::ITALIC « "\nParsing file: " « *file « "...\n"
00085            « cli::RESET;
00086     try {
00087       parseFile(*file, outDir);
00088     } catch (const exceptions::CustomException &e) {
00089       if (utilities::Utils::handleParseException(e, file, files)) {
00090         continue;
00091       }
00092       exit(1);
00093     }
00094   }
00095   LOG_INFO « "Exiting...";
00096   return 0;
00097 }
00098
00099 std::tuple<std::vector<std::string>, std::string>
00100 parseAndValidateArgs(int argc, char *argv[]) {
00101   if (argc < 2) {
00102     LOG_ERROR « "No options given!\n";
00103     cli::CommandLineHandler::printHelp();
00104   }
00105   auto [outOption, files] = cli::CommandLineHandler::parseArguments(argc, argv);
00106   std::string outDir = outOption.value_or("");
00107   if (!outDir.empty()) {
00108     try {
```

```
00109       outDir = utilities::Utils::checkDirectory(outDir);
00110     } catch (const exceptions::CustomException &e) {
00111       LOG_ERROR « e.what();
00112       exit(1);
00113     }
00114   }
00115   if (files.empty()) {
00116     LOG_ERROR « "No files were given as arguments!\n";
00117     exit(1);
00118   }
00119   return {files, outDir};
00120 }
00121
00122 std::vector<std::string> validateFiles(const std::vector<std::string> &files) {
00123   std::vector<std::string> validFiles;
00124   validFiles.reserve(files.size());
00125   for (const std::filesystem::path file : files) {
00126     if (!std::filesystem::is_regular_file(file)) {
00127       LOG_ERROR « "The file \"" « file « "\" does not exist!\n";
00128       if (files.size() > 1 && !utilities::Utils::askToContinue()) {
00129         OUTPUT « "Aborting...\n";
00130         LOG_INFO « "Application ended by user Input";
00131         exit(1);
00132       }
00133       continue;
00134     }
00135     if (file.extension() != ".json") {
00136       LOG_WARNING « "The file \"" « file « "\" does not end in \".json\"\n";
00137       OUTPUT « "If the file is not in JSON Format, continuing may "
00138                 "result in\nunexpected behaviour!\n";
00139       if (!utilities::Utils::askToContinue()) {
00140         OUTPUT « "Aborting...\n";
00141         LOG_INFO « "Application ended by user Input";
00142         exit(1);
00143       }
00144     }
00145     validFiles.push_back(file);
00146   }
00147   return validFiles;
00148 }
00149
00150 void parseFile(const std::string &file, const std::string &outputDirectory) {
00151   parsing::JsonHandler jsonHandler(file);
00152   const auto fileData = jsonHandler.getFileData();
00153   BatchCreator batchCreator(fileData);
00154   const std::shared_ptr<std::stringstream> dataStream =
00155       batchCreator.getDataStream();
00156   const std::string outputFileName =
00157       outputDirectory + fileData->getOutputFile();
00158   std::ofstream outFile(outputFileName);
00159   if (!outFile.good()) {
00160     throw exceptions::FailedToOpenFileException(outputFileName);
00161   }
00162   outFile « dataStream->str();
00163   OUTPUT « "Done with files!\n";
00164 }
```

11.20 src/sources/BatchCreator.cpp File Reference

```
#include "BatchCreator.hpp"
#include "LoggingWrapper.hpp"
#include <utility>
```

Include dependency graph for BatchCreator.cpp:



11.21 BatchCreator.cpp

Go to the documentation of this file.

```
00001
00012 #include "BatchCreator.hpp"
00013
00014 #include "LoggingWrapper.hpp"
00015 #include <utility>
00016
00017 BatchCreator::BatchCreator(std::shared_ptr<parsing::FileData> fileData)
00018     : fileData(std::move(fileData)) {
00019     LOG_INFO << "Initializing BatchCreator";
00020     this->dataStream = std::make_shared<std::stringstream>();
00021     this->createBatch();
00022 }
00023
00024 void BatchCreator::createBatch() {
00025     LOG_INFO << "Creating Batch file";
00026
00027     this->writeStart();
00028     this->writeHideShell();
00029     this->writeCommands();
00030     this->writeEnvVariables();
00031     this->writePathVariables();
00032     this->writeApp();
00033     this->writeEnd();
00034 }
00035
00036 void BatchCreator::writeStart() const {
00037     LOG_INFO << "writing Start of Batch";
00038     *this->dataStream << "@ECHO OFF\r\nC:\\Windows\\System32\\cmd.exe ";
00039 }
00040
00041 void BatchCreator::writeHideShell() const {
00042     if (this->fileData->getHideShell()) {
00043         LOG_INFO << "writing hide Shell";
00044         *this->dataStream << "/c ";
00045
00046     } else {
00047         LOG_INFO << "writing show Shell";
00048         *this->dataStream << "/k ";
00049     }
00050 }
00051
00052 void BatchCreator::writeCommands() const {
00053     LOG_INFO << "writing Commands";
00054     *this->dataStream << "\"";
00055     for (const std::string &command : this->fileData->getCommands()) {
00056         *this->dataStream << command << " && ";
00057     }
00058 }
```

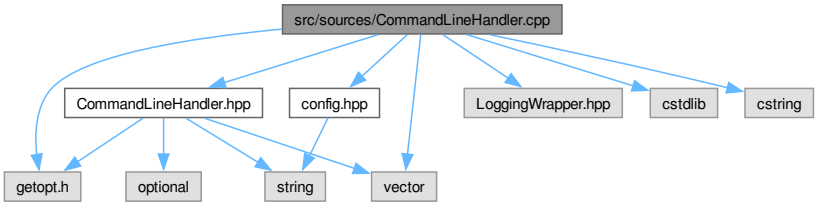
```
00059
00060 void BatchCreator::writeEnvVariables() const {
00061     LOG_INFO « "writing Environment Variables";
00062     for (const auto &[key, value] : this->fileData->getEnvironmentVariables()) {
00063         *this->dataStream « "set " « key « "=" « value « " && ";
00064     }
00065 }
00066
00067 void BatchCreator::writePathVariables() const {
00068     LOG_INFO « "writing Path Variables";
00069     *this->dataStream « "set path=";
00070     for (const std::string &path : this->fileData->getPathValues()) {
00071         *this->dataStream « path « ";";
00072     }
00073     *this->dataStream « "%path%";
00074 }
00075
00076 void BatchCreator::writeApp() const {
00077     std::string appName = this->fileData->getOutputFile();
00078     appName = appName.substr(0, appName.find('.'));
00079     if (this->fileData->getApplication().has_value()) {
00080         LOG_INFO « "writing start Application";
00081         *this->dataStream « " && start \"" « appName « "\" "
00082                           « this->fileData->getApplication().value() « "\"\r\n";
00083     } else {
00084         LOG_INFO « "writing not start Application";
00085         *this->dataStream « "\"\r\n";
00086     }
00087 }
00088
00089 void BatchCreator::writeEnd() const {
00090     *this->dataStream « "@ECHO ON";
00091 }
```

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          << config::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...";
```

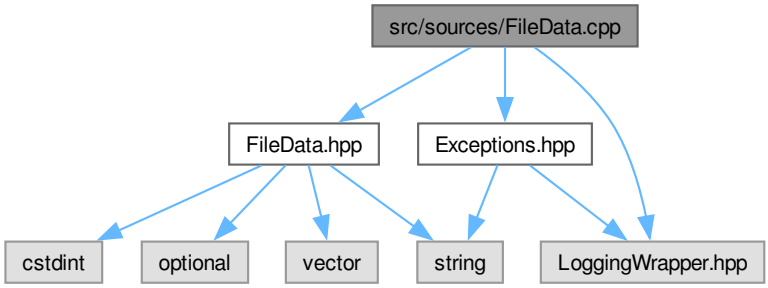
```
00046   OUTPUT « config::PROJECT_NAME « " v" « config::MAJOR_VERSION « "."
00047          « config::MINOR_VERSION « "." « config::PATCH_VERSION « "\n";
00048   exit(0);
00049 }
00050 void CommandLineHandler::printCredits() {
00051   LOG_INFO « "Printing credits...";
00052   OUTPUT « BOLD « "Project information:\n"
00053          « RESET « "----------\n"
00054          « CYAN « BOLD « config::PROJECT_NAME « RESET « " v"
00055          « config::MAJOR_VERSION « "." « config::MINOR_VERSION « "."
00056          « config::PATCH_VERSION « "\n"
00057          « "\n"
00058          « config::DESCRIPTION « "\n"
00059          « "\n"
00060          « GREEN « "Authors: " « RESET « ITALIC « config::AUTHORS « RESET
00061          « "\n"
00062          « GREEN « "Documentation: " « RESET « ITALIC
00063          « config::HOMEPAGE_URL « RESET « GREEN « "\nContact: " « RESET
00064          « ITALIC « "simon21.blum@gmail.com"
00065          « "\n";
00066   exit(0);
00067 }
00068
00069 std::tuple<std::optional<std::string>, std::vector<std::string»
00070 CommandLineHandler::parseArguments(int argc, char *argv[]) {
00071   LOG_INFO « "Parsing arguments...";
00072
00073   std::vector<std::string> files;
00074   std::optional<std::string> outDir;
00075
00076   while (true) {
00077     int optIndex = -1;
00078     struct option longOption = {};
00079     const auto result = getopt_long(argc, argv, "hvco:", options, &optIndex);
00080
00081     if (result == -1) {
00082       LOG_INFO « "End of options reached";
00083       break;
00084     }
00085
00086     switch (result) {
00087     case '?':
00088       LOG_ERROR « "Invalid Option (argument)\n";
00089       CommandLineHandler::printHelp();
00090
00091     case 'h':
00092       LOG_INFO « "Help option detected";
00093       CommandLineHandler::printHelp();
00094
00095     case 'v':
00096       LOG_INFO « "Version option detected";
00097       CommandLineHandler::printVersion();
00098
00099     case 'c':
00100       LOG_INFO « "Credit option detected";
00101       CommandLineHandler::printCredits();
00102
00103     case 'o':
00104       LOG_INFO « "Output option detected";
00105       outDir = optarg;
00106       break;
00107
00108     case 0:
00109       LOG_INFO « "Long option without short version detected";
00110       longOption = options[optIndex];
00111       LOG_INFO « "Option: " « longOption.name « " given";
00112       if (strcmp(longOption.name, "verbose") == 0) {
00113         logging::setVerboseMode(true);
00114         LOG_INFO « "Verbose mode activated";
00115       }
00116       break;
00117     default:
00118       LOG_ERROR « "Default case for options reached!";
00119       break;
00120     }
00121   }
00122
00123   LOG_INFO « "Options have been parsed";
00124   LOG_INFO « "Checking for arguments...";
00125
00126   while (optind < argc) {
00127     LOG_INFO « "Adding file: " « argv[optind];
00128     files.emplace_back(argv[optind++]);
00129   }
00130   LOG_DEBUG « files.size();
00131
00132   LOG_INFO « "Arguments and options have been parsed";
```

```
00133   return {outDir, files};
00134 }
00135 } // 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

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Definition in file FileData.cpp.

11.25 FileData.cpp

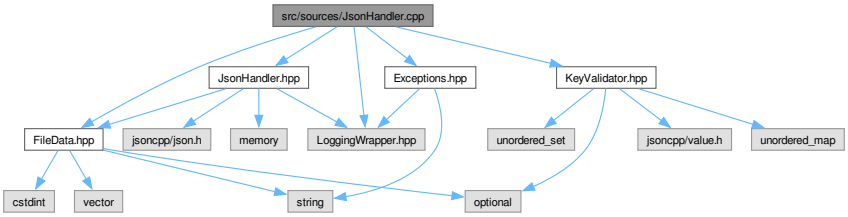
Go to the documentation of this file.

```
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   LOG_INFO « "Setting outputfile to...";
00019
00020   // If no value for key "outputfile"
00021   if (newOutputfile.empty()) {
00022     LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00023     throw exceptions::InvalidValueException("outputfile",
00024                                             "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",
00031                                             "Outputfile is already set!");
00032   }
00033
00034   // If outputfile does not end with ".bat"
00035   if (!newOutputfile.ends_with(".bat")) {
00036     newOutputfile += ".bat";
00037     LOG_WARNING « "Outputfile does not end with \".bat\", adding it now: "
00038                 « newOutputfile;
00039   }
00040
00041   this->outputfile = newOutputfile;
00042   LOG_INFO « "Outputfile set to: " « this->outputfile « "\n";
00043 }
00044
00045 void FileData::setApplication(const std::string &newApplication) {
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   if (command.empty()) {
00057     LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00058     throw exceptions::InvalidValueException("command",
00059                                             "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   if (name.empty()) {
00069     LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00070     throw exceptions::InvalidValueException("name", "Name value is empty!");
00071   }
00072
00073   if (value.empty()) {
00074     LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00075     throw exceptions::InvalidValueException("key", "Key value is empty");
00076   }
00077
00078   LOG_INFO « "Adding environment variable: " « name « "=" « value « "\n";
00079   this->environmentVariables.emplace_back(name, value);
00080 }
00081
00082 void FileData::addPathValue(const std::string &pathValue) {
00083   if (pathValue.empty()) {
00084     LOG_INFO « "Escalating error to ErrorHandler::invalidValue!";
00085     throw exceptions::InvalidValueException("path", "Path value is empty");
00086   }
00087
00088   LOG_INFO « "Adding path value: " « pathValue « "\n";
00089   this->pathValues.push_back(pathValue);
00090 }
00091 } // 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 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.

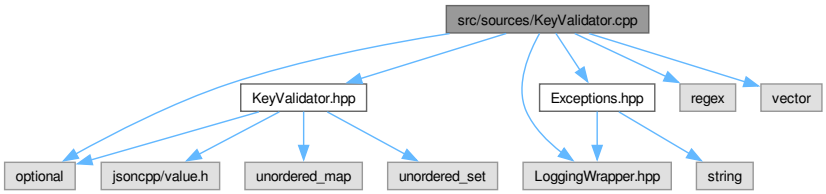
```
00001
00012 #include "JsonHandler.hpp"
00013 #include "Exceptions.hpp"
00014 #include "FileData.hpp"
00015 #include "KeyValidator.hpp"
00016 #include "LoggingWrapper.hpp"
00017
00018 namespace parsing {
00019 JsonHandler::JsonHandler(const std::string &filename) {
00020   LOG_INFO « "Initializing JSONHandler with filename: " « filename « "\n";
00021   this->root = parseFile(filename);
00022 }
00023
00024 std::shared_ptr<Json::Value> JsonHandler::parseFile(const std::string &filename)
00025
00026 {
00027   LOG_INFO « "Parsing file: " « filename « "\n";
00028   std::ifstream file(filename);
00029   Json::Value newRoot;
00030
00031   // Json::Reader.parse() returns false if parsing fails
00032   if (Json::Reader reader; !reader.parse(file, newRoot)) {
00033     throw exceptions::ParsingException(filename);
00034   }
00035
00036   // Validate keys
00037   // Check for errors
00038   if (auto errors = KeyValidator::getInstance().validateKeys(newRoot, filename);
00039       !errors.empty()) {
00040     throw exceptions::InvalidKeyException(errors);
00041   }
00042
00043   LOG_INFO « "File \"" « filename « "\" has been parsed\n";
00044   return std::make_shared<Json::Value>(newRoot);
00045 }
00046
00047 std::shared_ptr<FileData> JsonHandler::getFileData() {
00048   LOG_INFO « "Creating FileData object for return...\n";
00049   return this->createFileData();
00050 }
00051
00052 std::shared_ptr<FileData> JsonHandler::createFileData() {
00053   LOG_INFO « "Creating FileData object...\n";
00054   this->data = std::make_shared<FileData>();
00055   this->assignOutputFile();
00056   this->assignHideShell();
00057   this->assignApplication();
00058   this->assignEntries();
00059   return this->data;
00060 }
00061
00062 void JsonHandler::assignOutputFile() const {
00063   LOG_INFO « "Assigning outputfile...\n";
00064   std::string outputFile = this->root->get("outputfile", "").asString();
00065
00066   this->data->setOutputFile(outputFile);
00067 }
00068
00069 void JsonHandler::assignHideShell() const {
00070   LOG_INFO « "Assigning hide shell...\n";
00071   // If the 'hideshell' key is not given, it defaults to false
00072   this->data->setHideShell(this->root->get("hideshell", false).asBool());
00073 }
00074
00075 void JsonHandler::assignApplication() const {
00076   LOG_INFO « "Assigning application...\n";
00077   this->data->setApplication(this->root->get("application", "").asString());
00078 }
00079
00080 void JsonHandler::assignEntries() const {
00081   LOG_INFO « "Assigning entries...\n";
00082
00083   for (const auto &entry : this->root->get("entries", "")) {
00084     std::string entryType = entry.get("type", "").asString();
00085
00086     if (entryType == "EXE") {
00087       LOG_INFO « "Calling function to assign command...\n";
00088       this->assignCommand(entry);
00089     } else if (entryType == "ENV") {
00090       LOG_INFO « "Calling function to assign environment variable...\n";
00091       this->assignEnvironmentVariable(entry);
00092     } else if (entryType == "PATH") {
```

```
00093       LOG_INFO << "Calling function to assign path value...\n";
00094       this->assignPathValue(entry);
00095     } else {
00096       // Due to validation beforehand - this should never be reached!
00097       throw exceptions::UnreachableCodeException(
00098           "Unknown entries should be caught by KeyValidator!\nPlease report "
00099           "this bug!");
00100     }
00101   }
00102 }
00103
00104 void JsonHandler::assignCommand(const Json::Value &entry) const {
00105   LOG_INFO << "Assigning command...\n";
00106   this->data->addCommand(entry.get("command", "").asString());
00107 }
00108
00109 void JsonHandler::assignEnvironmentVariable(const Json::Value &entry) const {
00110   LOG_INFO << "Assigning environment variable...\n";
00111   std::string key = entry.get("key", "").asString();
00112   std::string value = entry.get("value", "").asString();
00113   this->data->addEnvironmentVariable(key, value);
00114 }
00115
00116 void JsonHandler::assignPathValue(const Json::Value &entry) const {
00117   LOG_INFO << "Assigning path value...\n";
00118   this->data->addPathValue(entry.get("path", "").asString());
00119 }
00120 } // 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

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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
00020 namespace parsing {
00021 KeyValidator &KeyValidator::getInstance() {
00022   static KeyValidator keyValidator;
00023   LOG_INFO « "Returning KeyValidator instance!";
00024   return keyValidator;
00025 }
00026
00027 std::vector<std::tuple<int, std::string»
00028 KeyValidator::validateKeys(const Json::Value &root,
00029                            const std::string &filename) {
00030
00031   std::vector<std::tuple<int, std::string» wrongKeys =
00032       getWrongKeys(root, filename);
00033
00034   for (Json::Value entries = root.get("entries", "");
00035        const auto &entry : entries) {
00036
00037     const auto entryKeys = entry.getMemberNames();
00038     std::unordered_set<std::string> entryKeysSet(entryKeys.begin(),
00039                                                  entryKeys.end());
00040
00041     const auto wrongEntries = validateEntries(filename, entryKeysSet);
00042     wrongKeys.insert(wrongKeys.end(), wrongEntries.begin(), wrongEntries.end());
00043     // Validate that each entry has it's necessary keys
00044     validateTypes(filename, entry, entryKeysSet);
00045   }
00046
00047   return wrongKeys;
00048 }
00049
00050 std::vector<std::tuple<int, std::string»
00051 KeyValidator::getWrongKeys(const Json::Value &root,
00052                            const std::string &filename) const {
00053   std::vector<std::tuple<int, std::string» wrongKeys = {};
00054
00055   for (const auto &key : root.getMemberNames()) {
00056     if (!validKeys.contains(key)) {
00057       const auto error = getUnknownKeyLine(filename, key);
00058
00059       if (!error.has_value()) {
00060         LOG_ERROR « "Unable to find line of wrong key!";
00061         continue;
00062       }
00063
00064       wrongKeys.emplace_back(error.value_or(-1), key);
00065     }
00066   }
00067
```

```
00068   return wrongKeys;
00069 }
00070
00071 std::vector<std::tuple<int, std::string» KeyValidator::validateEntries(
00072     const std::string &filename,
00073     const std::unordered_set<std::string> &entryKeys) const {
00074   std::vector<std::tuple<int, std::string» wrongKeys = {};
00075
00076   for (const auto &key : entryKeys) {
00077     if (!validEntryKeys.contains(key)) {
00078       const auto error = getUnknownKeyLine(filename, key);
00079
00080       if (!error.has_value()) {
00081         LOG_ERROR « "Unable to find line of wrong key!";
00082         continue;
00083       }
00084
00085       wrongKeys.emplace_back(error.value(), key);
00086     }
00087   }
00088
00089   return wrongKeys;
00090 }
00091
00092 void KeyValidator::validateTypes(
00093     const std::string &filename, const Json::Value &entry,
00094     const std::unordered_set<std::string> &entryKeys) {
00095   const std::string type = entry.get("type", "ERROR").asString();
00096
00097   if (type == "ERROR") {
00098     throw exceptions::MissingTypeException();
00099   } else if (typeToKeys.contains(type)) {
00100     const std::optional<int> line =
00101         getUnknownKeyLine(filename, std::string(type));
00102
00103     if (!line.has_value()) {
00104       LOG_INFO « "Unable to find line of wrong type!";
00105     }
00106     throw exceptions::InvalidTypeException(std::string(type), line.value());
00107   } else {
00108     for (const auto &key : typeToKeys[type]) {
00109       if (entryKeys.contains(key)) {
00110         throw exceptions::MissingKeyException(key, std::string(type));
00111       }
00112     }
00113   }
00114 }
00115
00116 std::optional<int>
00117 KeyValidator::getUnknownKeyLine(const std::string &filename,
00118                                 const std::string &wrongKey) {
00119   std::ifstream file(filename);
00120
00121   if (!file.is_open()) {
00122     LOG_ERROR « "File not open!";
00123     return std::nullopt;
00124   }
00125
00126   std::string line;
00127   const std::regex wrongKeyPattern("\\b" + wrongKey + "\\b");
00128
00129   for (int lineNumber = 1; std::getline(file, line); ++lineNumber) {
00130     if (std::regex_search(line, wrongKeyPattern)) {
00131       return lineNumber;
00132     }
00133   }
00134   return std::nullopt;
00135 }
00136
00137 } // namespace parsing
```

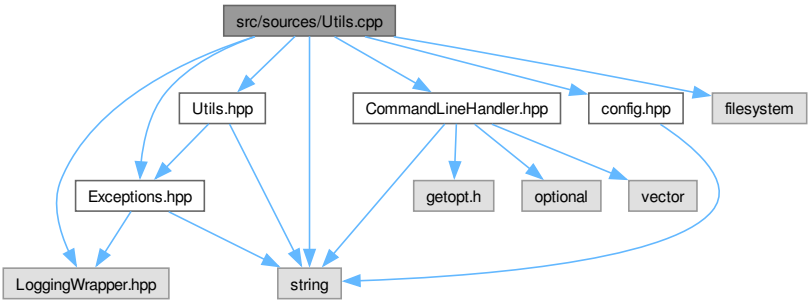
11.30 src/sources/Utils.cpp File Reference

Implementation for the Utils class.

```
#include "Utils.hpp"
#include "CommandLineHandler.hpp"
#include "Exceptions.hpp"
#include "config.hpp"
```

```
#include <LoggingWrapper.hpp>
#include <filesystem>
#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

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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 "Exceptions.hpp"
00018 #include "config.hpp"
00019
00020 #include <LoggingWrapper.hpp>
00021 #include <filesystem>
00022 #include <string>
00023
00024 namespace utilities {
00025 void Utils::setupEasyLogging(const std::string &configFile) {
00026   el::Configurations conf(configFile);
00027   el::Loggers::reconfigureAllLoggers(conf);
00028   LOG_INFO « "Running " « config::PROJECT_NAME « " v"
00029            « config::MAJOR_VERSION « "." « config::MINOR_VERSION « "."
00030            « config::PATCH_VERSION;
00031   LOG_INFO « "For more Information checkout " « config::HOMEPAGE_URL;
00032   LOG_INFO « "EasyLogging has been setup!";
00033 }
00034 bool Utils::askToContinue(const std::string &prompt) {
00035   std::string userInput;
00036   LOG_INFO « "Asking for user Confirmation to continue...";
00037   OUTPUT « cli::BOLD « prompt « cli::RESET;
00038
00039   do {
00040     std::cin » userInput;
00041     std::ranges::transform(userInput, userInput.begin(), ::tolower);
00042
00043     if (userInput != "y" && userInput != "yes" && userInput != "n" &&
00044         userInput != "no") {
00045       LOG_INFO « "Wrong user input!";
00046       OUTPUT « cli::ITALIC « "Please enter Y/Yes or N/No!\n" « cli::RESET;
00047       continue;
00048     }
00049
00050     break;
00051   } while (true);
00052
00053   return userInput == "y" || userInput == "yes";
00054 }
00055 void Utils::checkConfigFile(const std::string &configFile) {
00056   if (!std::filesystem::is_regular_file(configFile)) {
00057     std::cerr « cli::RED « cli::BOLD
00058               « "Fatal: Easylogging configuration file not found at:\n"
00059               « cli::RESET « cli::ITALIC « "\n\t\"" « configFile « "\"\n\n"
00060               « cli::RESET;
00061     std::cout « "Aborting...\n";
00062     exit(1);
00063   }
00064 }
00065 std::string &Utils::checkDirectory(std::string &directory) {
00066   if (!directory.empty() && directory.back() != '/' &&
00067       directory.back() != '\\') {
00068     directory += '/';
00069   }
00070
00071   if (!std::filesystem::exists(directory)) {
00072     throw exceptions::NoSuchDirException(directory);
00073   }
00074   return directory;
00075 }
00076 bool Utils::handleParseException(const exceptions::CustomException &e,
00077                                  const std::vector<std::string>::iterator &file,
00078                                  const std::vector<std::string> &files) {
00079   OUTPUT « "\nThere has been a error while trying to parse \"" « *file
00080          « ":\n";
00081   LOG_ERROR « e.what();
00082
00083   if (std::next(file) != files.end() &&
00084       !utilities::Utils::askToContinue(
00085           "Do you want to continue with the other files? (y/n) "
00086           "")) {
00087     OUTPUT « "Aborting...";
00088     LOG_INFO « "Application ended by user Input";
00089     return false;
00090   }
00091   std::cout « std::endl;
00092   return true;
00093 }
00094
00095 } // namespace utilities
```

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