

JSON2Batch

0.2.1

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# Chapter 1

## JSON2Batch

*This file is autogenerated. Changes will be overwritten*

### 1.1 JSON2Batch

**Todo** Update [README.md](#)

Beschreibung: A simple tool to convert json to batch.

Version: 0.2.1

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

Documentation: <https://definitelynotsimon13.github.io/ProjectJsonToBat>

#### Aktueller Plan:

- Verantwortlichkeiten zugewiesen
- "Sprint" bis ?

#### Verantwortlichkeiten:

- [CMake](#) &#8594 Simon
- [JsonParsing](#) &#8594 Elena und Sonia
- [Batch Creation](#) &#8594 Max
- [CLI](#) &#8594 Simon

#### Andere Arbeitspakete

- Error Handling
- Unit Tests
- Code Quality
- Documentation

#### Bezüglich Code Quality

- Kein using namespace

- Nur main im Global Namespace

### Wichtige Commands

Branch wechseln

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

### Kurze Doxygen Übersicht

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

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

## Chapter 2

# Todo List

Member [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:

StyleHelpers . . . . .	15
------------------------	----





# Chapter 4

## Namespace Index

### 4.1 Namespace List

Here is a list of all namespaces with brief descriptions:

<a href="#">cli</a>	Includes everything regarding the CLI . . . . .	17
<a href="#">exceptions</a>	Namespace used for customized exceptions . . . . .	18
<a href="#">parsing</a>	The namespace containing everything relevant to parsing . . . . .	19
<a href="#">utilities</a>	Includes all utilities . . . . .	19



## Chapter 5

# Hierarchical Index

### 5.1 Class Hierarchy

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

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options . . . . .	73
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## Chapter 6

# Class Index

### 6.1 Class List

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

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Base class for all custom exceptions . . . . .	32
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<a href="#">exceptions::InvalidTypeException</a>	
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<a href="#">parsing::JsonHandler</a>	
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# Chapter 7

## File Index

### 7.1 File List

Here is a list of all files with brief descriptions:

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## 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 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 existing 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.*

### 9.2.1 Detailed Description

Namespace used for customized exceptions.

## 9.3 parsing Namespace Reference

The namespace containing everything relevant to parsing.

### Classes

- class [FileData](#)  
*This class contains all data from the json file.*
- class [JsonHandler](#)  
*This file reads all data from the json file.*
- class [KeyValidator](#)  
*Validates keys of a `Json::Value` object.*

### 9.3.1 Detailed Description

The namespace containing everything relevant to parsing.

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

#### See also

[JsonHandler](#)  
[FileData](#)  
[KeyValidator](#)  
[BatchCreator](#)

**Todo** Document – map/set for efficient

## 9.4 utilities Namespace Reference

Includes all utilities.

### Classes

- class [Utils](#)  
*Responsible for utility function.*

### 9.4.1 Detailed Description

Includes all utilities.

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

#### See also

[Utils](#)



# Chapter 10

## Class Documentation

### 10.1 BatchCreator Class Reference

Erstellt Batch Datei.

```
#include <BatchCreator.hpp>
```

#### Public Member Functions

- [BatchCreator](#) (std::shared\_ptr< [parsing::FileData](#) > [fileData](#))  
*Initialisiert [BatchCreator](#).*
- 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 setzen.*
- void [writePathVariables](#) () const  
*Pfade setzen.*
- void [writeApp](#) () const  
*Öffnet Anwendung 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 25 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](#).

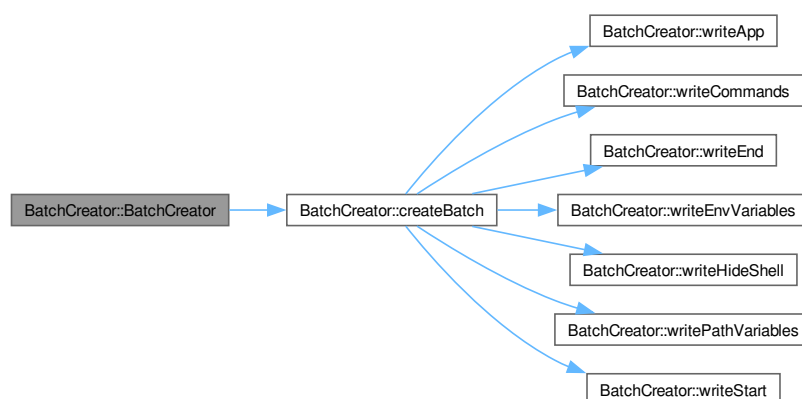
Parameters

<i>filename</i>	
-----------------	--

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]
```



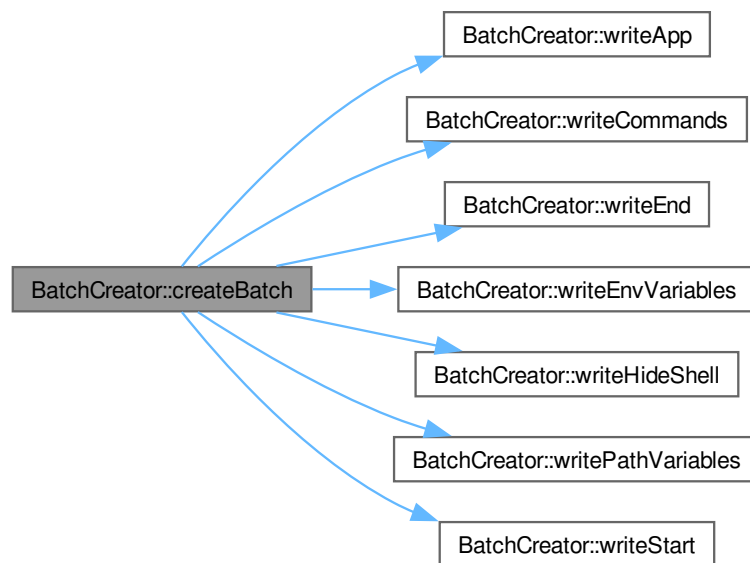
Setzt batch Datei zusammen.

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 37 of file [BatchCreator.hpp](#).

References [dataStream](#).

Here is the caller graph for this function:



### 10.1.3.3 writeApp()

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

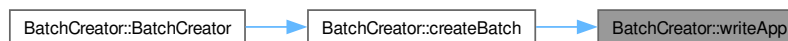
Öffnet Anwendung falls gewünscht.

Öffnet Anwendung, 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.

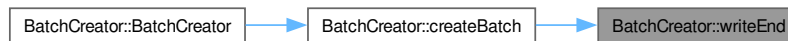
Schreibt den teil der Batch Datei der immer gleich ist

- 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]
```

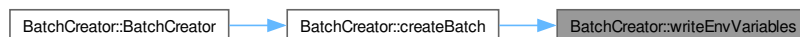
Umgebungsvariablen setzten.

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]
```

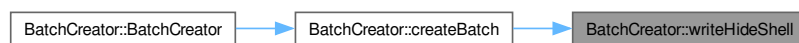
Sichtbarkeit Konsole.

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]
```

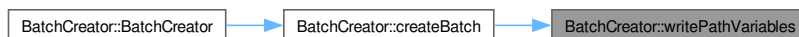
Pfade setzen.

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.

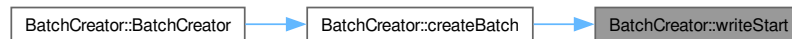
Schreibt den Teil der Batch Datei der immer gleich ist.

- 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 42 of file [BatchCreator.hpp](#).

### 10.1.4.2 fileData

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

Definition at line 44 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

<i>argc</i>	The number of arguments given
<i>argv</i>	The arguments given

#### Exceptions

<i>std::logic_error</i>	
-------------------------	--

#### Returns

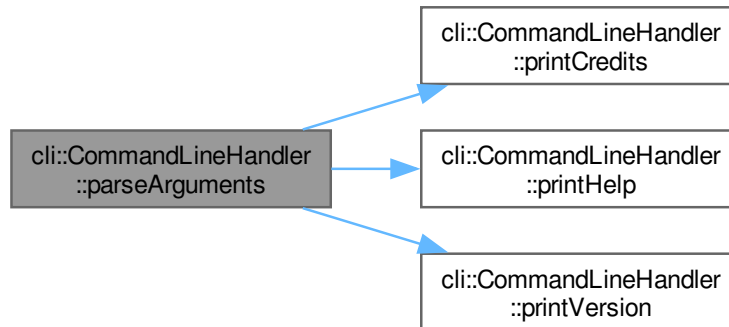
Returns a vector of strings containing all filenames.

**Todo** Update documentation

Definition at line 67 of file [CommandLineHandler.cpp](#).

References [printCredits\(\)](#), [printHelp\(\)](#), and [printVersion\(\)](#).

Here is the call graph for this function:



Here is the caller graph for this function:



### 10.2.3.2 printCredits()

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

Prints the credits message.

Prints the credits message when called.



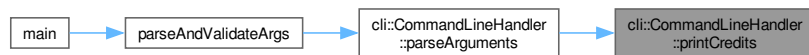
**Note**

This function ends the application.

Definition at line 50 of file [CommandLineHandler.cpp](#).

References [AUTHORS](#), [DESCRIPTION](#), [HOMEPAGE\\_URL](#), [MAJOR\\_VERSION](#), [MINOR\\_VERSION](#), [PATCH\\_VERSION](#), and [PROJECT\\_NAME](#).

Here is the caller graph for this function:

**10.2.3.3 printHelp()**

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

Prints the help message.

Prints the help message when called.

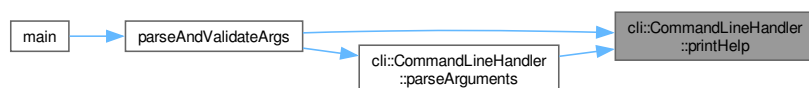
**Note**

This function ends the application.

Definition at line 22 of file [CommandLineHandler.cpp](#).

References [EXECUTABLE\\_NAME](#).

Here is the caller graph for this function:



#### 10.2.3.4 printVersion()

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

Prints the version message.

Prints the version message when called.

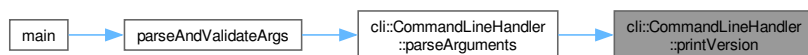
##### Note

This function ends the application.

Definition at line 44 of file [CommandLineHandler.cpp](#).

References [MAJOR\\_VERSION](#), [MINOR\\_VERSION](#), [PATCH\\_VERSION](#), and [PROJECT\\_NAME](#).

Here is the caller graph for this function:



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

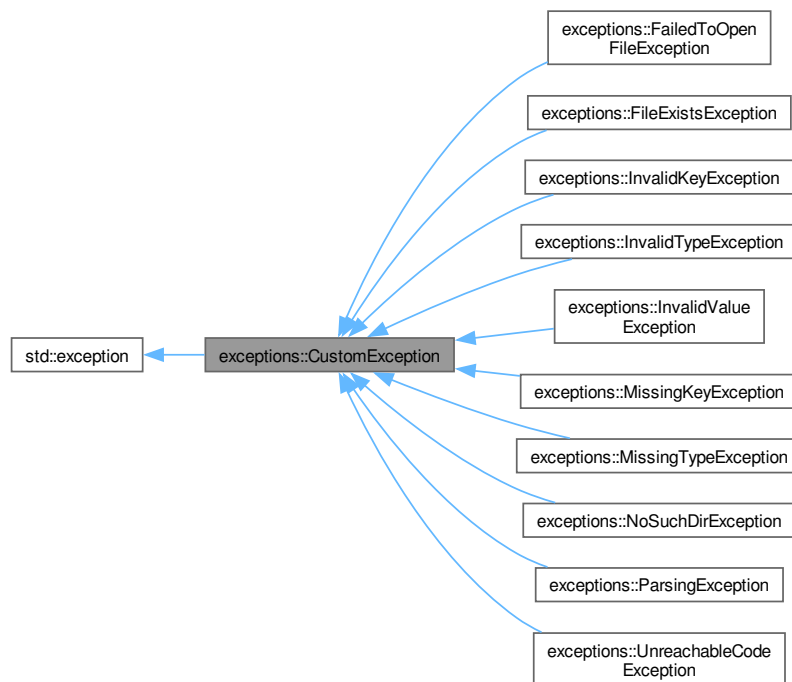
- [src/include/CommandLineHandler.hpp](#)
- [src/sources/CommandLineHandler.cpp](#)

## 10.3 exceptions::CustomException Class Reference

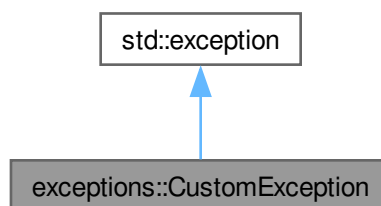
Base class for all custom exceptions.

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

Inheritance diagram for exceptions::CustomException:



Collaboration diagram for exceptions::CustomException:



## Public Member Functions

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

### 10.3.1 Detailed Description

Base class for all custom exceptions.

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

See also

`std::exception`

Definition at line 30 of file [Exceptions.hpp](#).

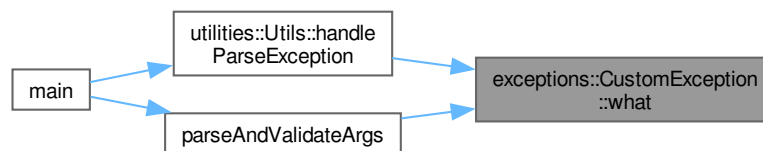
## 10.3.2 Member Function Documentation

### 10.3.2.1 `what()`

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

Definition at line 32 of file [Exceptions.hpp](#).

Here is the caller graph for this function:



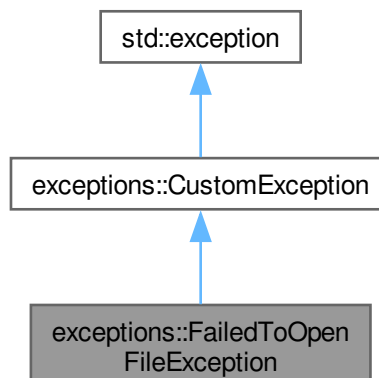
The documentation for this class was generated from the following file:

- `src/include/Exceptions.hpp`

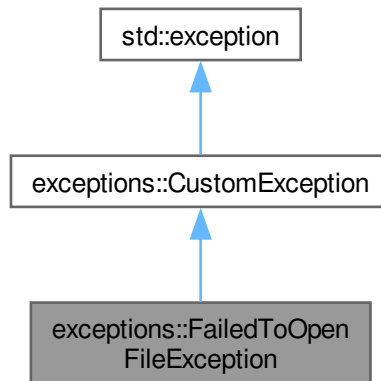
## 10.4 `exceptions::FailedToOpenFileException` Class Reference

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

Inheritance diagram for `exceptions::FailedToOpenFileException`:



Collaboration diagram for exceptions::FailedToOpenFileException:



#### Public Member Functions

- [FailedToOpenFileException](#) (const std::string &file)
- const char \* [what](#) () const noexcept override

#### Public Member Functions inherited from [exceptions::CustomException](#)

- const char \* [what](#) () const noexcept override

#### Private Attributes

- std::string [message](#)

### 10.4.1 Detailed Description

Definition at line 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

<i>command</i>	The command to be added
----------------	-------------------------

#### Exceptions

<a href="#">exceptions::InvalidValueException</a>	
---	--

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

<i>name</i>	The name of the env variable
<i>value</i>	The value of the env variable

## Exceptions

<a href="#">exceptions::InvalidValueException</a>	
---	--

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

<i>pathValue</i>	The value to be added
------------------	-----------------------

## Exceptions

<a href="#">exceptions::InvalidValueException</a>	
---	--

Definition at line 83 of file [FileData.cpp](#).

References [pathValues](#).

### 10.5.2.4 getApplication()

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

Getter for this->application.

## Returns

The assigned application

Definition at line 120 of file [FileData.hpp](#).

References [application](#).



#### 10.5.2.5 getCommands()

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

Getter for this->commands.

##### Returns

The vector of assigned commands

Definition at line 128 of file [FileData.hpp](#).

References [commands](#).

#### 10.5.2.6 getEnvironmentVariables()

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

Getter for this->environmentVariables.

##### Returns

The vector of assigned env variables

Definition at line 137 of file [FileData.hpp](#).

References [environmentVariables](#).

#### 10.5.2.7 getHideShell()

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

Getter for this->hideShell.

##### Returns

The assigned value for hideshow

Definition at line 112 of file [FileData.hpp](#).

References [hideShell](#).

#### 10.5.2.8 getOutputFile()

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

Getter for this->outputfile.

##### Returns

The assigned outputfile

Definition at line 104 of file [FileData.hpp](#).

References [outputfile](#).

### 10.5.2.9 getPathValues()

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

Getter for this->pathValues.

#### Returns

The vector of assigned pathValues

Definition at line 145 of file [FileData.hpp](#).

References [pathValues](#).

### 10.5.2.10 setApplication()

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

Setter for this->application.

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

#### Parameters

<i>newApplication</i>	The application to be set
-----------------------	---------------------------

Definition at line 44 of file [FileData.cpp](#).

References [application](#).

### 10.5.2.11 setHideShell()

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

Setter for this->hideshell.

#### Parameters

<i>newHideShell</i>	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

<i>newOutputfile</i>	The outputfile to be set
----------------------	--------------------------

#### Exceptions

<a href="#">exceptions::InvalidValueException</a>	
---	--

Definition at line 17 of file [FileData.cpp](#).

References [outputfile](#).

## 10.5.3 Member Data Documentation

### 10.5.3.1 application

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

Definition at line 152 of file [FileData.hpp](#).

### 10.5.3.2 commands

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

Definition at line 153 of file [FileData.hpp](#).

### 10.5.3.3 environmentVariables

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

Definition at line 154 of file [FileData.hpp](#).

### 10.5.3.4 hideShell

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

Definition at line 151 of file [FileData.hpp](#).

### 10.5.3.5 outputfile

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

Definition at line 150 of file [FileData.hpp](#).

### 10.5.3.6 pathValues

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

Definition at line 155 of file [FileData.hpp](#).

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

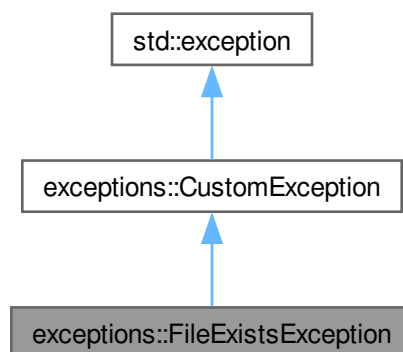
- [src/include/FileData.hpp](#)
- [src/sources/FileData.cpp](#)

## 10.6 exceptions::FileExistsException Class Reference

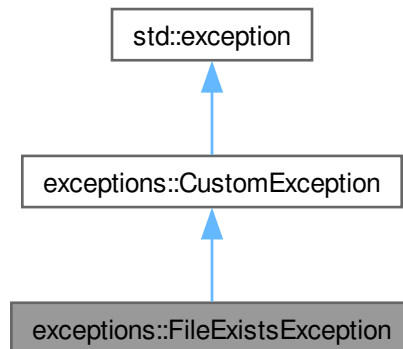
Exception for an already exisiting outputfile.

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

Inheritance diagram for exceptions::FileExistsException:



Collaboration diagram for exceptions::FileExistsException:



#### Public Member Functions

- [FileExistsException](#) (const std::string &[file](#))
- const char \* [what](#) () const noexcept override

#### Public Member Functions inherited from [exceptions::CustomException](#)

- const char \* [what](#) () const noexcept override

#### Private Attributes

- const std::string [file](#)
- std::string [message](#)

### 10.6.1 Detailed Description

Exception for an already existing 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:

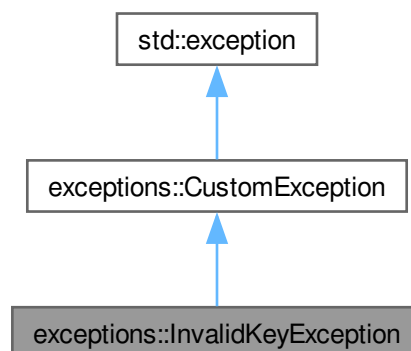
- [src/include/Exceptions.hpp](#)

## 10.7 exceptions::InvalidKeyException Class Reference

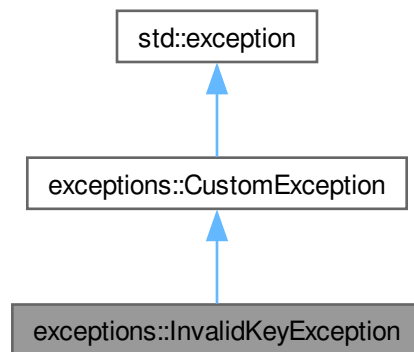
Exception for invalid keys.

```
#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](#)

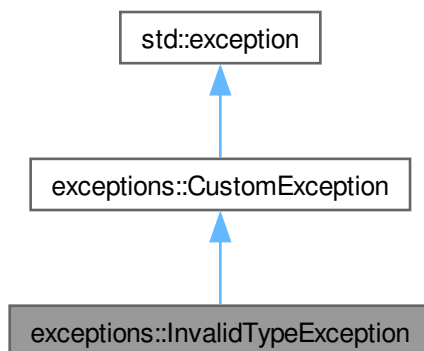
## 10.8 exceptions::InvalidTypeException Class Reference

Exception for invalid types.

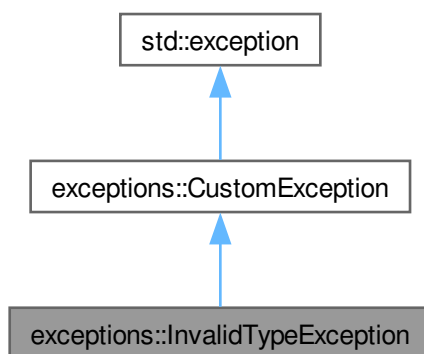
```
#include <Exceptions.hpp>
```



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:

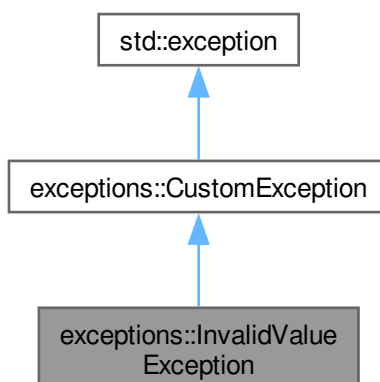
- [src/include/Exceptions.hpp](#)

## 10.9 exceptions::InvalidValueException Class Reference

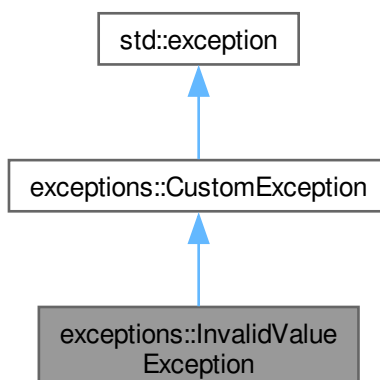
Exception for an ivalid (usually empty) value field.

```
#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 hideshow 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.

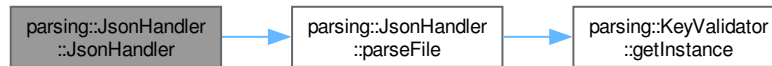
Parameters

<i>filename</i>	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 76 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.

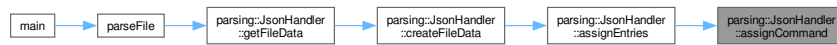
#### Parameters

<i>entry</i>	The entry with the command
--------------	----------------------------

Definition at line 106 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

<i>entry</i>	Json::Value containing an array with entries
--------------	--

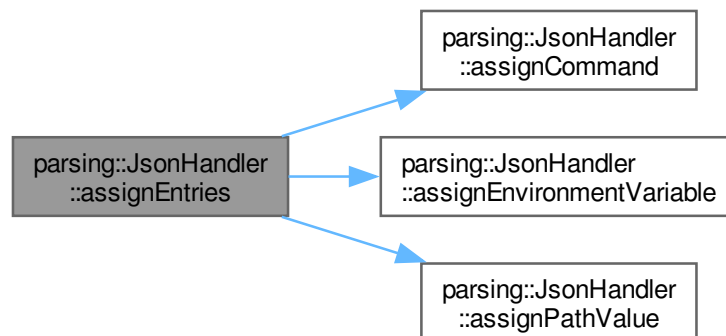
#### Exceptions

<a href="#">exceptions::UnreachableCodeException</a>	
--	--

Definition at line 82 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

<i>entry</i>	The entry with the environmentVariable
--------------	--

Definition at line 112 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

<a href="#">exceptions::FileExistsException</a>
---

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.

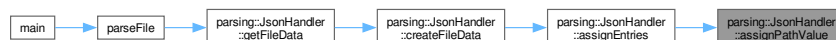
#### Parameters

<i>entry</i>	The entry with the path value
--------------	-------------------------------

Definition at line 119 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.

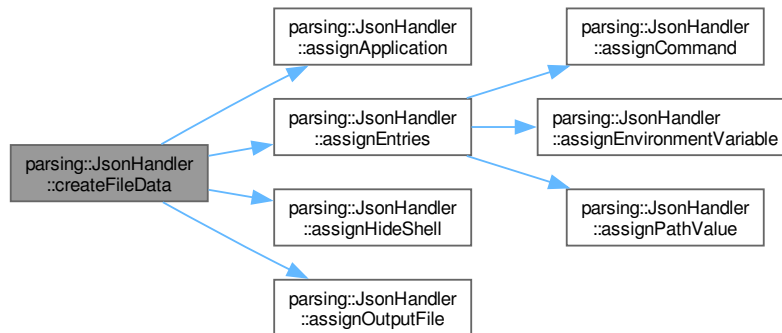
#### Returns

Pointer to the created instance of [FileData](#)

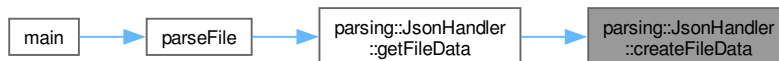
Definition at line 52 of file [JsonHandler.cpp](#).

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.

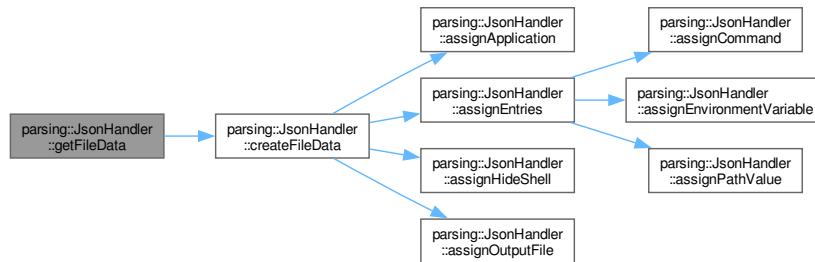
**Returns**

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**

<i>filename</i>	The name of the file wich should be parsed
-----------------	--

### Returns

A shared pointer to the `Json::Value` instance

### See also

[KeyValidator::validateKeys\(\)](#)

### Exceptions

<a href="#">exceptions::ParsingException</a>	
<a href="#">exceptions::InvalidKeyException</a>	

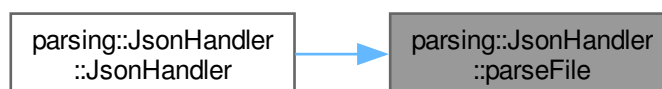
Definition at line 24 of file [JsonHandler.cpp](#).

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.*
- `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 void [validateTypes](#) (const `std::string` &filename, const `Json::Value` &entry, const `std::unordered_set< std::string >` &entryKeys)  
*Validates types from the entries array.*
- static `std::optional< int >` [getUnknownKeyLine](#) (const `std::string` &filename, const `std::string` &wrongKey)

### Private Attributes

- `std::unordered_set< std::string >` [validKeys](#)
- `std::unordered_set< std::string >` [validEntryKeys](#)

### 10.11.1 Detailed Description

Validates keys of a `Json::Value` object.

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

Definition at line 27 of file [KeyValidator.hpp](#).

### 10.11.2 Member Function Documentation

#### 10.11.2.1 getInstance()

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

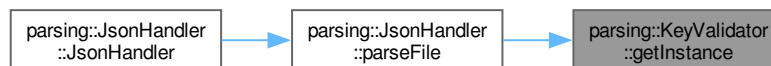
Get the instance of this class.

##### 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

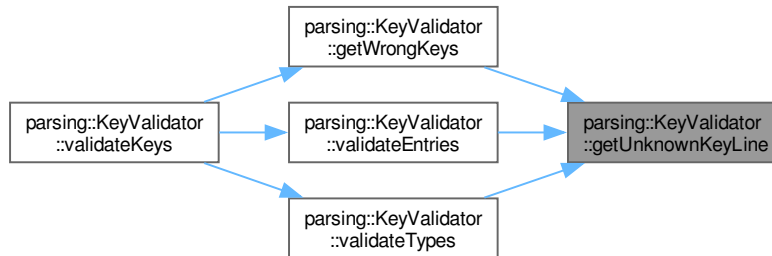
<i>filename</i>	
<i>wrongKey</i>	

##### Returns

**Todo** Documentation

Definition at line 121 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

<i>root</i>	The <code>Json::Value</code> object to be validated.
<i>filename</i>	The filename from which 'root' is from.

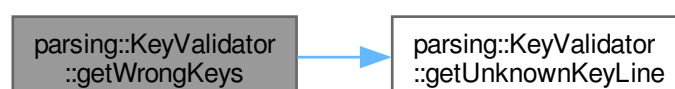
#### Returns

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

Definition at line 51 of file [KeyValidator.cpp](#).

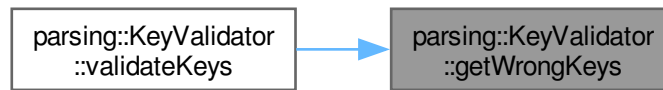
References [getUnknownKeyLine\(\)](#), and [validKeys](#).

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

<i>filename</i>	
<i>entryKeys</i>	

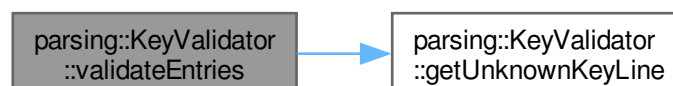
##### Returns

**Todo** Documentation

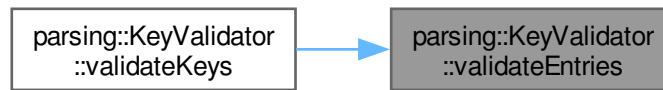
Definition at line 71 of file [KeyValidator.cpp](#).

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

<i>root</i>	The <code>Json::Value</code> object to be validated.
<i>filename</i>	The filename from which 'root' is from.

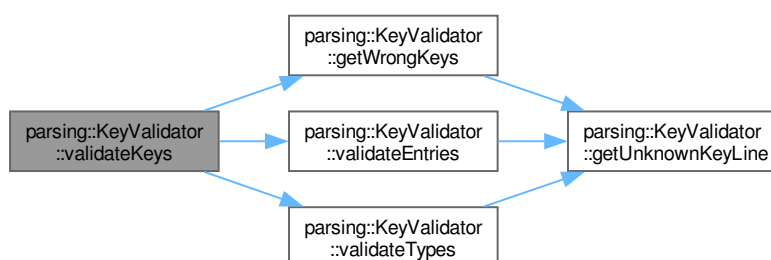
#### Returns

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 ) [static], [private]
```

Validates types from the entries array.

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

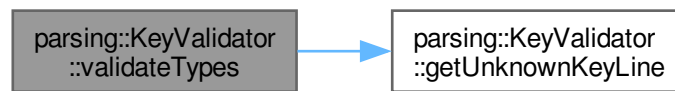
#### Parameters

<i>filename</i>	The filename from which 'entry' is from
<i>entry</i>	
<i>entryKeys</i>	

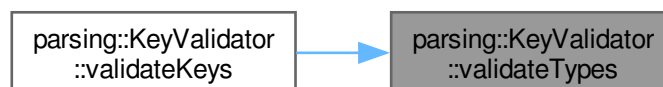
Definition at line 92 of file [KeyValidator.cpp](#).

References [getUnknownKeyLine\(\)](#).

Here is the call graph for this function:



Here is the caller graph for this function:



## 10.11.3 Member Data Documentation

### 10.11.3.1 validEntryKeys

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

#### Initial value:

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

Definition at line 111 of file [KeyValidator.hpp](#).

### 10.11.3.2 validKeys

```
std::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:

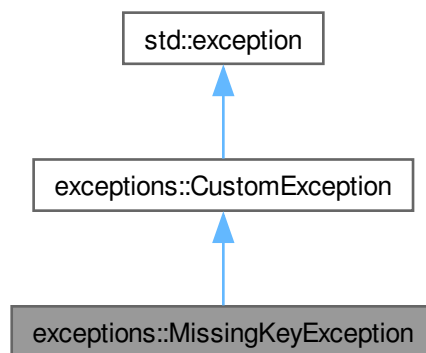
- [src/include/KeyValidator.hpp](#)
- [src/sources/KeyValidator.cpp](#)

## 10.12 exceptions::MissingKeyException Class Reference

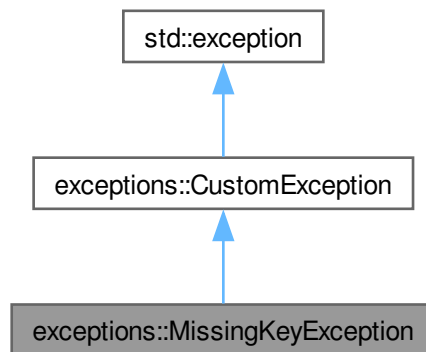
Exception for missing keys within entries.

```
#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:

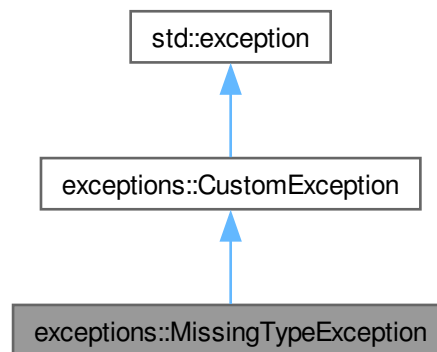
- [src/include/Exceptions.hpp](#)

## 10.13 exceptions::MissingTypeException Class Reference

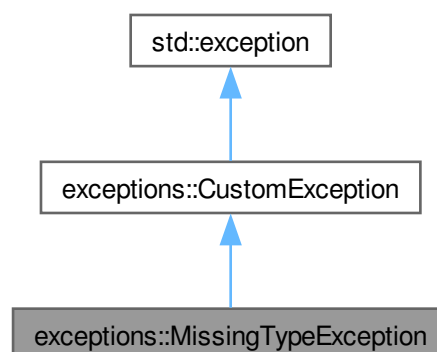
Exception for missing types of entries.

```
#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:

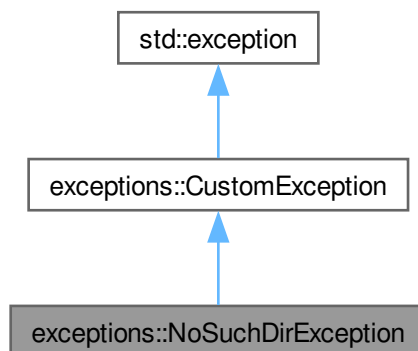
- `src/include/Exceptions.hpp`



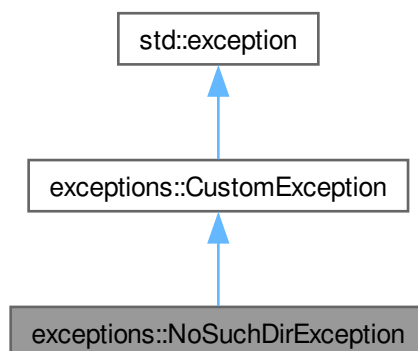
## 10.14 exceptions::NoSuchDirException Class Reference

```
#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:

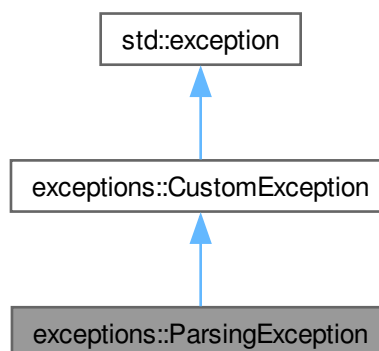
- [src/include/CommandLineHandler.hpp](#)

## 10.16 exceptions::ParsingException Class Reference

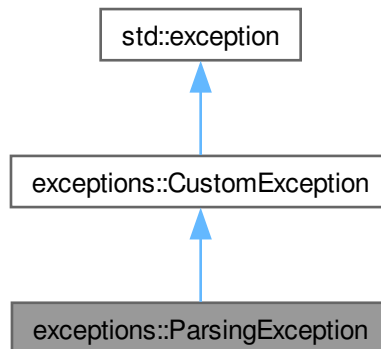
Exception for syntax errors within the json file.

```
#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:

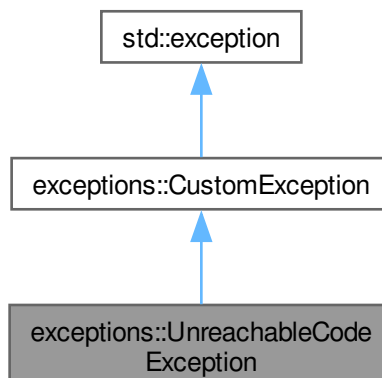
- [src/include/Exceptions.hpp](#)

## 10.17 exceptions::UnreachableCodeException Class Reference

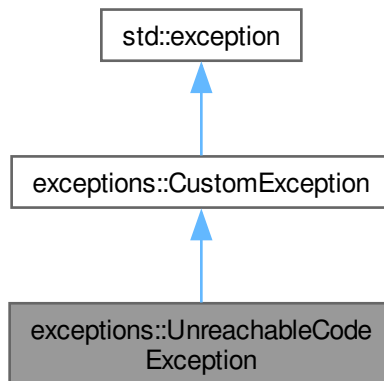
Exception for when the application reaches code it shouldn't reach.

```
#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 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**

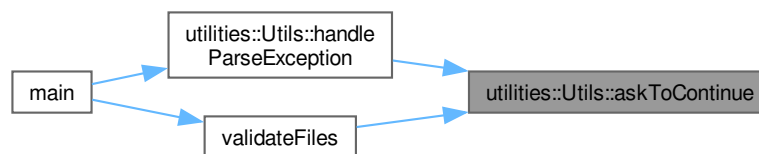
<i>prompt</i>	(Optional) A custom prompt to be used.
---------------	--

**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 checkDirectory()**

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

**Todo** documentation

Definition at line 55 of file [Utils.cpp](#).

Here is the caller graph for this function:





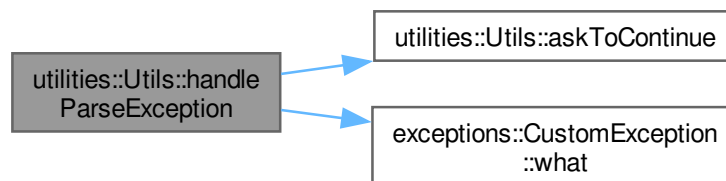
### 10.18.2.3 handleParseException()

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

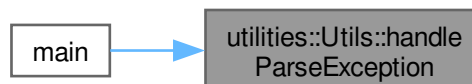
Definition at line 66 of file [Utils.cpp](#).

References [askToContinue\(\)](#), and [exceptions::CustomException::what\(\)](#).

Here is the call graph for this function:



Here is the caller graph for this function:



### 10.18.2.4 setupEasyLogging()

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

Set up easylogging.

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

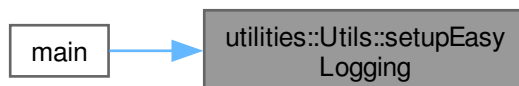
#### Parameters

<i>configFile</i>	The config file which is used
-------------------	-------------------------------

Definition at line 26 of file [Utils.cpp](#).

References [HOMEPAGE\\_URL](#), [MAJOR\\_VERSION](#), [MINOR\\_VERSION](#), [PATCH\\_VERSION](#), and [PROJECT\\_NAME](#).

Here is the caller graph for this function:



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

- [src/include/Utils.hpp](#)
- [src/sources/Utils.cpp](#)

# Chapter 11

## File Documentation

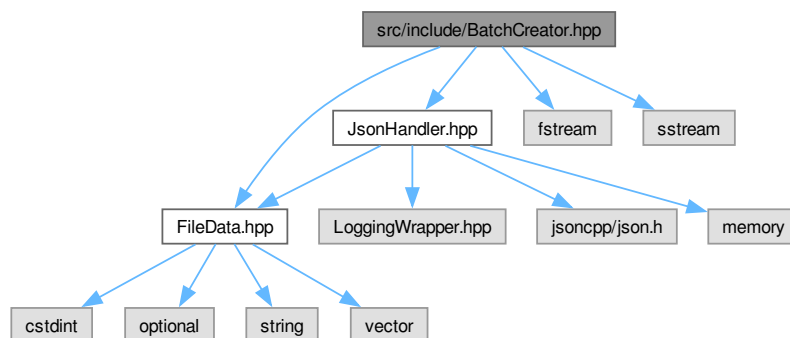
### 11.1 README.md File Reference

### 11.2 src/include/BatchCreator.hpp File Reference

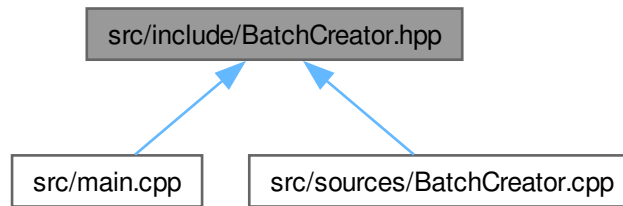
Creates batch file.

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

#### Author

Maximilian Rodler

#### Date

22.04.2024

#### Version

Creates batch file from Arguments in JSON

#### Copyright

See LICENSE file

Definition in file [BatchCreator.hpp](#).

## 11.3 BatchCreator.hpp

[Go to the documentation of this file.](#)

```

00001
00012 #include "FileData.hpp"
00013 #include "JsonHandler.hpp"
00014 #include <fstream>
00015 #include <sstream>
00016
00025 class BatchCreator {
00026 public:
00034     explicit BatchCreator(std::shared_ptr<parsing::FileData> fileData);
00035
00037     [[nodiscard]] std::shared_ptr<std::stringstream> getDataStream() const {
00038         return dataStream;
00039     }
00040
00041 private:
00042     std::shared_ptr<std::stringstream> dataStream;
00043
00044     std::shared_ptr<parsing::FileData> fileData;
00045
00051     void createBatch();
00052
00060     void writeStart() const;
00061
00067     void writeHideShell() const;
00068
00075     void writeCommands() const;
00076
00083     void writeEnvVariables() const;
00084
00091     void writePathVariables() const;
00092
00099     void writeApp() const;
00100
00107     void writeEnd() const;
00108 };

```

## 11.4 src/include/CommandLineHandler.hpp File Reference

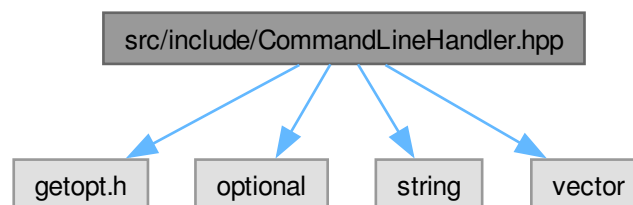
Responsible for the Command Line Interface.

```

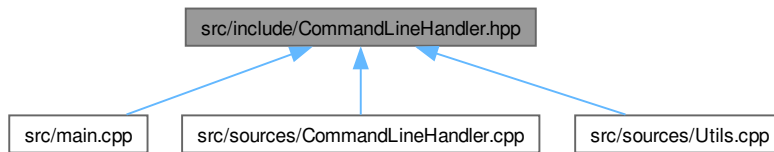
#include <getopt.h>
#include <optional>
#include <string>
#include <vector>

```

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 [CommandLineHandler](#) 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.](#)

```

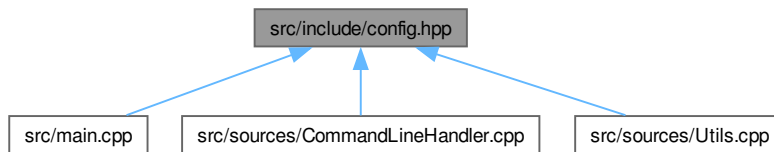
00001
00019 #ifndef COMMANDLINEHANDLER_HPP
00020 #define COMMANDLINEHANDLER_HPP
00021
00022 #include <getopt.h>
00023 #include <optional>
00024 #include <string>
00025 #include <vector>
00026
00039 namespace cli {
00040
00053 class CommandLineHandler {
00054 public:
00062     [[noreturn]] static void 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[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
00168 // end of group StyleHelpers
00169 } // namespace cli
00170
00171 #endif // COMMANDLINEHANDLER_HPP

```

## 11.6 src/include/config.hpp File Reference

Configures general project information.

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



## Macros

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

### 11.6.1 Detailed Description

Configures general project information.

#### Author

Simon Blum

#### Date

2024-04-18

#### Version

0.1.5

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

#### Note

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

#### Copyright

See LICENSE file

Definition in file [config.hpp](#).



## 11.6.2 Macro Definition Documentation

### 11.6.2.1 AUTHORS

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

Definition at line 27 of file [config.hpp](#).

### 11.6.2.2 DESCRIPTION

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

Definition at line 25 of file [config.hpp](#).

### 11.6.2.3 EXECUTABLE\_NAME

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

Definition at line 21 of file [config.hpp](#).

### 11.6.2.4 HOMEPAGE\_URL

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

Definition at line 28 of file [config.hpp](#).

### 11.6.2.5 LOG\_CONFIG

```
#define LOG_CONFIG "/home/simon/1_Coding/projectJsonToBat/build/Release/config/easylogging.conf"↵
```

Definition at line 20 of file [config.hpp](#).

### 11.6.2.6 MAJOR\_VERSION

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

Definition at line 22 of file [config.hpp](#).

### 11.6.2.7 MINOR\_VERSION

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

Definition at line 23 of file [config.hpp](#).

### 11.6.2.8 PATCH\_VERSION

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

Definition at line 24 of file [config.hpp](#).

### 11.6.2.9 PROJECT\_NAME

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

Definition at line 26 of file [config.hpp](#).

## 11.7 config.hpp

[Go to the documentation of this file.](#)

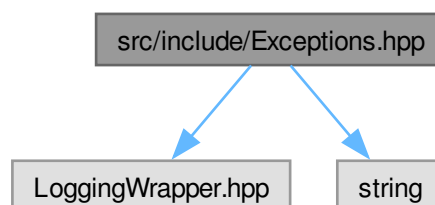
```
00001
00016 // This file is autogenerated. Changes will be overwritten
00017
00018 #ifndef CONFIG_HPP
00019 #define CONFIG_HPP
00020 #define LOG_CONFIG "/home/simon/1_Coding/projectJsonToBat/build/Release/config/easylogging.conf"
00021 #define EXECUTABLE_NAME "json2batch"
00022 #define MAJOR_VERSION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

## 11.8 src/include/Exceptions.hpp File Reference

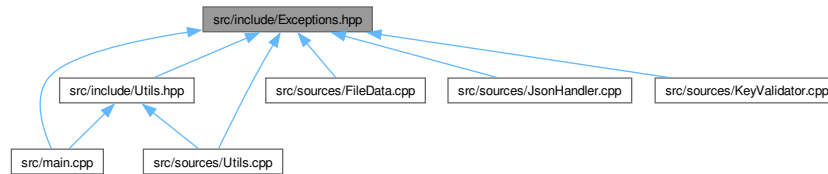
Contains all the custom exceptions used in the project.

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

Include dependency graph for Exceptions.hpp:



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



## Classes

- class [exceptions::CustomException](#)  
*Base class for all custom exceptions.*
- class [exceptions::ParsingException](#)  
*Exception for syntax errors within the json file.*
- class [exceptions::FileExistsException](#)  
*Exception for an already existing 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

**Copyright**

See LICENSE file

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) {
00104         std::stringstream ss;
00105         ss << "Error at key \"" << key << "\"! " << issue;
00106         this->message = ss.str();
00107         LOG_INFO << "InvalidValueException: " << message;
00108     }
00109     [[nodiscard]] const char *what() const noexcept override {
00110         return message.c_str();
00111     }
00112 };
00113
00114 class InvalidKeyException : public CustomException {
00115 private:
00116     std::string message = "Invalid key found!";
00117 public:
00118     explicit InvalidKeyException(
00119         const std::vector<std::tuple<int, std::string>> &keys) {
00120         LOG_INFO << "InvalidKeyException: " << message;
00121         for (const auto &[line, key] : keys) {
00122             LOG_WARNING << "Invalid key found at line " << line << ": \"" << key
00123                 << "\"!";
00124         }
00125     }
00126     [[nodiscard]] const char *what() const noexcept override {
00127         return message.c_str();
00128     }
00129 };
00130
00131 class InvalidTypeException : public CustomException {
00132 private:
00133     const std::string type;
00134     std::string message;
00135 public:
00136     InvalidTypeException(const std::string &type, int line) : type(type) {
00137         std::stringstream ss;
00138         ss << "Invalid type found at line " << line << ": \"" << type << "\"";
00139         this->message = ss.str();
00140         LOG_INFO << "InvalidTypeException: " << message;
00141     }
00142     [[nodiscard]] const char *what() const noexcept override {
00143         return message.c_str();
00144     }
00145 };
00146
00147 class MissingKeyException : public CustomException {
00148 private:
00149     std::string message;
00150     std::string type;
00151     std::string key;
00152 public:
00153     MissingKeyException(const std::string &key, const std::string &type)
00154         : type(type), key(key) {
00155         std::stringstream ss;
00156         ss << "Missing key \"" << key << "\" for type \"" << type << "\"!";
00157         this->message = ss.str();
00158         LOG_INFO << "MissingKeyException: " << message;
00159     }
00160     [[nodiscard]] const char *what() const noexcept override {
00161         return message.c_str();
00162     }
00163 };
00164
00165 class MissingTypeException : public CustomException {
00166 private:
00167     std::string message = "Missing \"type\" key for at least one entry!";
00168 public:
00169     MissingTypeException() {
00170         LOG_INFO << "MissingTypeException: " << message;
00171     }
00172     [[nodiscard]] const char *what() const noexcept override {
00173         return message.c_str();
00174     }
00175 };
00176
00177 class UnreachableCodeException : public CustomException {
00178 private:
00179     std::string message;
00180 public:
00181     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
00250     public:
00251         explicit FailedToOpenFileException(const std::string &file) {
00252             message = "Failed to open file: " + file;
00253             LOG_INFO << "FailedToOpenFileException: " << message;
00254         }
00255         [[nodiscard]] const char *what() const noexcept override {
00256             return message.c_str();
00257         }
00258     };
00259
00260     class NoSuchDirException : public CustomException {
00261     private:
00262         std::string message;
00263
00264     public:
00265         explicit NoSuchDirException(const std::string &dir) {
00266             message = "No such directory: " + dir;
00267             LOG_INFO << "NoSuchDirException: " << message;
00268         }
00269         [[nodiscard]] const char *what() const noexcept override {
00270             return message.c_str();
00271         }
00272     };
00273
00274 };
00275
00276 } // namespace exceptions
00277
00278 #endif

```

## 11.10 src/include/FileData.hpp File Reference

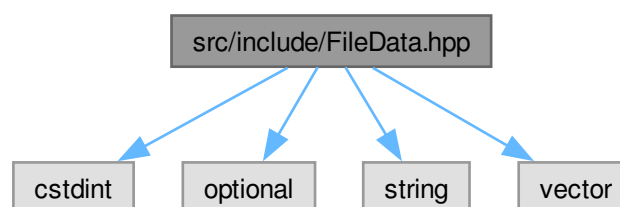
This file contains the FileData class.

```

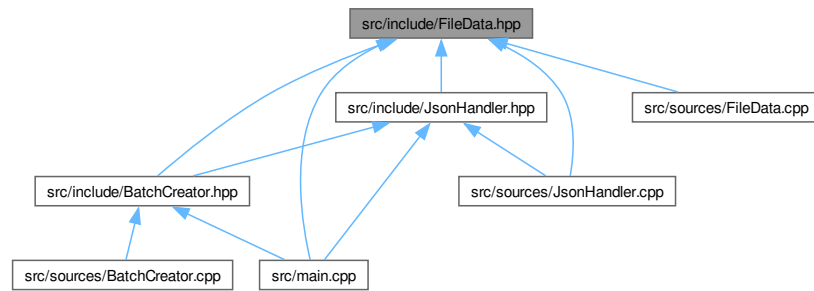
#include <cstdint>
#include <optional>
#include <string>
#include <vector>

```

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

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Definition in file [FileData.hpp](#).

## 11.11 FileData.hpp

[Go to the documentation of this file.](#)

```

00001
00013 #ifndef FILEDATA_HPP
00014 #define FILEDATA_HPP
00015
00016 #include <cstdint>
00017 #include <optional>
00018 #include <string>
00019 #include <vector>
00020
00021 namespace parsing {
00030 class FileData {
00031 public:
00042     void setOutputFile(std::string &newOutputfile);
00043
00048     void setHideShell(bool newHideShell) {
00049         this->hideShell = newHideShell;
00050     }
00051
00060     void setApplication(const std::string &newApplication);
00061
00072     void addCommand(const std::string &command);
00073
00085     void addEnvironmentVariable(const std::string &name,
00086                                 const std::string &value);
00087
00098     void addPathValue(const std::string &pathValue);
00099
00104     [[nodiscard]] const std::string &getOutputFile() const {
00105         return outputfile;
00106     }
00107
00112     [[nodiscard]] bool getHideShell() const {
00113         return hideShell;
00114     }
00115
00120     [[nodiscard]] const std::optional<std::string> &getApplication() const {
00121         return application;
00122     }
00123
00128     [[nodiscard]] const std::vector<std::string> &getCommands() const {
00129         return commands;
00130     }
00131
00136     [[nodiscard]] const std::vector<std::tuple<std::string, std::string> &
00137     getEnvironmentVariables() const {
00138         return environmentVariables;
00139     }
00140
00145     [[nodiscard]] const std::vector<std::string> &getPathValues() const {
00146         return pathValues;
00147     }
00148
00149 private:
00150     std::string outputfile;
00151     bool hideShell;
00152     std::optional<std::string> application;
00153     std::vector<std::string> commands;
00154     std::vector<std::tuple<std::string, std::string> > environmentVariables;
00155     std::vector<std::string> pathValues;
00156 };
00157 } // namespace parsing
00158
00159 #endif // FILEDATA_HPP

```

## 11.12 src/include/JsonHandler.hpp File Reference

This file contains the JsonHandler class.

```

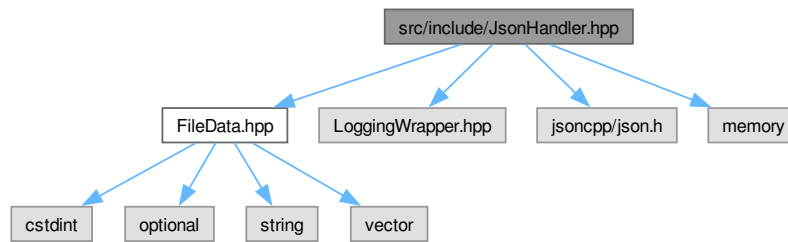
#include "FileData.hpp"
#include "LoggingWrapper.hpp"
#include <jsoncpp/json.h>

```

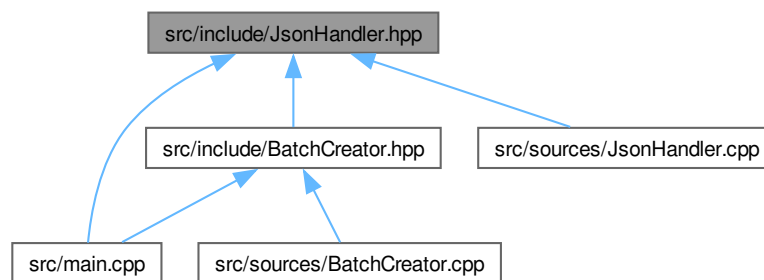


```
#include <memory>
```

Include dependency graph for JsonHandler.hpp:



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



## Classes

- class `parsing::JsonHandler`

*This file reads all data from the json file.*

## Namespaces

- namespace `parsing`

*The namespace containing everything relevant to parsing.*

### 11.12.1 Detailed Description

This file contains the `JsonHandler` class.

#### Author

Sonia Sinacci, Elena Schwartzbach

**Date**

23.04.2024

**Version**

0.1.5

**See also**[parsing::JsonHandler](#)**Copyright**

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

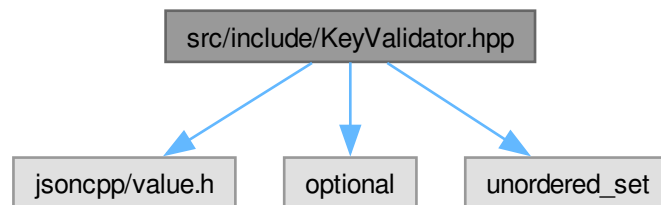
This file contains the KeyValidator class.

```
#include "jsoncpp/value.h"
```

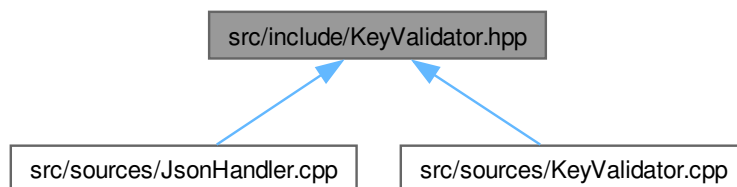
```
#include <optional>
```

```
#include <unordered_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

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Definition in file [KeyValidator.hpp](#).

## 11.15 KeyValidator.hpp

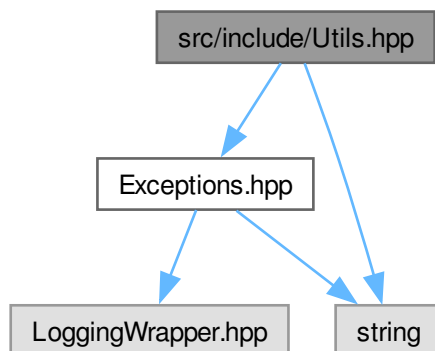
[Go to the documentation of this file.](#)

```
00001
00012 #ifndef KEYVALIDATOR_HPP
00013 #define KEYVALIDATOR_HPP
00014
00015 #include "jsoncpp/value.h"
00016 #include <optional>
00017 #include <unordered_set>
00018 namespace parsing {
00027 class KeyValidator {
00028 public:
00034     static KeyValidator &getInstance();
00035
00049     std::vector<std::tuple<int, std::string>
00050     validateKeys(const Json::Value &root, const std::string &filename);
00051
00052 private:
00065     std::vector<std::tuple<int, std::string>
00066     getWrongKeys(const Json::Value &root, const std::string &filename) const;
00067
00077     static void validateTypes(const std::string &filename,
00078                             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     };
00111     std::unordered_set<std::string> validEntryKeys = {"type", "key", "value",
00112         "path", "command"
00113     };
00114 };
00115 } // namespace parsing
00116
00117 #endif
```

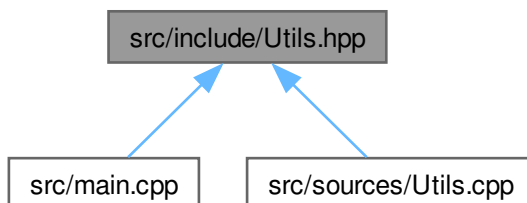
## 11.16 src/include/Utils.hpp File Reference

```
#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.*



## Functions

- INITIALIZE\_EASYLOGGINGPP void [checkConfigFile](#) ()
- 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 &outDir)
- 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 checkConfigFile()

```
void checkConfigFile ( )
```

#### Returns

Definition at line 109 of file [main.cpp](#).

References [LOG\\_CONFIG](#).

Here is the caller graph for this function:



### 11.18.2.2 main()

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

Main function of the program.

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

#### Parameters

<i>argc</i>	The number of arguments given
<i>argv</i>	Th command line arguments given

#### Returns

Returns 0 on success, 1 on failure

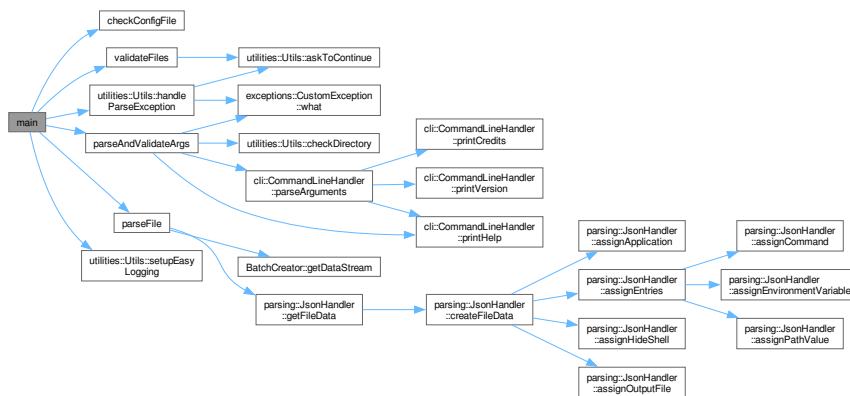
**Todo** Documentation

Refactoring

Definition at line 82 of file [main.cpp](#).

References [checkConfigFile\(\)](#), [utilities::Utils::handleParseException\(\)](#), [LOG\\_CONFIG](#), [parseAndValidateArgs\(\)](#), [parseFile\(\)](#), [utilities::Utils::setupEasyLogging\(\)](#), and [validateFiles\(\)](#).

Here is the call graph for this function:



### 11.18.2.3 parseAndValidateArgs()

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



## Parameters

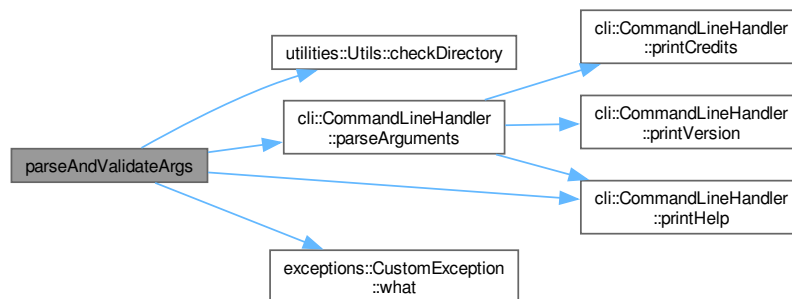
<i>argc</i>	
<i>argv</i>	

## Returns

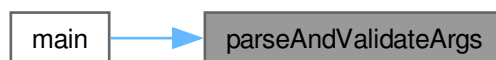
Definition at line 121 of file [main.cpp](#).

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:



## 11.18.2.4 parseFile()

```

void parseFile (
    const std::string & file,
    const std::string & outDir )

```

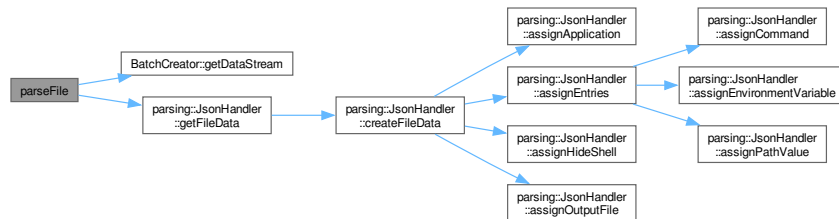
## Parameters

<i>file</i>	
-------------	--

Definition at line 174 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:



#### 11.18.2.5 validateFiles()

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

##### Parameters

<i>files</i>	
--------------	--

##### Returns

Definition at line 144 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 <jsoncpp/json.h>
00018 #include <tuple>
00019 #include <vector>
00020
00021 #include "BatchCreator.hpp"
00022 #include "CommandLineHandler.hpp"
00023 #include "Exceptions.hpp"
00024 #include "FileData.hpp"
00025 #include "JsonHandler.hpp"
00026 #include "Utils.hpp"
00027 #include "config.hpp"
00028
00029 INITIALIZE_EASYLOGGINGPP
00030
00037 void checkConfigFile();
00038
00047 std::tuple<std::vector<std::string>, std::string>
00048 parseAndValidateArgs(int argc, char *argv[]);
00049
00057 std::vector<std::string> validateFiles(const std::vector<std::string> &files);
00058
00065 void parseFile(const std::string &file, const std::string &outDir);
00066
00082 int main(int argc, char *argv[]) {
00083
00084     checkConfigFile();
00085     utilities::Utils::setupEasyLogging(LOG_CONFIG);
00086     auto [files, outDir] = parseAndValidateArgs(argc, argv);
00087     OUTPUT << cli::BOLD << "Parsing the following files:\n" << cli::RESET;
00088     for (const auto &file : files) {
00089         OUTPUT << "\t - " << file << "\n";
00090     }
00091
00092     files = validateFiles(files);
00093     for (auto file = files.begin(); file != files.end(); ++file) {
00094         OUTPUT << cli::ITALIC << "\nParsing file: " << *file << "... \n"
  
```

```

00095         « cli::RESET;
00096     try {
00097         parseFile(*file, outDir);
00098     } catch (const exceptions::CustomException &e) {
00099         if (utilities::Utils::handleParseException(e, file, files)) {
00100             continue;
00101         }
00102         exit(1);
00103     }
00104 }
00105 LOG_INFO « "Exiting...";
00106 return 0;
00107 }
00108
00109 void checkConfigFile() {
00110     if (!std::filesystem::is_regular_file(LOG_CONFIG)) {
00111         std::cerr « cli::RED « cli::BOLD
00112             « "Fatal: Easylogging configuration file not found at:\n"
00113             « cli::RESET « cli::ITALIC « "\n\t\"" « LOG_CONFIG « "\"\n\n"
00114             « cli::RESET;
00115         std::cout « "Aborting...\n";
00116         exit(1);
00117     }
00118 }
00119
00120 std::tuple<std::vector<std::string>, std::string>
00121 parseAndValidateArgs(int argc, char *argv[]) {
00122     if (argc < 2) {
00123         LOG_ERROR « "No options given!\n";
00124         cli::CommandLineHandler::printHelp();
00125         exit(1);
00126     }
00127     auto [outOption, files] = cli::CommandLineHandler::parseArguments(argc, argv);
00128     std::string outDir = outOption.value_or("");
00129     if (!outDir.empty()) {
00130         try {
00131             outDir = utilities::Utils::checkDirectory(outDir);
00132         } catch (const exceptions::CustomException &e) {
00133             LOG_ERROR « e.what();
00134             exit(1);
00135         }
00136     }
00137     if (files.empty()) {
00138         LOG_ERROR « "No files were given as arguments!\n";
00139         exit(1);
00140     }
00141     return {files, outDir};
00142 }
00143
00144 std::vector<std::string> validateFiles(const std::vector<std::string> &files) {
00145     std::vector<std::string> validFiles;
00146     validFiles.reserve(files.size());
00147     for (const std::filesystem::path file : files) {
00148         if (!std::filesystem::is_regular_file(file)) {
00149             LOG_ERROR « "The file \"" « file « "\" does not exist!\n";
00150             if (files.size() > 1 &&
00151                 !utilities::Utils::askToContinue("Do you want to continue with the "
00152                     "remaining files? (y/n) ")) {
00153                 OUTPUT « "Aborting...\n";
00154                 LOG_INFO « "Application ended by user Input";
00155                 exit(1);
00156             }
00157             continue;
00158         }
00159         if (file.extension() != ".json") {
00160             LOG_WARNING « "The file \"" « file « "\" does not end in \".json\"\n";
00161             OUTPUT « "If the file is not in JSON Format, continuing may "
00162                 « "result in\nunexpected behaviour!\n";
00163             if (!utilities::Utils::askToContinue()) {
00164                 OUTPUT « "Aborting...\n";
00165                 LOG_INFO « "Application ended by user Input";
00166                 exit(1);
00167             }
00168         }
00169         validFiles.push_back(file);
00170     }
00171     return validFiles;
00172 }
00173
00174 void parseFile(const std::string &file, const std::string &outputDirectory) {
00175     parsing::JsonHandler jsonHandler(file);
00176     auto fileData = jsonHandler.getFileData();
00177     BatchCreator batchCreator(fileData);
00178     std::shared_ptr<std::stringstream> dataStream = batchCreator.getDataStream();
00179     std::string outputFileName = outputDirectory + fileData->getOutputFile();
00180     std::ofstream outFile(outputFileName);
00181     if (!outFile.good()) {

```

```

00182         throw exceptions::FailedToOpenFileException(outputFileName);
00183     }
00184     outFile << dataStream->str();
00185     OUTPUT << "Done with files!\n";
00186 }

```

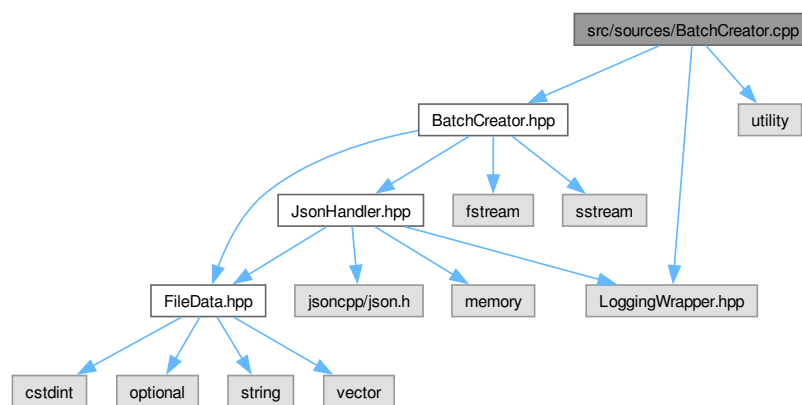
## 11.20 src/sources/BatchCreator.cpp File Reference

```

#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     } else {
00046         LOG_INFO << "writing show Shell";
00047         *this->dataStream << "/k ";
00048     }
00049 }
00050 }
00051
00052 void BatchCreator::writeCommands() const {
00053     LOG_INFO << "writing Commands";
00054     *this->dataStream << "\n";
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>

```

```

graph TD
    Root["src/sources/CommandLineHandler.cpp"] --> CHH["CommandLineHandler.hpp"]
    Root --> LW["LoggingWrapper.hpp"]
    Root --> C["config.hpp"]
    Root --> CS["cstdlib"]
    Root --> CS2["cstring"]
    CHH --> G["getopt.h"]
    CHH --> O["optional"]
    CHH --> S["string"]
    CHH --> V["vector"]
  
```

- namespace `cli`  
*Includes everything regarding the CLI.*

### Implementation for the Command Line Interface.

Simon Blum

2024-04-18

0.1.5

src/include/utility/CommandLineHandler.hpp

See LICENSE file

Generated on Thu Apr 25 2024 19:30:47 for JSON2Batch by Doxygen

## 11.23 CommandLineHandler.cpp

[Go to the documentation of this file.](#)

```

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

```



```

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

```

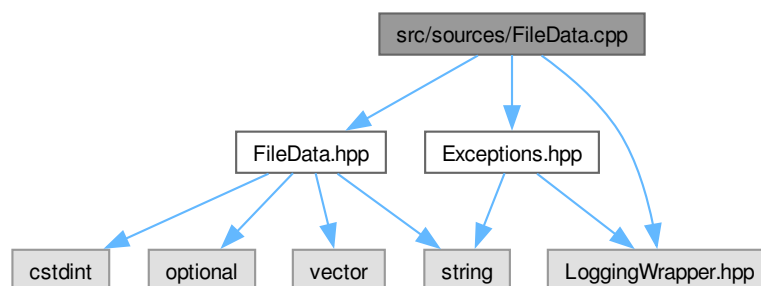
## 11.24 src/sources/FileData.cpp File Reference

```

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

```

Include dependency graph for FileData.cpp:



## Namespaces

- namespace [parsing](#)

*The namespace containing everything relevant to parsing.*

### 11.24.1 Detailed Description

#### Author

#### Date

#### Version

#### Copyright

See LICENSE file

Definition in file [FileData.cpp](#).

## 11.25 FileData.cpp

[Go to the documentation of this file.](#)

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

```

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

```

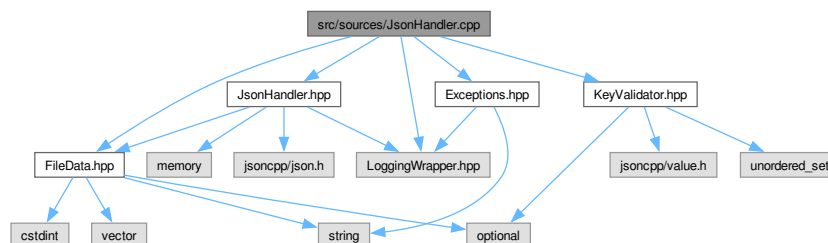
## 11.26 src/sources/JsonHandler.cpp File Reference

```

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

```

Include 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         LOG_INFO << "Parsing file: " << filename << "\n";
00027         std::ifstream file(filename);
00028         Json::Value newRoot;
00029
00030         // Json::Reader.parse() returns false if parsing fails
00031         if (Json::Reader reader; !reader.parse(file, newRoot)) {
00032             throw exceptions::ParsingException(filename);
00033         }
00034
00035         // Validate keys
00036         // Check for errors
00037         if (auto errors = KeyValidator::getInstance().validateKeys(newRoot, filename);
00038             !errors.empty()) {
00039             throw exceptions::InvalidKeyException(errors);
00040         }
00041
00042         LOG_INFO << "File \"" << filename << "\" has been parsed\n";
00043         return std::make_shared<Json::Value>(newRoot);
00044     }
00045 }
```

```

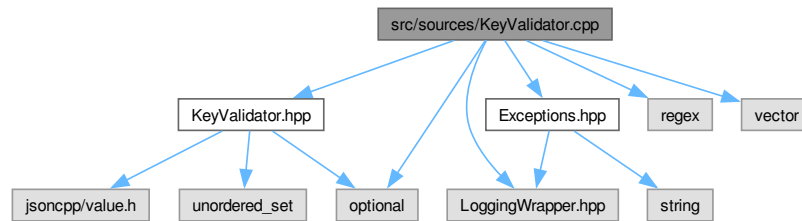
00046
00047 std::shared_ptr<FileData> JsonHandler::getFileData() {
00048     LOG_INFO << "Creating FileData object for return...\n";
00049     return this->createFileData();
00050 }
00051
00052 std::shared_ptr<FileData> JsonHandler::createFileData() {
00053     LOG_INFO << "Creating FileData object...\n";
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     bool hideShell = this->root->get("hideshell", false).asBool();
00073     this->data->setHideShell(hideShell);
00074 }
00075
00076 void JsonHandler::assignApplication() const {
00077     LOG_INFO << "Assigning application...\n";
00078     std::string application = this->root->get("application", "").asString();
00079     this->data->setApplication(application);
00080 }
00081
00082 void JsonHandler::assignEntries() const {
00083     LOG_INFO << "Assigning entries...\n";
00084
00085     for (const auto &entry : this->root->get("entries", "")) {
00086         std::string entryType = entry.get("type", "").asString();
00087
00088         if (entryType == "EXE") {
00089             LOG_INFO << "Calling function to assign command...\n";
00090             this->assignCommand(entry);
00091         } else if (entryType == "ENV") {
00092             LOG_INFO << "Calling function to assign environment variable...\n";
00093             this->assignEnvironmentVariable(entry);
00094         } else if (entryType == "PATH") {
00095             LOG_INFO << "Calling function to assign path value...\n";
00096             this->assignPathValue(entry);
00097         } else {
00098             // Due to validation beforehand - this should never be reached!
00099             throw exceptions::UnreachableCodeException(
00100                 "Unknown entries should be caught by KeyValidator!\nPlease report "
00101                 "this bug!");
00102         }
00103     }
00104 }
00105
00106 void JsonHandler::assignCommand(const Json::Value &entry) const {
00107     LOG_INFO << "Assigning command...\n";
00108     std::string command = entry.get("command", "").asString();
00109     this->data->addCommand(command);
00110 }
00111
00112 void JsonHandler::assignEnvironmentVariable(const Json::Value &entry) const {
00113     LOG_INFO << "Assigning environment variable...\n";
00114     std::string key = entry.get("key", "").asString();
00115     std::string value = entry.get("value", "").asString();
00116     this->data->addEnvironmentVariable(key, value);
00117 }
00118
00119 void JsonHandler::assignPathValue(const Json::Value &entry) const {
00120     LOG_INFO << "Assigning path value...\n";
00121     std::string pathValue = entry.get("path", "").asString();
00122     this->data->addPathValue(pathValue);
00123 }
00124 } // namespace parsing

```

## 11.28 src/sources/KeyValidator.cpp File Reference

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

Include dependency graph for KeyValidator.cpp:



### Namespaces

- namespace [parsing](#)

*The namespace containing everything relevant to parsing.*

### 11.28.1 Detailed Description

Author

Date

Version

Copyright

See LICENSE file

Definition in file [KeyValidator.cpp](#).

## 11.29 KeyValidator.cpp

[Go to the documentation of this file.](#)

```

00001
00011 #include "KeyValidator.hpp"
00012 #include "Exceptions.hpp"
00013 #include "LoggingWrapper.hpp"
00014 #include <optional>
00015 #include <regex>
00016 #include <vector>
00017
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         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             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             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     std::unordered_map<std::string_view, std::vector<std::string> typeToKeys = {
00098         {"EXE", {"command"}}, {"PATH", {"path"}}, {"ENV", {"key", "value"}}
00099     };
00100
00101     if (type == "ERROR") {
00102         throw exceptions::MissingTypeException();
00103     } else if (typeToKeys.contains(type)) {
00104         std::optional<int> line = getUnknownKeyLine(filename, std::string(type));
00105
00106         if (!line.has_value()) {
00107             LOG_INFO « "Unable to find line of wrong type!";
00108         }
00109
00110         throw exceptions::InvalidTypeException(std::string(type), line.value());
00111     } else {
00112         for (const auto &key : typeToKeys[type]) {
00113             if (entryKeys.contains(key)) {
00114                 throw exceptions::MissingKeyException(key, std::string(type));
00115             }
00116         }
00117     }
00118 }
00119
00120 std::optional<int>
00121 KeyValidator::getUnknownKeyLine(const std::string &filename,
00122                                const std::string &wrongKey) {
00123     std::ifstream file(filename);
00124
00125     if (!file.is_open()) {
00126         LOG_ERROR « "File not open!";
00127         return std::nullopt;
00128     }
00129
00130     std::string line;
00131     std::regex wrongKeyPattern("\\b" + wrongKey + "\\b");
00132
00133     for (int lineNumber = 1; std::getline(file, line); ++lineNumber) {
00134         if (std::regex_search(line, wrongKeyPattern)) {
00135             return lineNumber;
00136         }
00137     }
00138     return std::nullopt;
00139 }
00140
00141 } // namespace parsing

```

## 11.30 src/sources/Uutils.cpp File Reference

Implementation for the Uutils class.

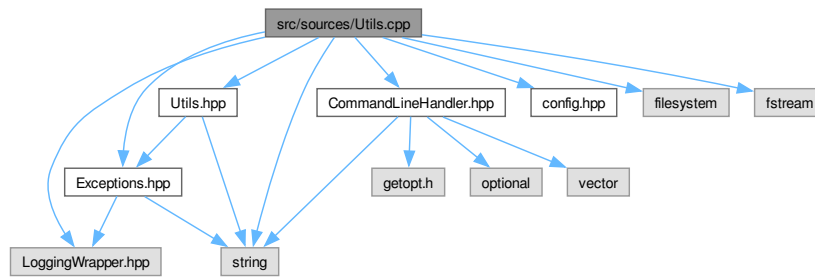
```

#include "Uutils.hpp"
#include "CommandLineHandler.hpp"
#include "Exceptions.hpp"
#include "config.hpp"
#include <LoggingWrapper.hpp>
#include <filesystem>
#include <fstream>
#include <string>

```



Include dependency graph for Utils.cpp:



## Namespaces

- namespace [utilities](#)  
*Includes all utilities.*

### 11.30.1 Detailed Description

Implementation for the Utils class.

#### Author

Simon Blum

#### Date

2024-04-18

#### Version

0.1.5

This file includes the implementation for the Utils class.

#### See also

`src/include/utility/Utilities.hpp`

#### Copyright

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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 <fstream>
00023 #include <string>
00024
00025 namespace utilities {
00026 void Utils::setupEasyLogging(const std::string &configFile) {
00027     el::Configurations conf(configFile);
00028     el::Loggers::reconfigureAllLoggers(conf);
00029     LOG_INFO << "Running " << PROJECT_NAME << " v" << MAJOR_VERSION << "."
00030             << MINOR_VERSION << "." << PATCH_VERSION;
00031     LOG_INFO << "For more Information checkout " << 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 std::string &Utils::checkDirectory(std::string &directory) {
00056     if (!directory.empty() && directory.back() != '/' &&
00057         directory.back() != '\\') {
00058         directory += '/';
00059     }
00060
00061     if (!std::filesystem::exists(directory)) {
00062         throw exceptions::NoSuchDirException(directory);
00063     }
00064     return directory;
00065 }
00066 bool Utils::handleParseException(const exceptions::CustomException &e,
00067     const std::vector<std::string>::iterator &file,
00068     const std::vector<std::string> &files) {
00069     OUTPUT << "\nThere has been a error while trying to parse \"" << *file
00070         << ":\n";
00071     LOG_ERROR << e.what();
00072
00073     if (std::next(file) != files.end() &&
00074         !utilities::Utils::askToContinue(
00075             "Do you want to continue with the other files? (y/n) "
00076             "\")) {
00077         OUTPUT << "Aborting...";
00078         LOG_INFO << "Application ended by user Input";
00079         return false;
00080     }
00081     std::cout << std::endl;
00082     return true;
00083 }
00084
00085 } // namespace utilities

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