

Practice 9

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

Config	26
GlobalConfig	34
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Dashboard	27
CLDashboard	13
Database	33
Interface	36
CLInterface	16
LoginInterface	39
CLLoginInterface	19
Menu	41
CLMenu	22
MenuBar	42
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MinTerminalSize	44
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NotFoundUserException	47
Sensor	48
AirQuality	9
CameraBW	10
CameraRGB	11
Humidity	35
Moisture	45
Thermometer	50
User	52
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Chapter 2

Class Index

2.1 Class List

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

Admin	7
AirQuality	9
CameraBW	10
CameraRGB	11
CLDashboard	13
CLInterface	16
CLLoginInterface	19
CLMenu	22
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Config	26
Dashboard	27
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MenuBar	42
MinTerminalSize	44
Moisture	45
NotFoundArgument	46
NotFoundUserException	47
Sensor	48
Thermometer	50
User	52
UserConfig	55

Chapter 3

File Index

3.1 File List

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

include/ Admin.h	
Header file of Admin.cpp	57
include/ AirQuality.h	
Header file of AirQuality.cpp	58
include/ CameraBW.h	
Header file of CameraBW.cpp	60
include/ CameraRGB.h	
Header file of CameraRGB.cpp	61
include/ CLDashboard.h	
Header file of CLDashboard.cpp	62
include/ CLInterface.h	
Header file of CLInterface.cpp	63
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Header file of CLIUtils.cpp	65
include/ CLLoginInterface.h	
Header file of CLLoginInterface.cpp	67
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Header file of Interface.cpp	78
include/ LoginInterface.h	
Header file of LoginInterface.cpp	79
include/ main.h	
Header file of main.cpp	80
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Header file of Menu.cpp	82

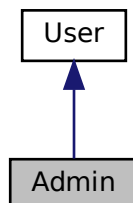
include/MenuBar.h	
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include/MinTerminalSize.h	85
include/Moisture.h	
Header file of Moisture.cpp	86
include/NotFoundArgument.h	87
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Header file of Sensor.cpp	89
include/Thermometer.h	
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src/CameraRGB.cpp	96
src/CLDashboard.cpp	97
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src/CLIUtils.cpp	99
src/CLLoginInterface.cpp	101
src/CLMenu.cpp	102
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src/Dashboard.cpp	105
src/Database.cpp	106
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src/MenuBar.cpp	114
src/Moisture.cpp	114
src/Sensor.cpp	115
src/Thermometer.cpp	116
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src/UserConfig.cpp	118

Chapter 4

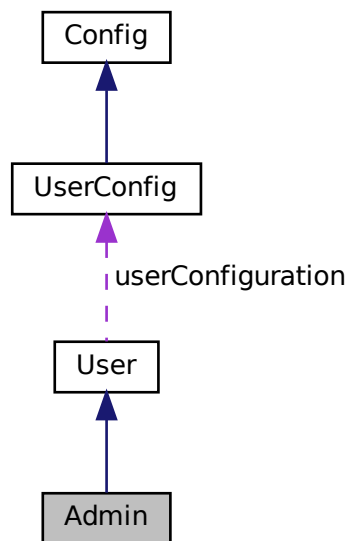
Class Documentation

4.1 Admin Class Reference

Inheritance diagram for Admin:



Collaboration diagram for Admin:



Public Member Functions

- [Admin](#) (std::string number="00000", std::string nif="00000000", std::string name="default")
Creates a new [Admin](#) object.

Additional Inherited Members

4.1.1 Constructor & Destructor Documentation

4.1.1.1 Admin()

```

Admin::Admin (
    std::string number = "00000",
    std::string nif = "00000000",
    std::string name = "default" )
  
```

Creates a new [Admin](#) object.

Parameters

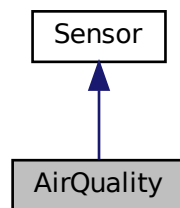
<i>employeeNumber</i>	
<i>NIF</i>	
<i>name</i>	

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

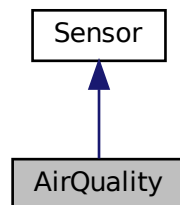
- include/[Admin.h](#)
- src/[Admin.cpp](#)

4.2 AirQuality Class Reference

Inheritance diagram for AirQuality:



Collaboration diagram for AirQuality:



Public Member Functions

- [AirQuality](#) (bool active=false, int valPerMin=1)
Create a new Air Quality object.

Additional Inherited Members

4.2.1 Constructor & Destructor Documentation

4.2.1.1 AirQuality()

```
AirQuality::AirQuality (
    bool active = false,
    int valPerMin = 1 )
```

Create a new Air Quality object.

Parameters

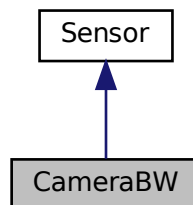
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

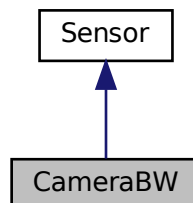
- include/[AirQuality.h](#)
- src/[AirQuality.cpp](#)

4.3 CameraBW Class Reference

Inheritance diagram for CameraBW:



Collaboration diagram for CameraBW:



Public Member Functions

- [CameraBW](#) (bool active=false, int valPerMin=1)
Create a new BW camera object.

Additional Inherited Members

4.3.1 Constructor & Destructor Documentation

4.3.1.1 CameraBW()

```
CameraBW::CameraBW (
    bool active = false,
    int valPerMin = 1 )
```

Create a new BW camera object.

Parameters

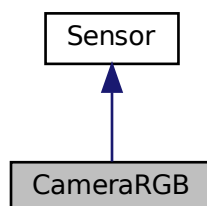
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

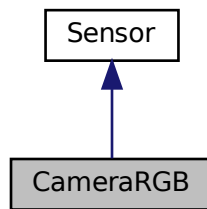
- include/[CameraBW.h](#)
- src/[CameraBW.cpp](#)

4.4 CameraRGB Class Reference

Inheritance diagram for CameraRGB:



Collaboration diagram for CameraRGB:



Public Member Functions

- [CameraRGB](#) (bool active=false, int valPerMin=1)
Create a new RGB camera object.

Additional Inherited Members

4.4.1 Constructor & Destructor Documentation

4.4.1.1 CameraRGB()

```
CameraRGB::CameraRGB (
    bool active = false,
    int valPerMin = 1 )
```

Create a new RGB camera object.

Parameters

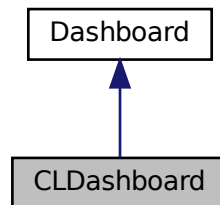
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

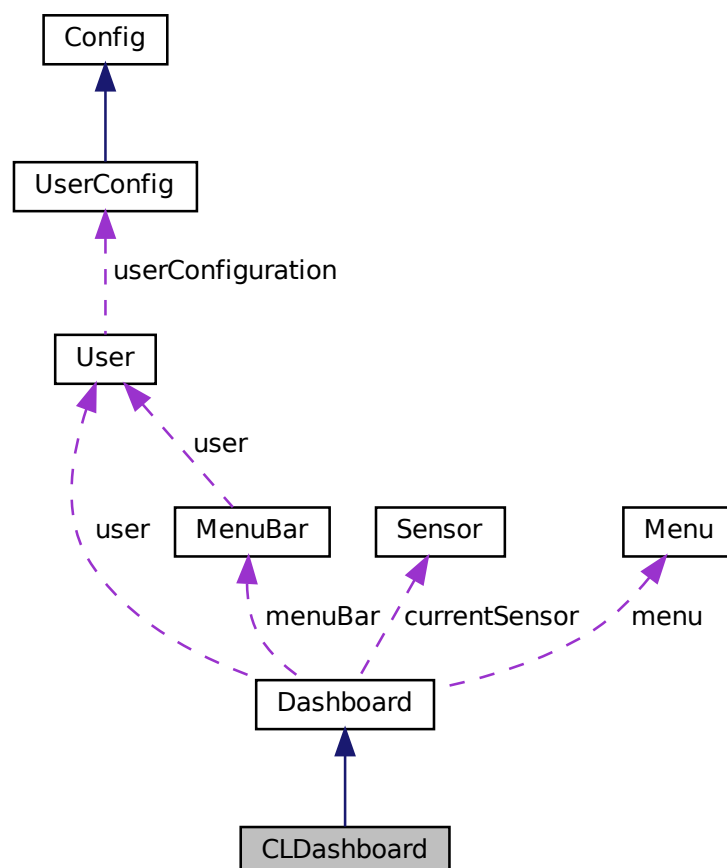
- include/[CameraRGB.h](#)
- src/[CameraRGB.cpp](#)

4.5 CLDashboard Class Reference

Inheritance diagram for CLDashboard:



Collaboration diagram for CLDashboard:



Public Member Functions

- [CLDashboard](#) ([User](#) &user)
Create a new [Dashboard](#) for the command line.
- void [showMainMenu](#) ()
Shows the default menu and starts the custom terminal.

Protected Member Functions

- void [changeMainMenu](#) (int n)
Change the page of the menu.
- void [readCommand](#) ()
Reads and executes a command from the terminal.
- void [listSensor](#) ()
Command that lists the sensors in the current menu page.
- void [helpCommand](#) (std::string command, int &lineNumber)
Displays the use of the command.
- void [errorCommand](#) (std::string command, int &lineNumber)
Shows error message because the command not being found.
- void [permissionError](#) (int &lineNumber)
Shows error message because the permission being denied to execute it.

Additional Inherited Members

4.5.1 Constructor & Destructor Documentation

4.5.1.1 CLDashboard()

```
CLDashboard::CLDashboard (  
    User & user )
```

Create a new [Dashboard](#) for the command line.

4.5.2 Member Function Documentation

4.5.2.1 changeMainMenu()

```
void CLDashboard::changeMainMenu (  
    int n ) [protected]
```

Change the page of the menu.

Parameters

<i>n</i>	Number of pages to shift (positive to the right)
----------	--

4.5.2.2 errorCommand()

```
void CLDashboard::errorCommand (
    std::string command,
    int & lineNumber ) [protected]
```

Shows error message because the command not being found.

Parameters

<i>command</i>	Command input
<i>lineNumber</i>	Number of lines displayed

4.5.2.3 helpCommand()

```
void CLDashboard::helpCommand (
    std::string command,
    int & lineNumber ) [protected]
```

Displays the use of the command.

Parameters

<i>command</i>	Command to display info about
<i>lineNumber</i>	Number of lines displayed

4.5.2.4 listSensor()

```
void CLDashboard::listSensor ( ) [protected]
```

Command that lists the sensors in the current menu page.

4.5.2.5 permissionError()

```
void CLDashboard::permissionError (
    int & lineNumber ) [protected]
```

Shows error message because the permission being denied to execute it.

Parameters

<i>lineNumber</i>	Number of lines displayed
-------------------	---------------------------

4.5.2.6 readCommand()

```
void CLDashboard::readCommand ( ) [protected]
```

Reads and executes a command from the terminal.

4.5.2.7 showMainMenu()

```
void CLDashboard::showMainMenu ( ) [virtual]
```

Shows the default menu and starts the custom terminal.

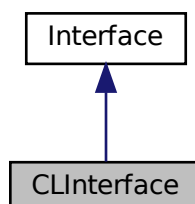
Implements [Dashboard](#).

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

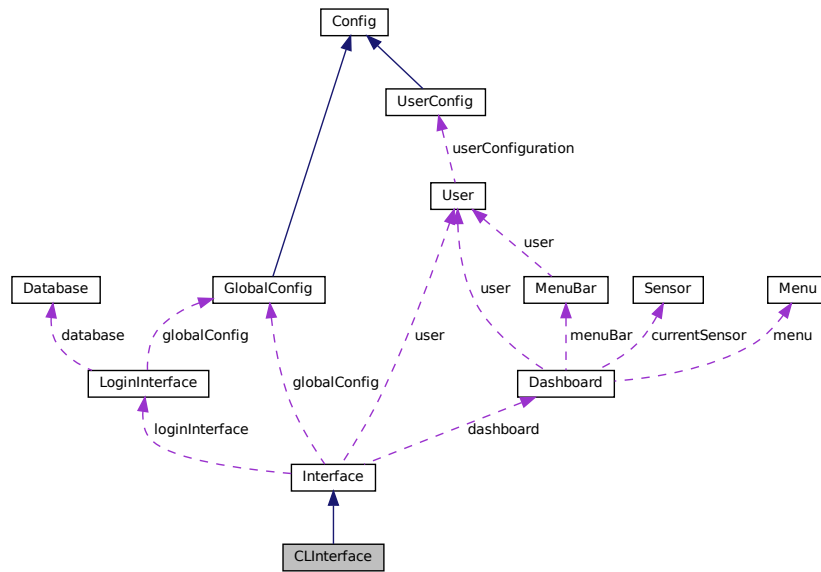
- [include/CLDashboard.h](#)
- [src/CLDashboard.cpp](#)

4.6 CLInterface Class Reference

Inheritance diagram for CLInterface:



Collaboration diagram for CLInterface:



Public Member Functions

- [CLInterface](#) ()
Create a new [Interface](#) for the command line.
- void [login](#) (int tries)
Controls the login interface for the command line.

Additional Inherited Members

4.6.1 Constructor & Destructor Documentation

4.6.1.1 CLInterface()

```
CLInterface::CLInterface ( )
```

Create a new [Interface](#) for the command line.

Note

Also gets the terminal size

4.6.2 Member Function Documentation

4.6.2.1 login()

```
void CLInterface::login (  
    int tries ) [virtual]
```

Controls the login interface for the command line.

Parameters

<i>tries</i>	Number of tries to login
--------------	--------------------------

Note

If exceeded the number of tries, then the program will exit

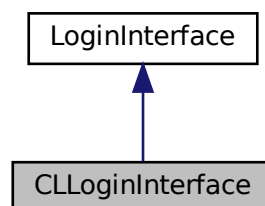
Implements [Interface](#).

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

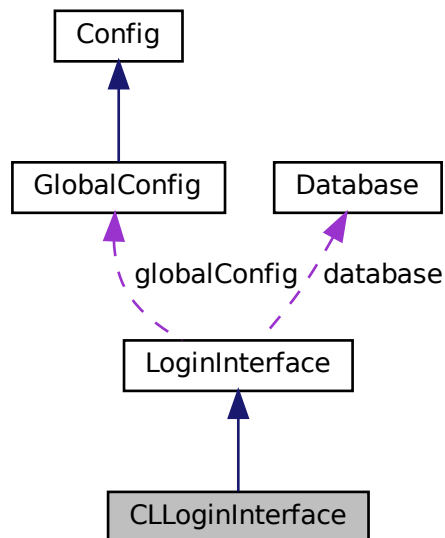
- include/[CLInterface.h](#)
- src/[CLInterface.cpp](#)

4.7 CLoginInterface Class Reference

Inheritance diagram for CLoginInterface:



Collaboration diagram for CLoginInterface:



Public Member Functions

- void [showWelcomeMessage](#) ()
Show the login screen messages in the command line.
- void [askEmployeeNumber](#) ()
Ask the user to input the employee number from the command line.
- void [askEmployeeNumber](#) (const std::string &userNumber)
Default setter of employee number.
- void [askNIF](#) ()
Ask the user to input the employee nif from the command line.
- void [askNIF](#) (const std::string &nif)
Default setter of employee nif.

Additional Inherited Members

4.7.1 Member Function Documentation

4.7.1.1 askEmployeeNumber() [1/2]

```
void CLoginInterface::askEmployeeNumber ( ) [virtual]
```

Ask the user to input the employee number from the command line.

Implements [LoginInterface](#).

4.7.1.2 askEmployeeNumber() [2/2]

```
void CLLoginInterface::askEmployeeNumber (
    const std::string & userNumber ) [virtual]
```

Default setter of employee number.

Note

This method is used when the user executes the main with the NIF and employee number

Parameters

<i>userNumber</i>	
-------------------	--

Implements [LoginInterface](#).

4.7.1.3 askNIF() [1/2]

```
void CLLoginInterface::askNIF ( ) [virtual]
```

Ask the user to input the employee nif from the command line.

Implements [LoginInterface](#).

4.7.1.4 askNIF() [2/2]

```
void CLLoginInterface::askNIF (
    const std::string & nif ) [virtual]
```

Default setter of employee nif.

Note

This method is used when the user executes the main with the NIF and employee number

Parameters

<i>nif</i>	
------------	--

Implements [LoginInterface](#).

4.7.1.5 showWelcomeMessage()

```
void CLLoginInterface::showWelcomeMessage ( ) [virtual]
```

Show the login screen messages in the command line.

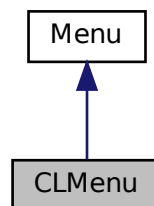
Implements [LoginInterface](#).

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

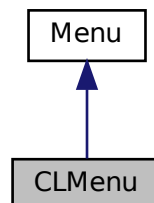
- [include/CLLoginInterface.h](#)
- [src/CLLoginInterface.cpp](#)

4.8 CLMenu Class Reference

Inheritance diagram for CLMenu:



Collaboration diagram for CLMenu:



Public Member Functions

- void [show](#) (std::vector< [Sensor](#) * > sensors, [UserConfig](#) &config)
Shows the menu with six or less smaller sensors displayed in the command line.
- void [show](#) ([Sensor](#) *sensorToDisplay, [UserConfig](#) &config)
Shows the menu for the sensor selected in a detailed format in the command line.
- void [show](#) ([User](#) &user)
Shows the config menu.

Protected Member Functions

- void [clearMenu](#) ()
Clear the menu in the command line.

Additional Inherited Members

4.8.1 Member Function Documentation

4.8.1.1 [clearMenu\(\)](#)

```
void CLMenu::clearMenu ( ) [protected]
```

Clear the menu in the command line.

4.8.1.2 [show\(\)](#) [1/3]

```
void CLMenu::show (
    Sensor * sensorToDisplay,
    UserConfig & config ) [virtual]
```

Shows the menu for the sensor selected in a detailed format in the command line.

Parameters

<i>sensorToDisplay</i>	Sensor to display
<i>config</i>	User configuration

Implements [Menu](#).

4.8.1.3 show() [2/3]

```
void CLMenu::show (
    std::vector< Sensor * > sensors,
    UserConfig & config ) [virtual]
```

Shows the menu with six or less smaller sensors displayed in the command line.

Parameters

<i>sensors</i>	Array of sensor to display ≤ 7
<i>config</i>	User configuration

Implements [Menu](#).

4.8.1.4 show() [3/3]

```
void CLMenu::show (
    User & user ) [virtual]
```

Shows the config menu.

Parameters

<i>user</i>	
-------------	--

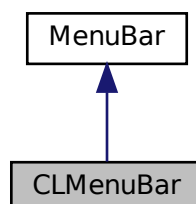
Implements [Menu](#).

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

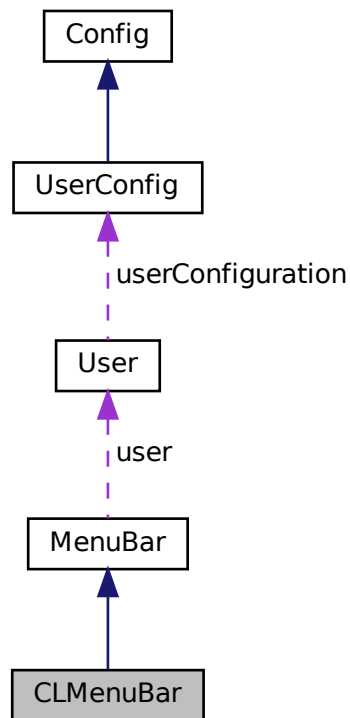
- include/[CLMenu.h](#)
- src/[CLMenu.cpp](#)

4.9 CLMenuBar Class Reference

Inheritance diagram for CLMenuBar:



Collaboration diagram for CLMenuBar:



Public Member Functions

- void [show](#) ()
Show the menu bar in the command line.

Additional Inherited Members

4.9.1 Member Function Documentation

4.9.1.1 show()

```
void CLMenuBar::show ( ) [virtual]
```

Show the menu bar in the command line.

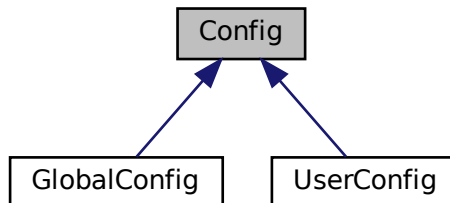
Implements [MenuBar](#).

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

- include/[CLMenuBar.h](#)
- src/[CLMenuBar.cpp](#)

4.10 Config Class Reference

Inheritance diagram for Config:



Public Member Functions

- **Config** (std::string language, std::array< int, 3 > backgroundColor, std::array< int, 3 > fontColor)
- std::string **getLanguage** () const
- void **setLanguage** (std::string newLanguage)
- std::array< int, 3 > * **getBackgroundColor** ()
- void **setBackgroundColor** (std::array< int, 3 > newBackgroundColor)
- std::array< int, 3 > * **getFontColor** ()
- void **setFontColor** (std::array< int, 3 > newFontColor)

Protected Attributes

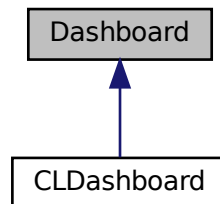
- char **language** [5]
- std::array< int, 3 > **backgroundColor**
- std::array< int, 3 > **fontColor**

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

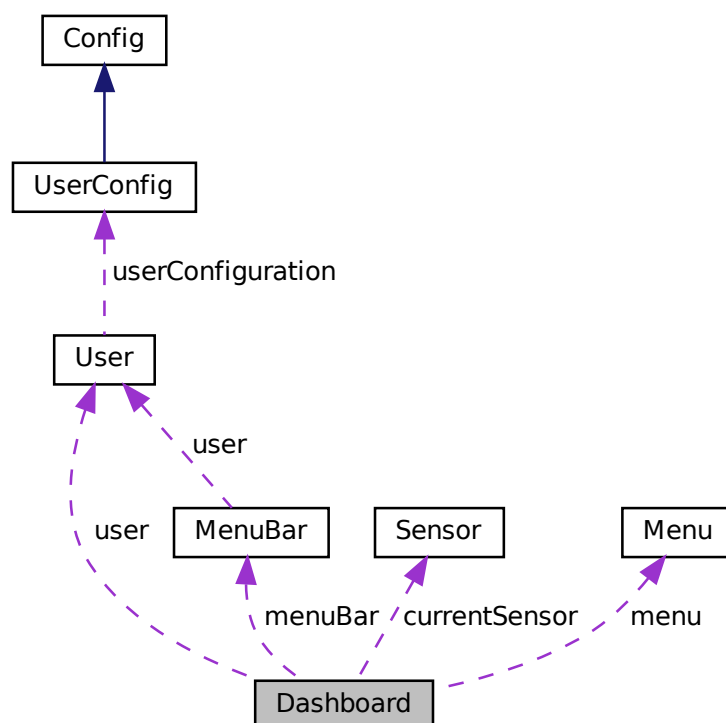
- include/[Config.h](#)
- src/[Config.cpp](#)

4.11 Dashboard Class Reference

Inheritance diagram for Dashboard:



Collaboration diagram for Dashboard:



Public Member Functions

- void **setUser** ([User](#) &user)

- virtual void **showMainMenu** ()=0
- bool **changeInterface** (std::string newInterface="")
Changes the current interface to the input one.
- void **setNumberOfSensorsPerMenu** (int numOfSensorsPerMenu)
- void **addToMainMenu** ()
Adds all the current sensors to the dashboard.
- void **addToMainMenu** (Sensor *sensor)
Adds a sensor to the dashboard.
- void **moveWindowMainMenu** (int n=1)
Shifts the main menu n pages.
- void **changeCurrentSensorInfo** (std::string toChange, std::string newValue)
Changes the current sensor values.
- void **addNewSensor** (std::string type)
Creates the new sensor and calls addToMainMenu.
- void **deleteSensor** (std::string id)
Deletes the desired sensor from the dashboard.
- std::vector< User > **getNewUsers** ()
Get the New Users vector.
- std::vector< User > **getDeleteUsers** ()
Get the vector of users to delete.
- void **exit** ()
Exits the dashboard and finishes the program.
- void **logout** ()
Exits the dashboard and goes back to the login screen.
- bool **canExit** ()
Called from main, checks if the program is allowed to exit.

Static Public Member Functions

- static Dashboard * **Create** (User &user, const std::string type="CLI")
Create a new instance of the desired Dashboard interface.

Protected Member Functions

- **Dashboard** (User &user)

Protected Attributes

- std::vector< Sensor * > **sensor**
Vector of all the vectors in the dashboard.
- std::vector< std::vector< Sensor * > > **mainMenu**
Vector that contains the pages of the main Menu.
- int **mainMenuIndex**
Current page of the main Menu.
- MenuBar * **menuBar**
- Menu * **menu**
- User * **user**
- std::string **currentInterface**
Current interface, can be a sensor ID or the main menu (..)

- `std::string` [lastInterface](#)
Last interface, can be a sensor ID or the main menu (..)
- `Sensor *` [currentSensor](#)
If the currentInterface is a sensor then the value would be that sensor, if not the value is nullptr.
- `int` [numberOfSensorsPerMenu](#)
Number of sensors shown by menu. Max value 6.
- `bool` **allowedToExit**
- `std::vector< User >` **newUsers**
- `std::vector< User >` **deleteUsers**

4.11.1 Member Function Documentation

4.11.1.1 `addNewSensor()`

```
void Dashboard::addNewSensor (
    std::string type )
```

Creates the new sensor and calls `addToMainMenu`.

Parameters

<i>type</i>	New sensor type
-------------	-----------------

See also

[addToMainMenu](#)

4.11.1.2 `addToMainMenu()` [1/2]

```
void Dashboard::addToMainMenu ( )
```

Adds all the current sensors to the dashboard.

Note

Only called at the start of the program

4.11.1.3 `addToMainMenu()` [2/2]

```
void Dashboard::addToMainMenu (
    Sensor \* sensor )
```

Adds a sensor to the dashboard.

Parameters

<i>sensor</i>	Sensor to add
---------------	-------------------------------

4.11.1.4 canExit()

```
bool Dashboard::canExit ( )
```

Called from main, checks if the program is allowed to exit.

Returns

true End the program
false Cannot exit, goes to login screen

4.11.1.5 changeCurrentSensorInfo()

```
void Dashboard::changeCurrentSensorInfo (
    std::string toChange,
    std::string newValue )
```

Changes the current sensor values.

Parameters

<i>toChange</i>	Desired value to change
<i>newValue</i>	New value to add

4.11.1.6 changeInterface()

```
bool Dashboard::changeInterface (
    std::string newInterface = "" )
```

Changes the current interface to the input one.

Parameters

<i>newInterface</i>	Desired interface to change (.. = main Menu)
---------------------	--

Returns

true = can change interface
false = cannot change interface

4.11.1.7 Create()

```
Dashboard * Dashboard::Create (
    User & user,
    const std::string type = "CLI" ) [static]
```

Create a new instance of the desired [Dashboard](#) interface.

Parameters

<i>type</i>	Type of Dashboard interface
-------------	---

Returns

Dashboard*

4.11.1.8 deleteSensor()

```
void Dashboard::deleteSensor (
    std::string id )
```

Deletes the desired sensor from the dashboard.

Parameters

<i>id</i>	ID of the sensor to delete
-----------	----------------------------

See also

[addToMainMenu](#)

4.11.1.9 exit()

```
void Dashboard::exit ( )
```

Exits the dashboard and finishes the program.

See also

cleanSensor

4.11.1.10 getDeleteUsers()

```
std::vector<User> Dashboard::getDeleteUsers ( ) [inline]
```

Get the vector of users to delete.

Returns

std::vector<User>

4.11.1.11 getNewUsers()

```
std::vector<User> Dashboard::getNewUsers ( ) [inline]
```

Get the New Users vector.

Returns

std::vector<User>

4.11.1.12 logout()

```
void Dashboard::logout ( )
```

Exits the dashboard and goes back to the login screen.

See also

cleanSensor

4.11.1.13 moveWindowMainMenu()

```
void Dashboard::moveWindowMainMenu (
    int n = 1 )
```

Shifts the main menu n pages.

Parameters

<i>n</i>	Number of pages to shift (positive to the right)
----------	--

4.11.2 Member Data Documentation

4.11.2.1 numberOfSensorsPerMenu

```
int Dashboard::numberOfSensorsPerMenu [protected]
```

Number of sensors shown by menu. Max value 6.

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

- include/[Dashboard.h](#)
- src/[Dashboard.cpp](#)

4.12 Database Class Reference

Public Member Functions

- void [getUser](#) (std::string employeeNumber, std::string NIF, [User](#) ¤tUser)
Get the [User](#) object in the database, if not throws an exception.
- void **resetUser** ([User](#) ¤tUser)
- void **addUsers** (std::vector< [User](#) > newUsers)
- void **deleteUsers** (std::vector< [User](#) > deleteUsers)

4.12.1 Member Function Documentation

4.12.1.1 getUser()

```
void Database::getUser (
    std::string employeeNumber,
    std::string NIF,
    User & currentUser )
```

Get the [User](#) object in the database, if not throws an exception.

Parameters

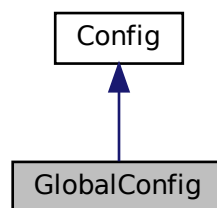
<i>employeeNumber</i>	
<i>NIF</i>	
<i>currentUser</i>	

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

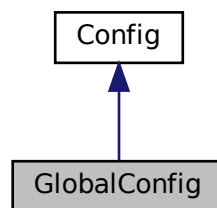
- [include/Database.h](#)
- [src/Database.cpp](#)

4.13 GlobalConfig Class Reference

Inheritance diagram for GlobalConfig:



Collaboration diagram for GlobalConfig:



Public Member Functions

- **GlobalConfig** (std::string language="ENG", int triesToLogin=5, std::array< int, 3 > backgroundColor={0, 0, 0}, std::array< int, 3 > fontColor={255, 255, 255}, std::array< int, 3 > logoColor={0, 255, 0})
- int **getTriesToLogin** () const
- void **setTriesToLogin** (int newTriesToLogin)
- std::array< int, 3 > * **getLogoColor** ()
- void **setLogoColor** (std::array< int, 3 > newLogoColor)

Protected Attributes

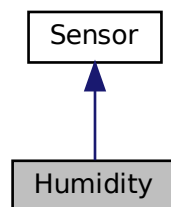
- int **triesToLogin**
- std::array< int, 3 > **logoColor**

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

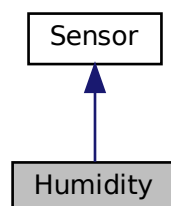
- include/[GlobalConfig.h](#)
- src/[GlobalConfig.cpp](#)

4.14 Humidity Class Reference

Inheritance diagram for Humidity:



Collaboration diagram for Humidity:



Public Member Functions

- [Humidity](#) (bool active=false, int valPerMin=1)
Create a new [Humidity](#) object.

Additional Inherited Members

4.14.1 Constructor & Destructor Documentation

4.14.1.1 Humidity()

```
Humidity::Humidity (
    bool active = false,
    int valPerMin = 1 )
```

Create a new [Humidity](#) object.

Parameters

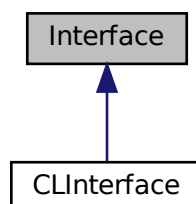
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

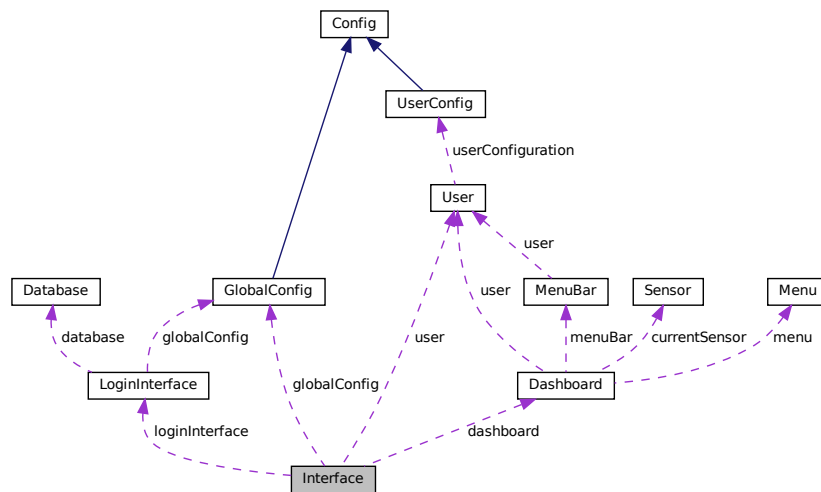
- include/[Humidity.h](#)
- src/[Humidity.cpp](#)

4.15 Interface Class Reference

Inheritance diagram for Interface:



Collaboration diagram for Interface:



Public Member Functions

- void **setGlobalConfig** ([GlobalConfig](#) *config)
- virtual void **login** (int tries)=0
Virtual interface for the login method.
- void **login** (std::string userNumber, std::string nif)
Default login method without any interface.
- bool **loadMenu** ()
Creates and loads the dashboard.

Static Public Member Functions

- static [Interface](#) * **Create** (const std::string type="CLI")
Create a new [Interface](#) instance of the type specified.

Protected Attributes

- [LoginInterface](#) * **loginInterface**
- [Dashboard](#) * **dashboard**
- [User](#) * **user**
- [GlobalConfig](#) * **globalConfig**

4.15.1 Member Function Documentation

4.15.1.1 Create()

```
Interface * Interface::Create (
    const std::string type = "CLI" ) [static]
```

Create a new [Interface](#) instance of the type specified.

Parameters

<i>type</i>	Type of interface
-------------	-------------------

Returns

Interface* New [Interface](#) instance

4.15.1.2 loadMenu()

```
bool Interface::loadMenu ( )
```

Creates and loads the dashboard.

Returns

true = exit

false = login again

4.15.1.3 login() [1/2]

```
virtual void Interface::login (
    int tries ) [pure virtual]
```

Virtual interface for the login method.

Parameters

<i>tries</i>	
--------------	--

Implemented in [CLInterface](#).

4.15.1.4 login() [2/2]

```
void Interface::login (
    std::string userNumber,
    std::string nif )
```

Default login method withouth any interface.

Parameters

<i>userNumber</i>	
<i>nif</i>	

Note

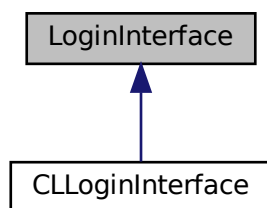
This method is used when the user executes the main with the NIF and employee number

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

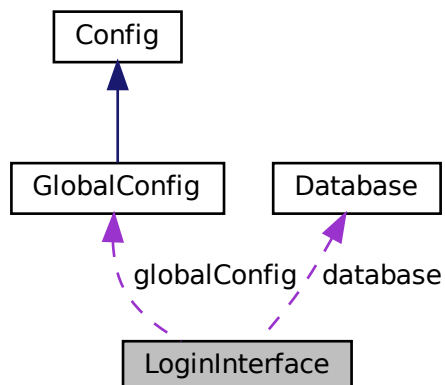
- [include/Interface.h](#)
- [src/Interface.cpp](#)

4.16 LoginInterface Class Reference

Inheritance diagram for LoginInterface:



Collaboration diagram for LoginInterface:



Public Member Functions

- void **setGlobalConfig** ([GlobalConfig](#) *config)
- virtual void **showWelcomeMessage** ()=0
- virtual void **askEmployeeNumber** ()=0
- virtual void **askEmployeeNumber** (const std::string &userNumber)=0
- virtual void **askNIF** ()=0
- virtual void **askNIF** (const std::string &userNumber)=0
- void **checkUser** ([User](#) ¤tUser)
Sets the user pass to the corresponding employee number and NIF in the database.
- **LoginInterface** ([LoginInterface](#) &otherLoginInterface)=delete
- void **operator=** (const [LoginInterface](#) &)=delete

Static Public Member Functions

- static [LoginInterface](#) * **Create** (const std::string="CLI")
Create a new Login interface instance of the type specified.

Public Attributes

- [Database](#) * **database**

Protected Attributes

- std::string **inputNIF**
- std::string **inputEmployeeNumber**
- [GlobalConfig](#) * **globalConfig**

4.16.1 Member Function Documentation

4.16.1.1 checkUser()

```
void LoginInterface::checkUser (
    User & currentUser )
```

Sets the user pass to the corresponding employee number and NIF in the database.

Parameters

<i>currentUser</i>	
--------------------	--

4.16.1.2 Create()

```
LoginInterface * LoginInterface::Create (
    const std::string type = "CLI" ) [static]
```

Create a new Login interface instance of the type specified.

Parameters

<i>type</i>	Type of login interface
-------------	-------------------------

Returns

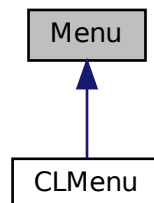
LoginInterface* New login interface instance

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

- include/LoginInterface.h
- src/LoginInterface.cpp

4.17 Menu Class Reference

Inheritance diagram for Menu:



Public Member Functions

- virtual void **show** (std::vector< [Sensor](#) * > sensors, [UserConfig](#) &config)=0
- virtual void **show** ([Sensor](#) *sensorToDisplay, [UserConfig](#) &config)=0
- virtual void **show** ([User](#) &user)=0

Static Public Member Functions

- static [Menu](#) * [Create](#) (const std::string type="CLI")
Create a new [Menu](#) instance of the type specified.

4.17.1 Member Function Documentation

4.17.1.1 Create()

```
Menu * Menu::Create (
    const std::string type = "CLI" ) [static]
```

Create a new [Menu](#) instance of the type specified.

Parameters

<i>type</i>	Type of menu
-------------	--------------

Returns

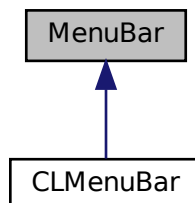
Menu* New menu instance

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

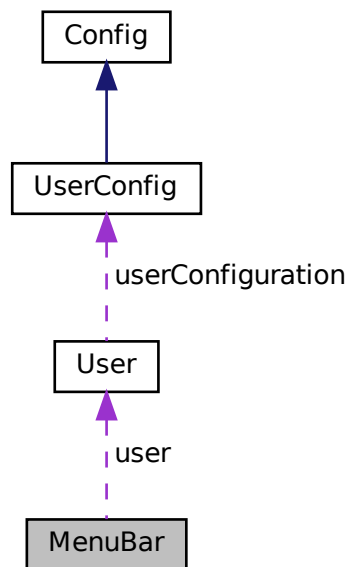
- [include/Menu.h](#)
- [src/Menu.cpp](#)

4.18 MenuBar Class Reference

Inheritance diagram for MenuBar:



Collaboration diagram for MenuBar:



Public Member Functions

- virtual void **show** ()=0
- void **setUser** (User &user)
- void **setCurrentMenu** (std::string currentMenu)
Sets the current menu.

Static Public Member Functions

- static MenuBar * **Create** (const std::string type="CLI")
Create a new Menu bar instance of the type specified.

Protected Attributes

- User user
- std::string currentMenu

4.18.1 Member Function Documentation

4.18.1.1 Create()

```
MenuBar * MenuBar::Create (
    const std::string type = "CLI" ) [static]
```

Create a new Menu bar instance of the type specified.

Parameters

<i>type</i>	Type of menu bar
-------------	------------------

Returns

MenuBar* New menu bar instance

4.18.1.2 setCurrentMenu()

```
void MenuBar::setCurrentMenu (
    std::string currentMenu )
```

Sets the current menu.

Parameters

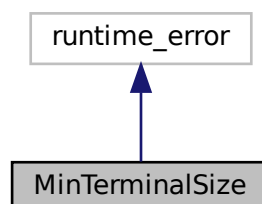
<i>currentMenu</i>	
--------------------	--

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

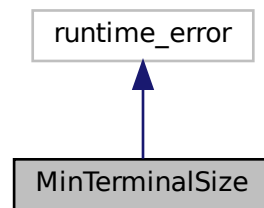
- include/[MenuBar.h](#)
- src/[MenuBar.cpp](#)

4.19 MinTerminalSize Class Reference

Inheritance diagram for MinTerminalSize:



Collaboration diagram for MinTerminalSize:

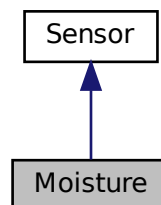


The documentation for this class was generated from the following file:

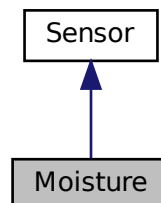
- include/[MinTerminalSize.h](#)

4.20 Moisture Class Reference

Inheritance diagram for Moisture:



Collaboration diagram for Moisture:



Public Member Functions

- [Moisture](#) (bool active=false, int valPerMin=1)
Create a new [Moisture](#) object.

Additional Inherited Members

4.20.1 Constructor & Destructor Documentation

4.20.1.1 Moisture()

```
Moisture::Moisture (
    bool active = false,
    int valPerMin = 1 )
```

Create a new [Moisture](#) object.

Parameters

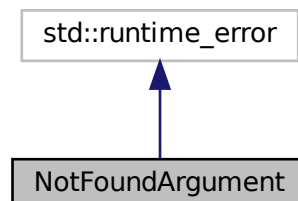
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

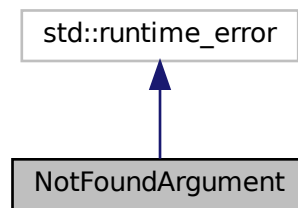
- include/[Moisture.h](#)
- src/[Moisture.cpp](#)

4.21 NotFoundArgument Class Reference

Inheritance diagram for NotFoundArgument:



Collaboration diagram for NotFoundArgument:

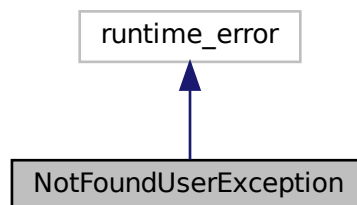


The documentation for this class was generated from the following file:

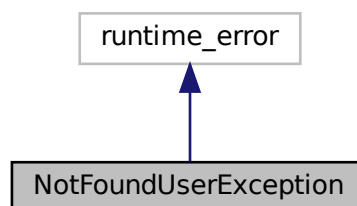
- include/[NotFoundArgument.h](#)

4.22 NotFoundUserException Class Reference

Inheritance diagram for NotFoundUserException:



Collaboration diagram for NotFoundUserException:

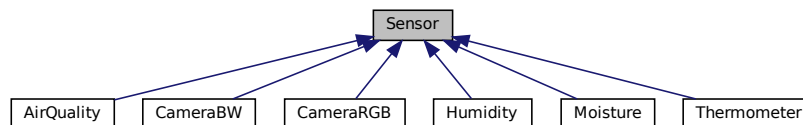


The documentation for this class was generated from the following file:

- [include/NotFoundUserException.h](#)

4.23 Sensor Class Reference

Inheritance diagram for Sensor:



Public Member Functions

- [Sensor](#) (std::string id="", std::string type="none", std::string magnitude="-", bool active=true, int valPerMin=1)
Construct a new [Sensor](#): [Sensor](#) object.
- void **setId** (std::string newId)
- std::string **getId** ()
- void **setType** (std::string newType)
- std::string **getType** ()
- void **setArea** (std::string)
- std::string **getArea** ()
- void **setMagnitude** (std::string magnitude)
- std::string **getMagnitude** ()
- void **setActive** (bool)
- bool **isActive** ()
- void **setValPerMin** (int valPerMin)
- int **getValPerMin** ()
- std::vector< int > [requestData](#) ()
Request data from sensor.

Static Public Member Functions

- static [Sensor](#) * [Create](#) (const std::string type)
Creates an instance of the sensor type.

Static Public Attributes

- static std::array< std::string, 6 > **availableTypesId** = {"therm","hum","airqual","bwcam","rgbcam","moist"}
- static std::array< std::string, 6 > **availableTypes** = {"thermometer","humidity","airquality","bwcamera","rgbcamera","moisture"}

Protected Member Functions

- void **addNewData** (int)
- void **removeOldData** (int)

Protected Attributes

- char **id** [11]
- char **type** [21]
- char **area** [21]
- char **magnitude** [11]
- bool **active**
- int **valPerMin**

4.23.1 Constructor & Destructor Documentation

4.23.1.1 Sensor()

```
Sensor::Sensor (
    std::string id = "",
    std::string type = "none",
    std::string magnitude = "-",
    bool active = true,
    int valPerMin = 1 )
```

Construct a new [Sensor::Sensor](#) object.

Parameters

<i>id</i>	Identification of type and number
<i>type</i>	Type of sensor
<i>magnitude</i>	Data values magnitude
<i>active</i>	Sensor is On/Off
<i>valPerMin</i>	Number of values per min

4.23.2 Member Function Documentation

4.23.2.1 Create()

```
Sensor * Sensor::Create (
    const std::string type ) [static]
```

Creates an instance of the sensor type.

Parameters

<i>type</i>	
-------------	--

Returns

Sensor*

4.23.2.2 requestData()

```
std::vector< int > Sensor::requestData ( )
```

Request data from sensor.

Returns

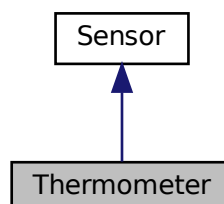
std::vector<int>

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

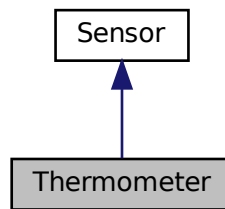
- include/[Sensor.h](#)
- src/[Sensor.cpp](#)

4.24 Thermometer Class Reference

Inheritance diagram for Thermometer:



Collaboration diagram for Thermometer:



Public Member Functions

- [Thermometer](#) (bool active=false, int valPerMin=1)
Create a new [Thermometer](#) object.

Additional Inherited Members

4.24.1 Constructor & Destructor Documentation

4.24.1.1 Thermometer()

```
Thermometer::Thermometer (
    bool active = false,
    int valPerMin = 1 )
```

Create a new [Thermometer](#) object.

Parameters

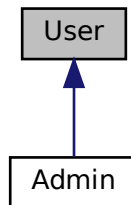
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

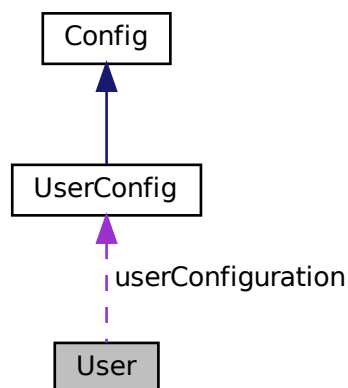
- include/[Thermometer.h](#)
- src/[Thermometer.cpp](#)

4.25 User Class Reference

Inheritance diagram for User:



Collaboration diagram for User:



Public Member Functions

- [User](#) (std::string number="00000", std::string nif="00000000", std::string name="default")
Create a new [User](#).
- [User](#) ([UserConfig](#) [UserConfig](#), std::string number="00000", std::string nif="00000000", std::string name="default")
- std::string **getNIF** () const
- bool **isSameNIF** (std::string NIF)
- std::string **getEmployeeNumber** () const
- bool **isSameEmployeeNumber** (std::string employeeNumber)
- std::string **getName** () const
Returns the user name.

- void **setName** (std::string newName)
- void **addTimestamp** ()
Set the timestamp.
- std::string **getTimestamp** () const
Returns the timestamp.
- bool **hasAdminPermission** ()
Returns the user permissions.
- bool **operator**< (const [User](#) &) const
- bool **operator**== (const [User](#) &) const
- void **setNIF** (std::string)
Set the user NIF.
- void **setEmployeeNumber** (std::string)
Set the user employee number.
- void **setConfig** ([UserConfig](#) newConfig)
- void **setLanguage** (std::string newLanguage)
- void **setFontColor** (std::array< int, 3 > newFontColor)
- void **setBackgroundColor** (std::array< int, 3 > newBackgroundColor)
- void **setGraphicColor** (std::array< int, 3 > newGraphicColor)
- [UserConfig](#) * **getConfiguration** ()

Protected Attributes

- char **name** [21]
- char **NIF** [9]
- char **employeeNumber** [6]
- char **lastLogTime** [25]
- bool **adminPermission**
- [UserConfig](#) **userConfiguration**

Friends

- std::ostream & **operator**<< (std::ostream &, const [User](#) &)

4.25.1 Constructor & Destructor Documentation

4.25.1.1 User()

```
User::User (
    std::string number = "00000",
    std::string nif = "00000000",
    std::string name = "default" )
```

Create a new [User](#).

Parameters

<i>employeeNumber</i>	
<i>NIF</i>	
<i>name</i>	

4.25.2 Member Function Documentation

4.25.2.1 addTimestamp()

```
void User::addTimestamp ( )
```

Set the timestamp.

4.25.2.2 getName()

```
std::string User::getName ( ) const [inline]
```

Returns the user name.

Returns

std::string [User](#) name

4.25.2.3 getTimestamp()

```
std::string User::getTimestamp ( ) const
```

Returns the timestamp.

Returns

std::string Timestamp

4.25.2.4 hasAdminPermission()

```
bool User::hasAdminPermission ( )
```

Returns the user permissions.

Returns

true = has admin permissions

false = does not have admin permissions

4.25.2.5 setEmployeeNumber()

```
void User::setEmployeeNumber (
    std::string newEmployeeNumber )
```

Set the user employee number.

Parameters

<i>employeeNumber</i>	
-----------------------	--

4.25.2.6 setNIF()

```
void User::setNIF (
    std::string newNIF )
```

Set the user NIF.

Parameters

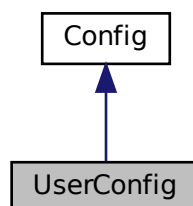
<i>N_↔</i>	
<i>IF</i>	

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

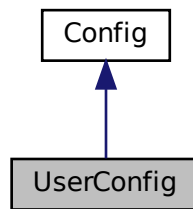
- include/[User.h](#)
- src/[User.cpp](#)

4.26 UserConfig Class Reference

Inheritance diagram for UserConfig:



Collaboration diagram for UserConfig:



Public Member Functions

- **UserConfig** (std::string language="ENG", std::array< int, 3 > backgroundColor={0, 0, 0}, std::array< int, 3 > fontColor={255, 255, 255}, std::array< int, 3 > graphicColor={255, 0, 0})
- std::array< int, 3 > * **getGraphicColor** ()
- void **setGraphicColor** (std::array< int, 3 > newGraphicColor)

Protected Attributes

- std::array< int, 3 > **graphicColor**

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

- include/[UserConfig.h](#)
- src/[UserConfig.cpp](#)

Chapter 5

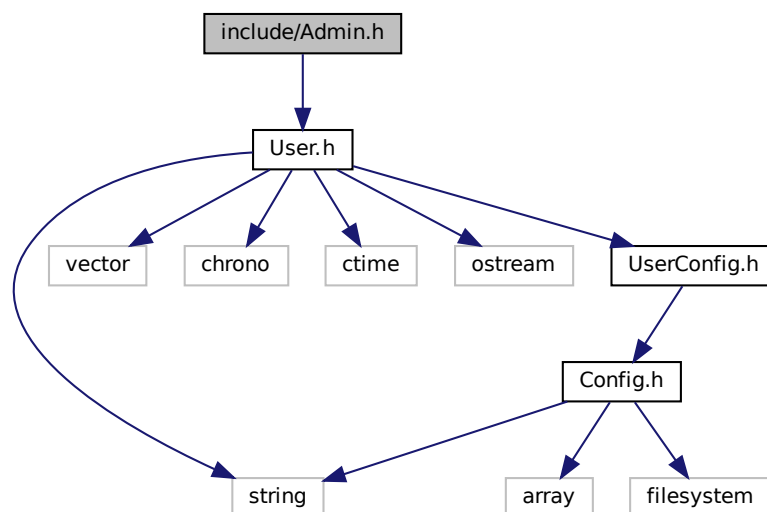
File Documentation

5.1 include/Admin.h File Reference

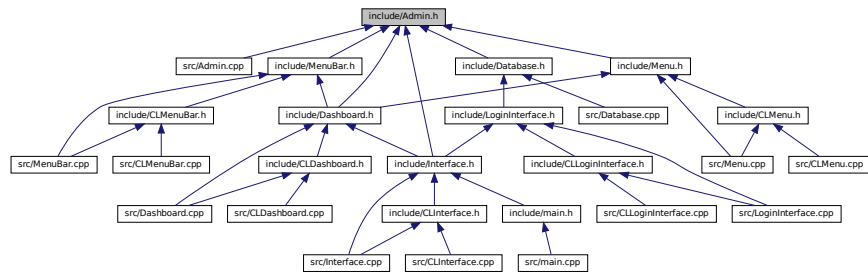
Header file of [Admin.cpp](#).

```
#include "User.h"
```

Include dependency graph for Admin.h:



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



Classes

- class [Admin](#)

5.1.1 Detailed Description

Header file of [Admin.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

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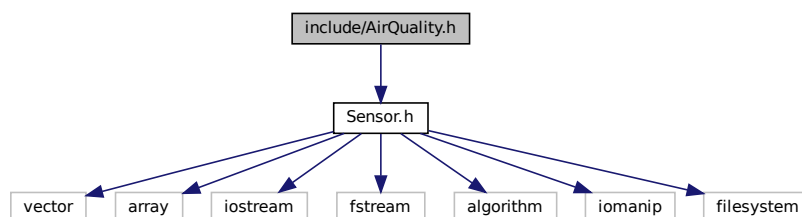
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5.2 include/AirQuality.h File Reference

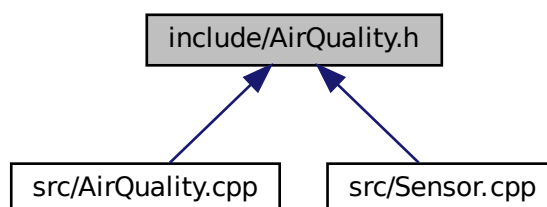
Header file of [AirQuality.cpp](#).

```
#include "Sensor.h"
```

Include dependency graph for AirQuality.h:



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



Classes

- class [AirQuality](#)

5.2.1 Detailed Description

Header file of [AirQuality.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

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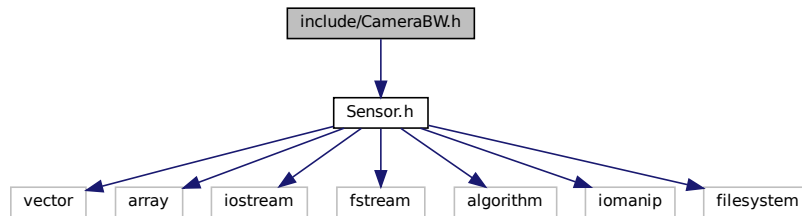
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5.3 include/CameraBW.h File Reference

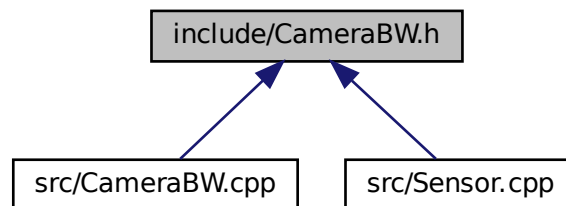
Header file of [CameraBW.cpp](#).

```
#include "Sensor.h"
```

Include dependency graph for CameraBW.h:



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



Classes

- class [CameraBW](#)

5.3.1 Detailed Description

Header file of [CameraBW.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

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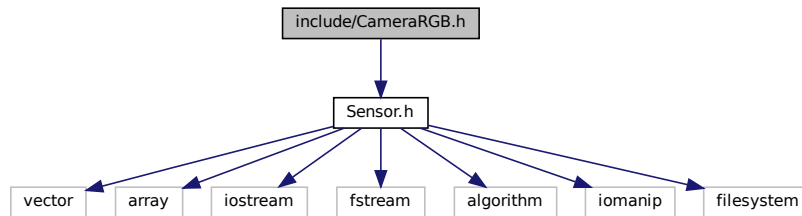
Copyright (c) 2022

5.4 include/CameraRGB.h File Reference

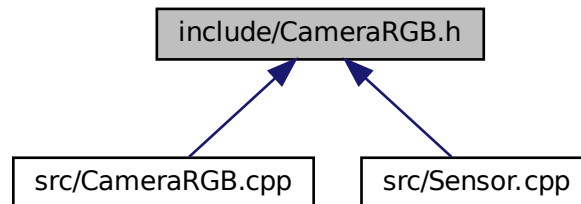
Header file of [CameraRGB.cpp](#).

```
#include "Sensor.h"
```

Include dependency graph for CameraRGB.h:



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



Classes

- class [CameraRGB](#)

5.4.1 Detailed Description

Header file of [CameraRGB.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

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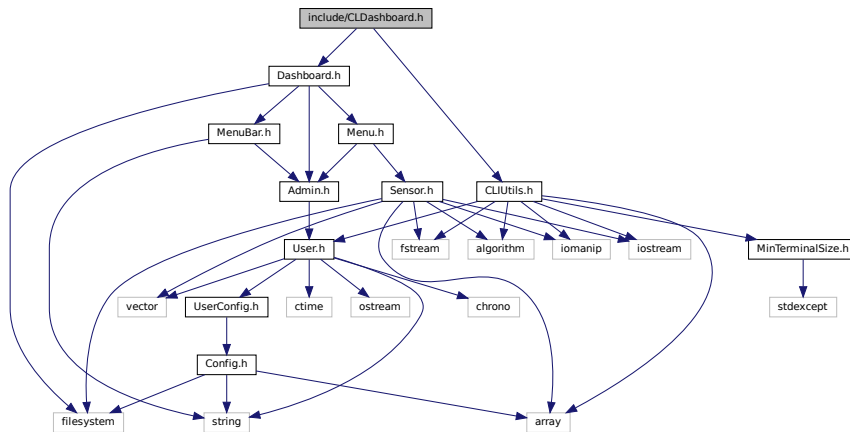
5.5 include/CLDashboard.h File Reference

Header file of [CLDashboard.cpp](#).

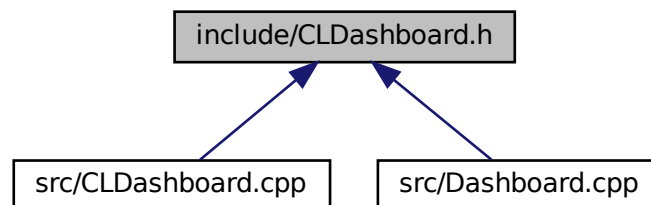
```
#include "Dashboard.h"
```

```
#include "CLIUtils.h"
```

Include dependency graph for CLDashboard.h:



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



Classes

- class [CLDashboard](#)

5.5.1 Detailed Description

Header file of [CLDashboard.cpp](#).

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

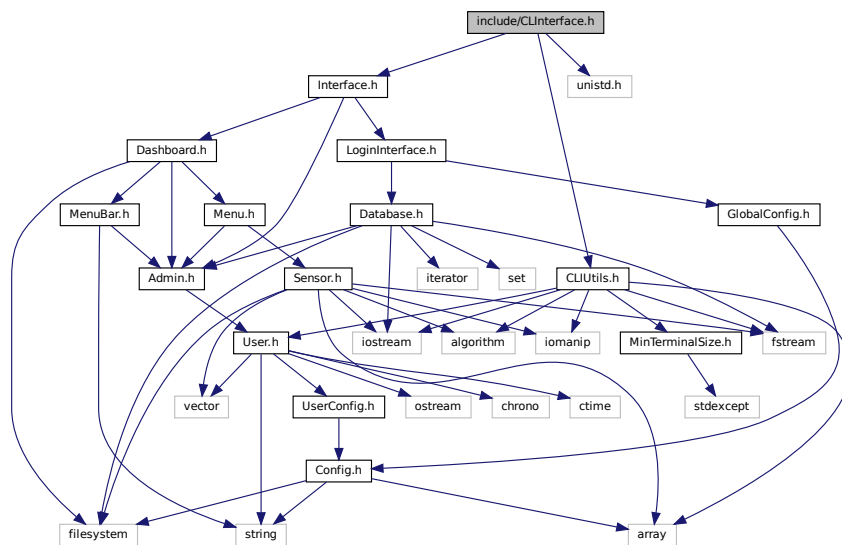
1.0

2022-11-23

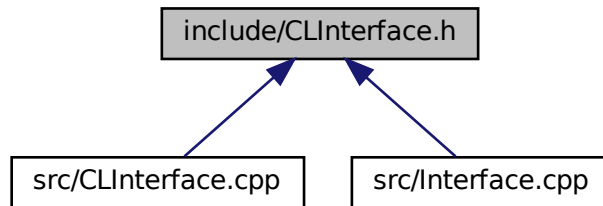
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```
#include "Interface.h"
#include "CLIUtils.h"
#include <unistd.h>
```

Include dependency graph for CLInterface.h:



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



Classes

- class [CLInterface](#)

5.6.1 Detailed Description

Header file of [CLInterface.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

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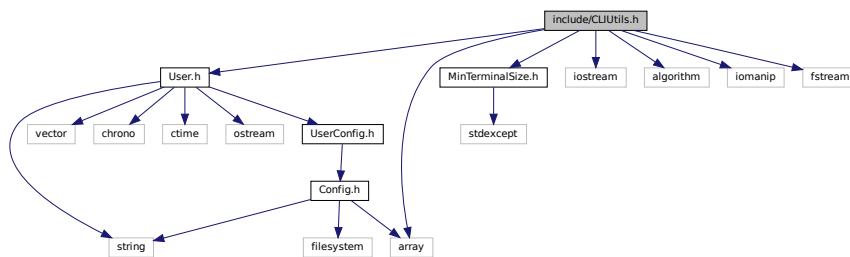
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5.7 include/CLIUtils.h File Reference

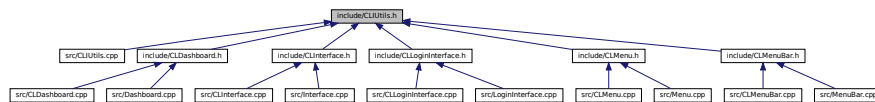
Header file of [CLIUtils.cpp](#).

```
#include "User.h"
#include "MinTerminalSize.h"
#include <iostream>
#include <algorithm>
#include <iomanip>
#include <fstream>
#include <array>
```

Include dependency graph for CLIUtils.h:



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



Functions

- void **setTerminalSize** ()
- int **getTerminalWidth** ()
- int **getTerminalHeight** ()
- void **printCenterFromFile** (const std::string fileName, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding=0)

Print the contents of the file in the center.
- void **printRightFromFile** (const std::string fileName, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding=0)
- void **printLeftFromFile** (const std::string fileName, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding=0)
- void **printLogo** (const std::string fileName, std::array< int, 3 > frontColor, std::array< int, 3 > backColor)
- void **printColorFromFile** (const std::string fileName, std::array< int, 3 > frontColor, std::array< int, 3 > backColor)
- void **printCenter** (const std::string toPrint, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding=0)

Print the string in the center.
- void **printRight** (const std::string toPrint, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding=0)

- void **printLeft** (const std::string toPrint, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding=0)
- void **printColor** (std::string toPrint, std::array< int, 3 > frontColor, std::array< int, 3 > backColor)
Print the string to the terminal in the given color.
- void **startCustomTerminal** (User &user, int)
- std::vector< std::string > **newCommand** (User &user, std::string="")
- void **clearCustomTerminal** (User &user, int)
- void **cleanScreen** (std::array< int, 3 > backColor)
- void **cleanScreen** ()
- void **newLine** (int lines=1)
- void **reloadCursorPos** ()
- void **saveCursorPos** ()
- void **moveCursor** (int posX, int posY)
- void **printGraphic** (const std::vector< int > data, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, std::array< int, 3 > pointColor, int valPerY=1, int posX=10, int posY=10, int scale=1)

5.7.1 Detailed Description

Header file of [CLIUtils.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

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5.7.2 Function Documentation

5.7.2.1 printCenter()

```
void printCenter (
    const std::string toPrint,
    std::array< int, 3 > frontColor,
    std::array< int, 3 > backColor,
    const int padding = 0 )
```

Print the string in the center.

Parameters

<i>toPrint</i>	
<i>frontColor</i>	
<i>backColor</i>	
<i>padding</i>	

5.7.2.2 printCenterFromFile()

```
void printCenterFromFile (
    const std::string fileName,
    std::array< int, 3 > frontColor,
    std::array< int, 3 > backColor,
    const int padding = 0 )
```

Print the contents of the file in the center.

Parameters

<i>fileName</i>	
<i>frontColor</i>	
<i>backColor</i>	

5.7.2.3 printColor()

```
void printColor (
    std::string toPrint,
    std::array< int, 3 > frontColor,
    std::array< int, 3 > backColor )
```

Print the string to the terminal in the given color.

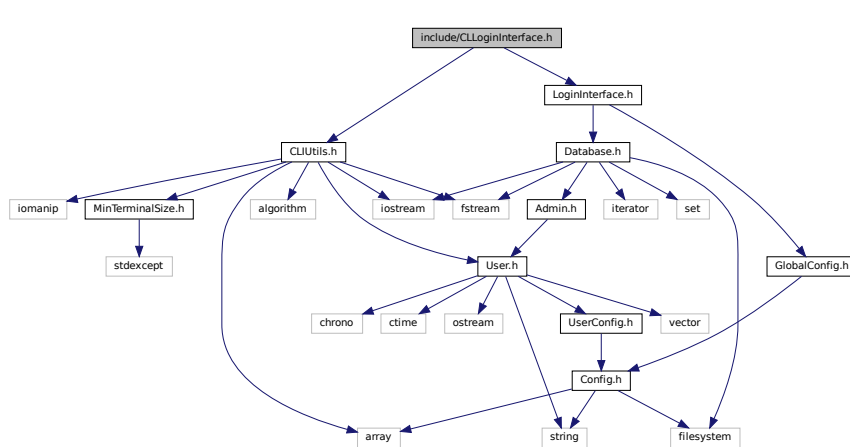
Parameters

<i>toPrint</i>	
<i>frontColor</i>	
<i>backColor</i>	

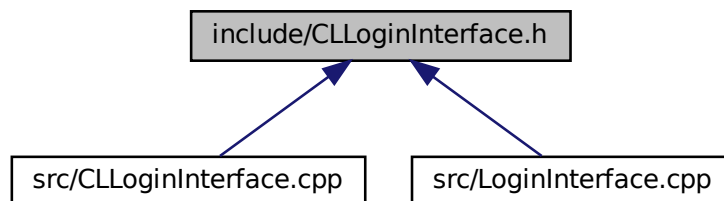
5.8 include/CLLoginInterface.h File Reference

Header file of [CLLoginInterface.cpp](#).

```
#include "LoginInterface.h"
#include "CLIUtils.h"
Include dependency graph for CLLoginInterface.h:
```



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



Classes

- class [CLLoginInterface](#)

5.8.1 Detailed Description

Header file of [CLLoginInterface.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

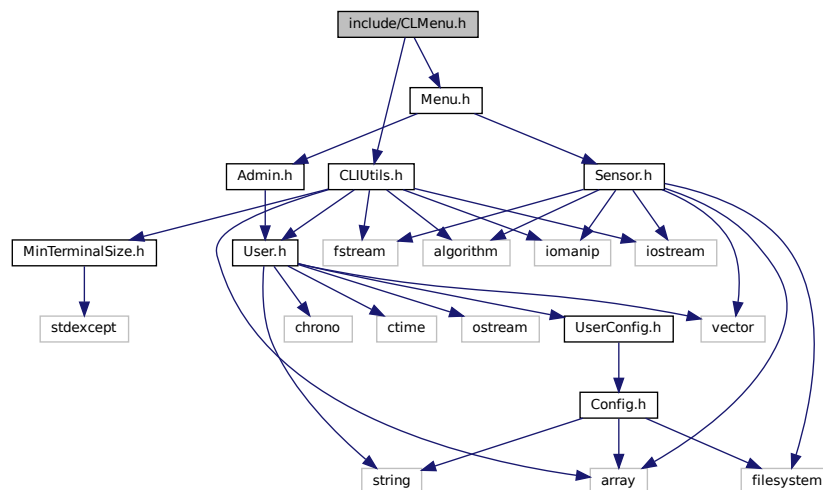
Copyright

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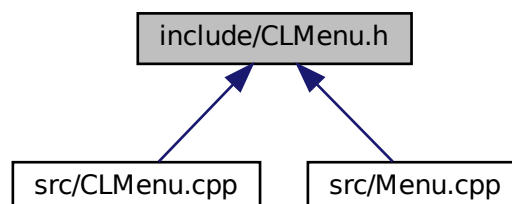
5.9 include/CLMenu.h File Reference

Header file of [CLMenu.cpp](#).

```
#include "Menu.h"
#include "CLIUtils.h"
Include dependency graph for CLMenu.h:
```



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



Classes

- class [CLMenu](#)

5.9.1 Detailed Description

Header file of [CLMenu.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

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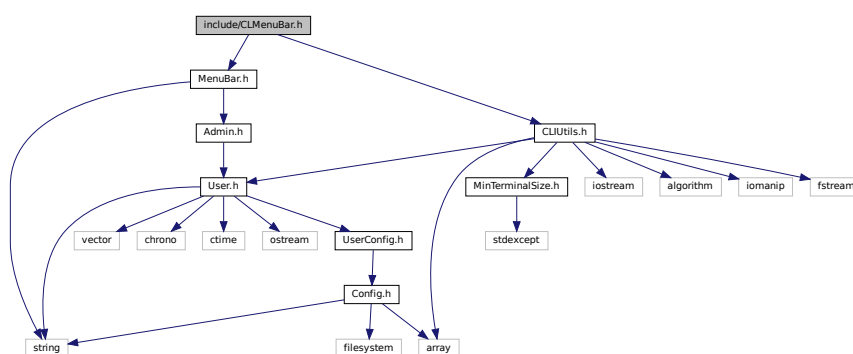
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5.10 include/CLMenuBar.h File Reference

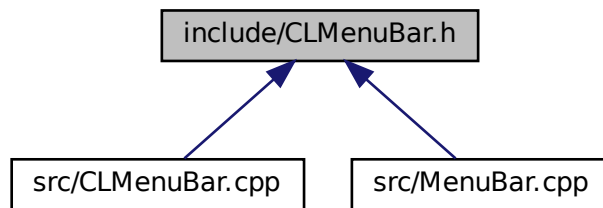
Header file of [CLMenuBar.cpp](#).

```
#include "MenuBar.h"  
#include "CLIUtils.h"
```

Include dependency graph for CLMenuBar.h:



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



Classes

- class [CLMenuBar](#)

5.10.1 Detailed Description

Header file of [CLMenuBar.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

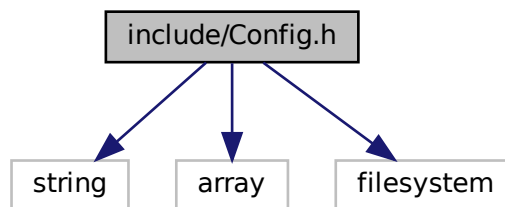
2022-11-23

Copyright

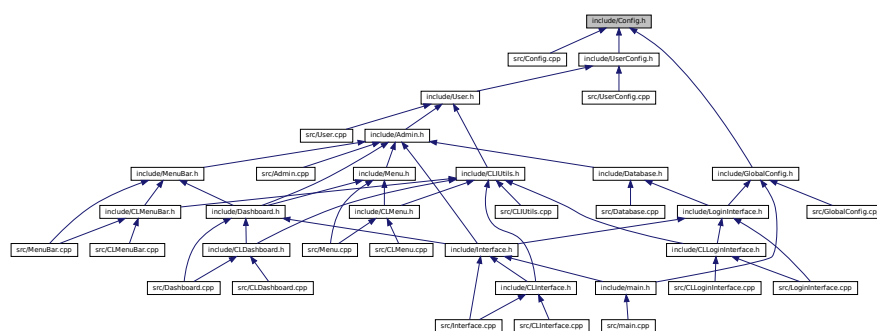
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5.11 include/Config.h File Reference

```
#include <string>
#include <array>
#include <filesystem>
Include dependency graph for Config.h:
```



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



Classes

- class [Config](#)

5.11.1 Detailed Description

Author

Javier Izquierdo Hernandez (j.izquierdoh.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-26

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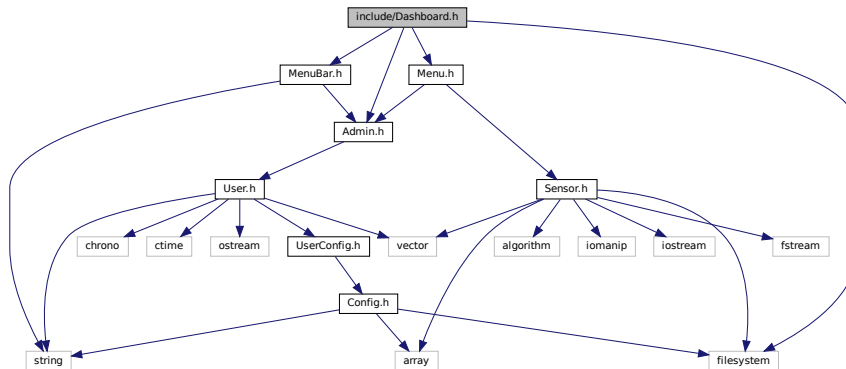
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5.12 include/Dashboard.h File Reference

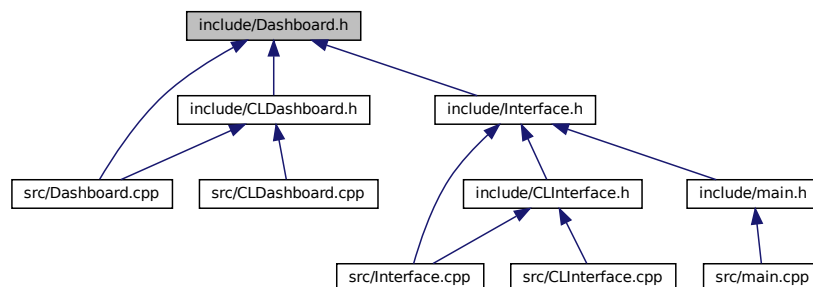
Header file of [Dashboard.cpp](#).

```
#include "Admin.h"
#include "MenuBar.h"
#include "Menu.h"
#include <filesystem>
```

Include dependency graph for Dashboard.h:



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



Classes

- class [Dashboard](#)

5.12.1 Detailed Description

Header file of [Dashboard.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

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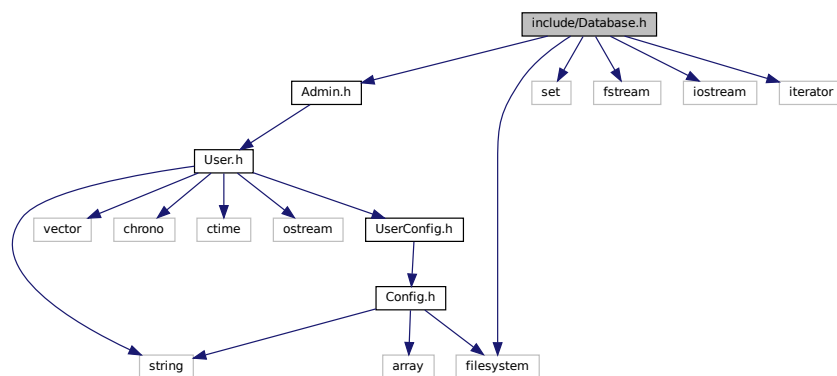
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5.13 include/Database.h File Reference

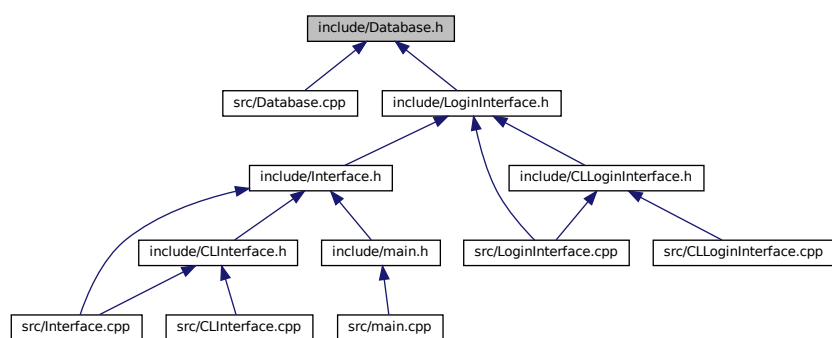
Header file of [Database.cpp](#).

```
#include "Admin.h"
#include <set>
#include <fstream>
#include <iostream>
#include <iterator>
#include <filesystem>
```

Include dependency graph for Database.h:



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



Classes

- class [Database](#)

5.13.1 Detailed Description

Header file of [Database.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

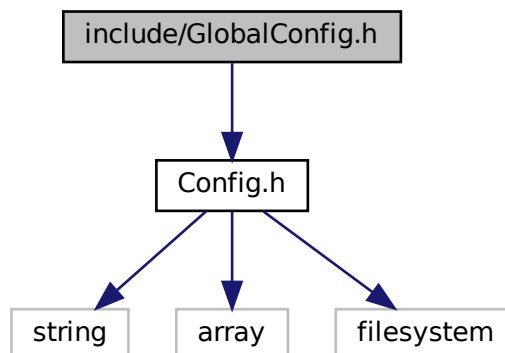
Copyright

Copyright (c) 2022

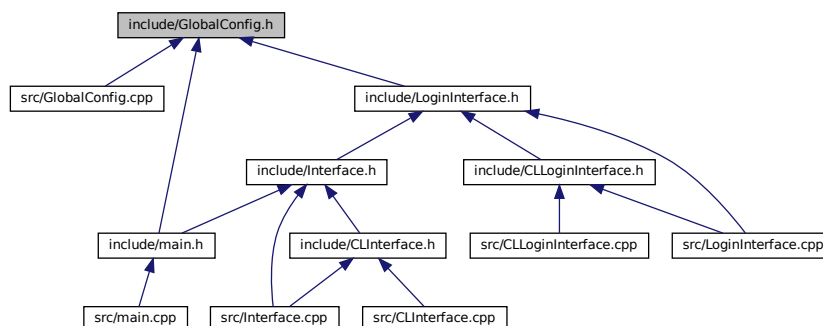
5.14 include/GlobalConfig.h File Reference

```
#include "Config.h"
```

Include dependency graph for GlobalConfig.h:



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



Classes

- class [GlobalConfig](#)

5.14.1 Detailed Description

Author

Javier Izquierdo Hernandez (j.izquierdoh.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-26

Copyright

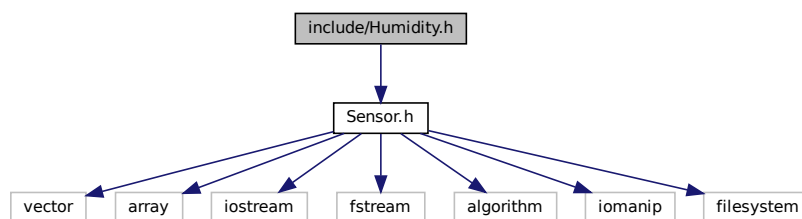
Copyright (c) 2022

5.15 include/Humidity.h File Reference

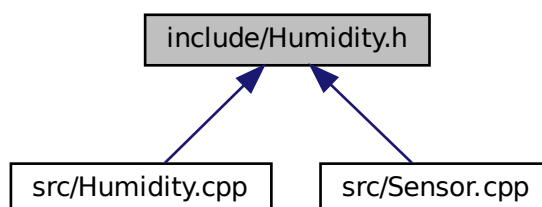
Header file of [Humidity.cpp](#).

```
#include "Sensor.h"
```

Include dependency graph for Humidity.h:



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



Classes

- class [Humidity](#)

5.15.1 Detailed Description

Header file of [Humidity.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

Copyright

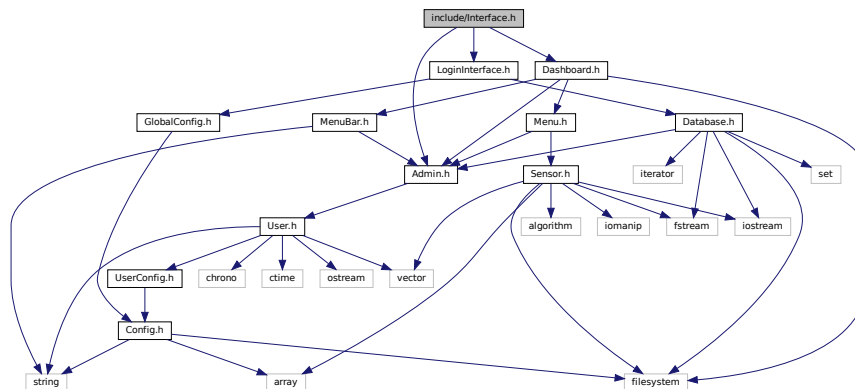
Copyright (c) 2022

5.16 include/Interface.h File Reference

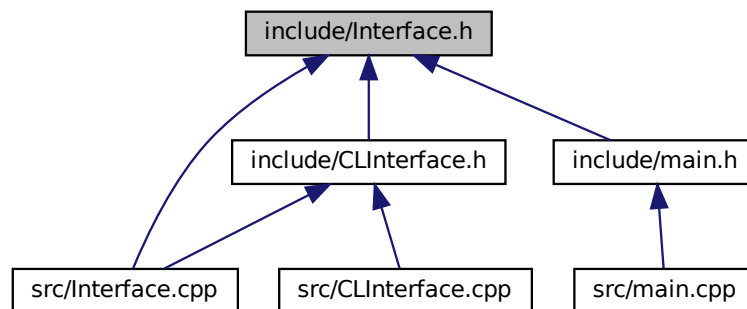
Header file of [Interface.cpp](#).

```
#include "LoginInterface.h"
#include "Dashboard.h"
#include "Admin.h"
```

Include dependency graph for Interface.h:



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



Classes

- class [Interface](#)

5.16.1 Detailed Description

Header file of [Interface.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

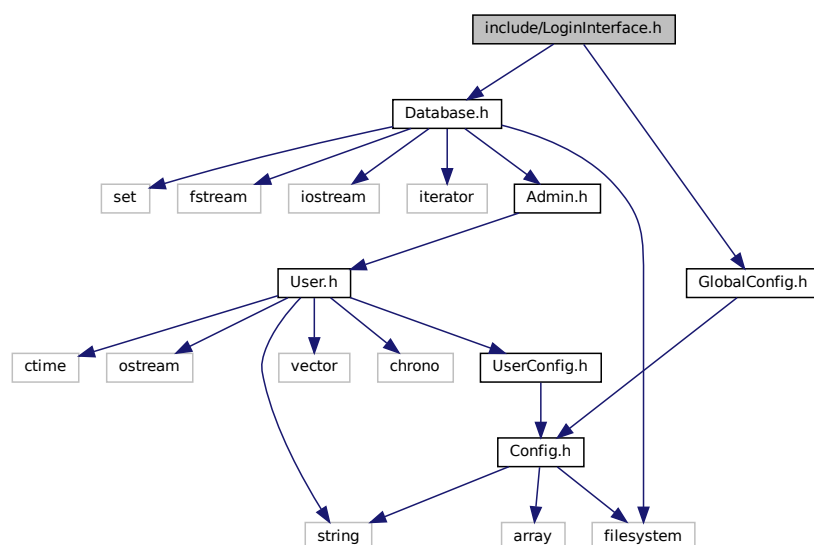
Copyright

Copyright (c) 2022

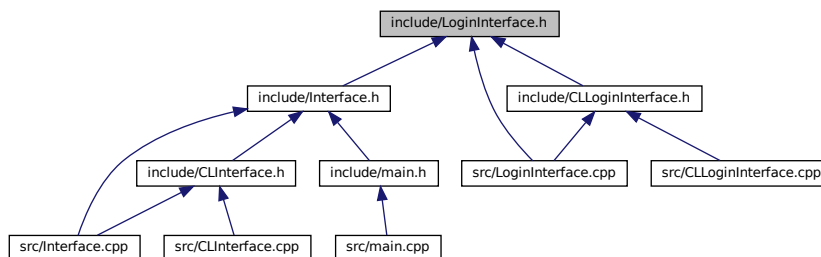
5.17 include/LoginInterface.h File Reference

Header file of [LoginInterface.cpp](#).

```
#include "Database.h"  
#include "GlobalConfig.h"  
Include dependency graph for LoginInterface.h:
```



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



Classes

- class [LoginInterface](#)

5.17.1 Detailed Description

Header file of [LoginInterface.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

Copyright

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5.18 include/main.h File Reference

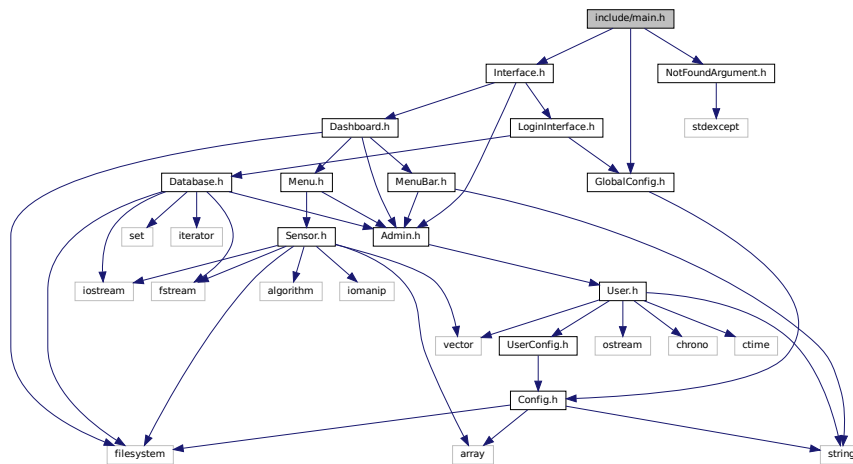
Header file of [main.cpp](#).

```
#include "Interface.h"
#include "GlobalConfig.h"
```

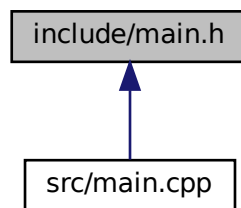


```
#include "NotFoundArgument.h"
```

Include dependency graph for main.h:



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



Functions

- int **main** (int argc, char *argv[], char *envp[])
- bool **checkArgumentIndex** (int indexToCheck, int argSize)

5.18.1 Detailed Description

Header file of [main.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

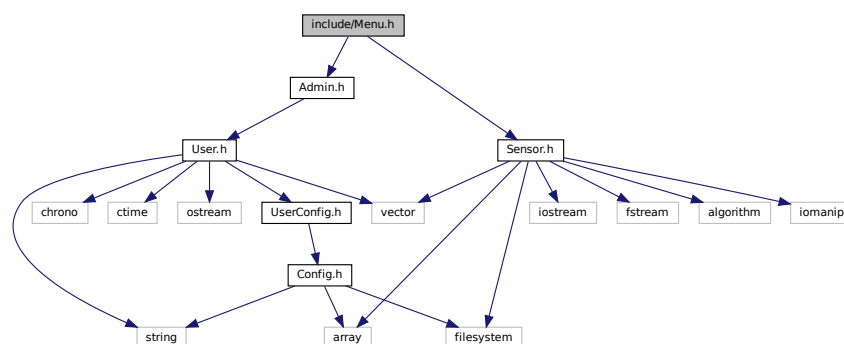
Copyright

Copyright (c) 2022

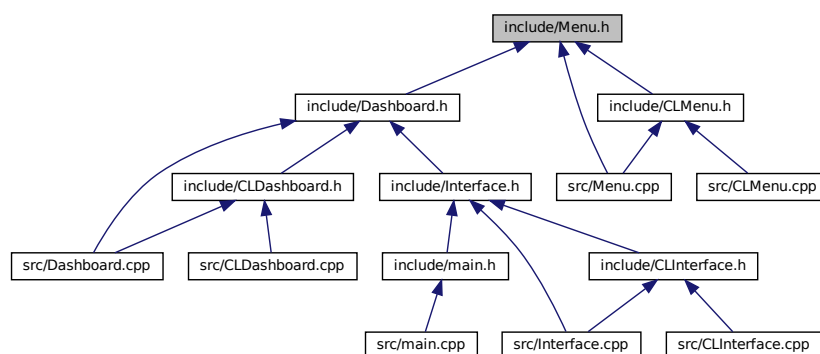
5.19 include/Menu.h File Reference

Header file of [Menu.cpp](#).

```
#include "Sensor.h"
#include "Admin.h"
Include dependency graph for Menu.h:
```



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



Classes

- class [Menu](#)

5.19.1 Detailed Description

Header file of [Menu.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

Copyright

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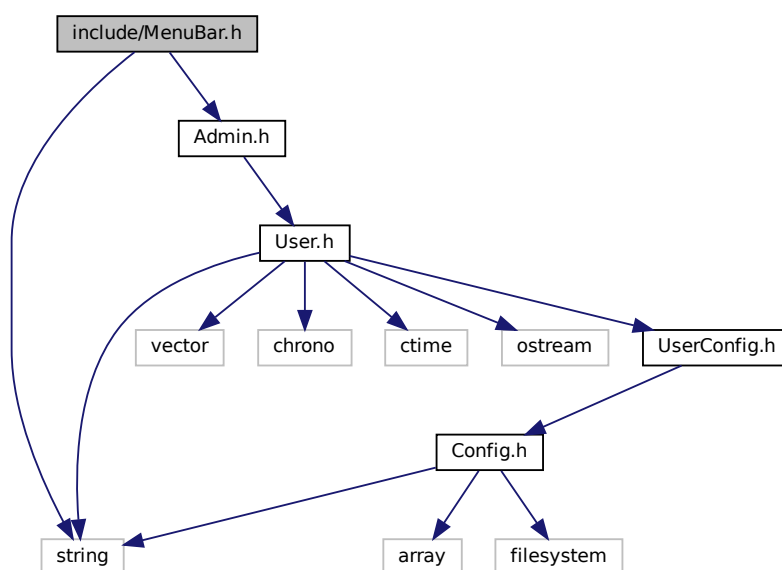
5.20 include/MenuBar.h File Reference

Header file of [MenuBar.cpp](#).

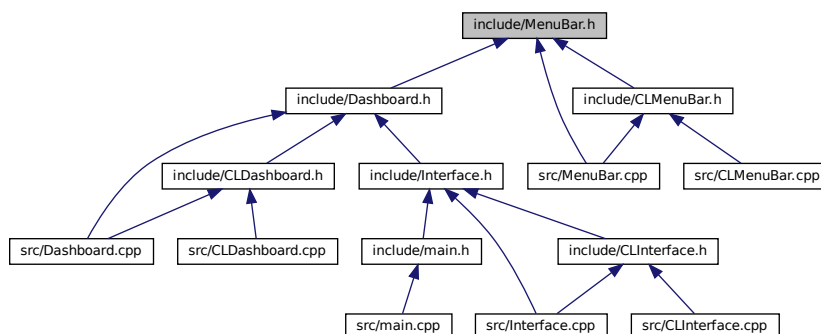
```
#include <string>
```

```
#include "Admin.h"
```

Include dependency graph for MenuBar.h:



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



Classes

- class [MenuBar](#)

5.20.1 Detailed Description

Header file of [MenuBar.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

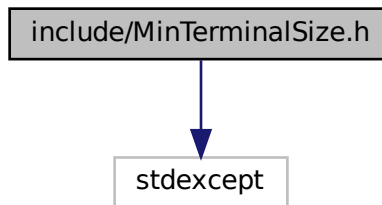
Copyright

Copyright (c) 2022

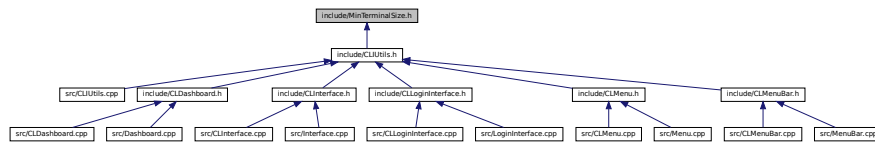
5.21 include/MinTerminalSize.h File Reference

```
#include <stdexcept>
```

Include dependency graph for MinTerminalSize.h:



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



Classes

- class [MinTerminalSize](#)

5.21.1 Detailed Description

Author

Javier Izquierdo Hernandez (j.izquierdoh.2021@alumnos.urjc.es)

Version

0.1

Date

2023-01-17

Copyright

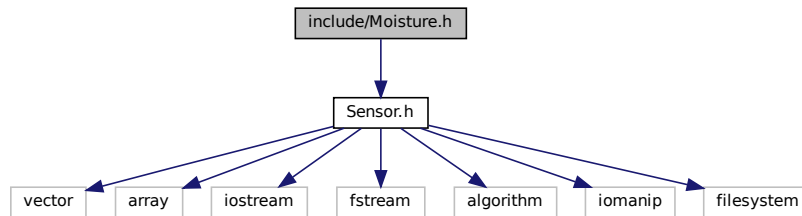
Copyright (c) 2023

5.22 include/Moisture.h File Reference

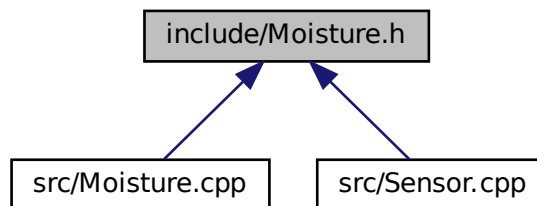
Header file of [Moisture.cpp](#).

```
#include "Sensor.h"
```

Include dependency graph for Moisture.h:



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



Classes

- class [Moisture](#)

5.22.1 Detailed Description

Header file of [Moisture.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

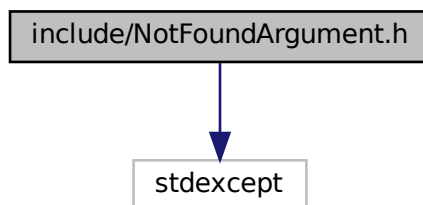
Copyright

Copyright (c) 2022

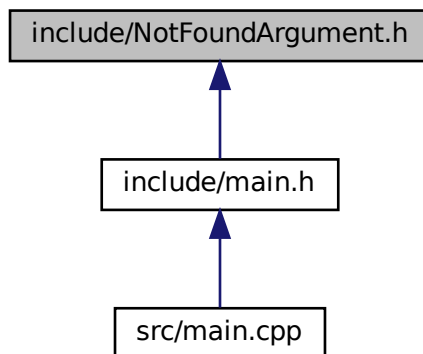
5.23 include/NotFoundArgument.h File Reference

```
#include <stdexcept>
```

Include dependency graph for NotFoundArgument.h:



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



Classes

- class [NotFoundArgument](#)

5.23.1 Detailed Description

Author

Javier Izquierdo Hernandez (j.izquierdoh.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-31

Copyright

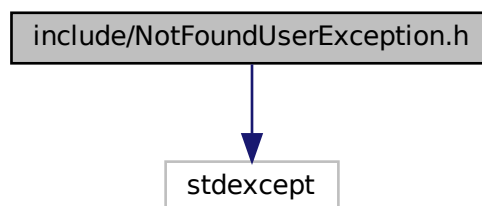
Copyright (c) 2022

5.24 include/NotFoundUserException.h File Reference

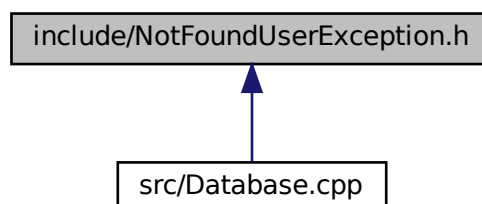
Exception thrown when user not found in database.

```
#include <stdexcept>
```

Include dependency graph for NotFoundUserException.h:



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



Classes

- class [NotFoundUserException](#)

5.24.1 Detailed Description

Exception thrown when user not found in database.

Author

Javier Izquierdo Hernandez (j.izquierdoh.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-20

Copyright

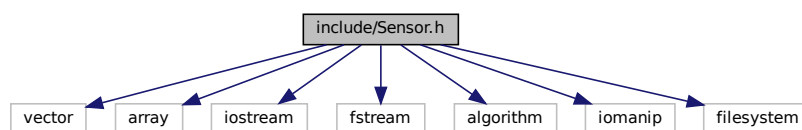
Copyright (c) 2022

5.25 include/Sensor.h File Reference

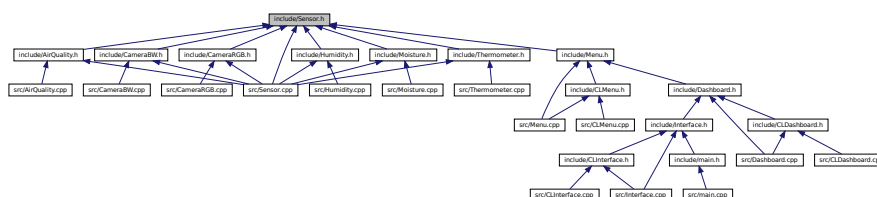
Header file of [Sensor.cpp](#).

```
#include <vector>
#include <array>
#include <iostream>
#include <fstream>
#include <algorithm>
#include <iomanip>
#include <filesystem>
```

Include dependency graph for Sensor.h:



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



Classes

- class [Sensor](#)

5.25.1 Detailed Description

Header file of [Sensor.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

Copyright

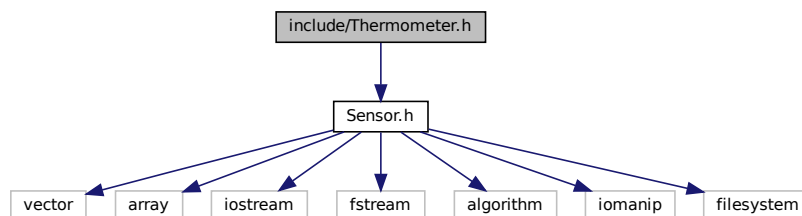
Copyright (c) 2022

5.26 include/Thermometer.h File Reference

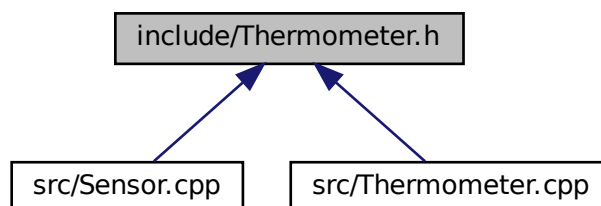
Header file of [Thermometer.cpp](#).

```
#include "Sensor.h"
```

Include dependency graph for Thermometer.h:



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



Classes

- class [Thermometer](#)

5.26.1 Detailed Description

Header file of [Thermometer.cpp](#).

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

Copyright

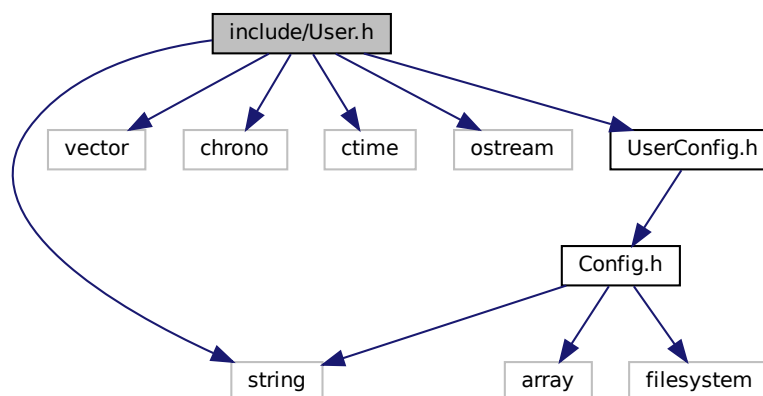
Copyright (c) 2022

5.27 include/User.h File Reference

Header file of [User.cpp](#).

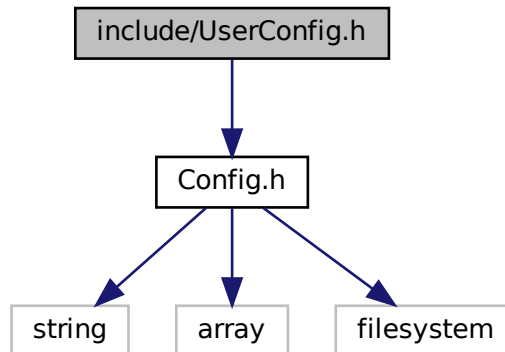
```
#include <string>
#include <vector>
#include <chrono>
#include <ctime>
#include <ostream>
#include "UserConfig.h"
```

Include dependency graph for User.h:

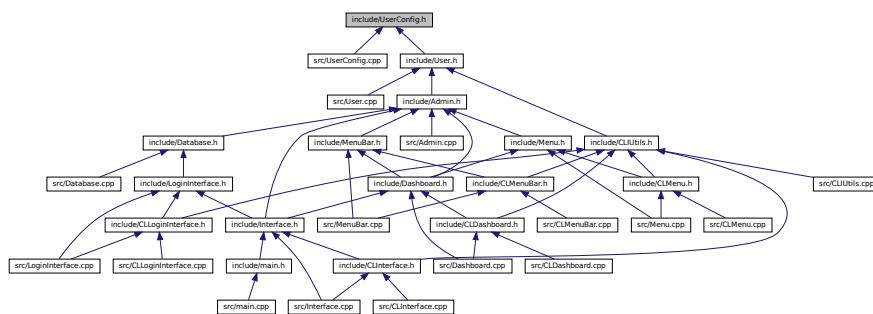



```
#include "Config.h"
```

Include dependency graph for UserConfig.h:



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



Classes

- class `UserConfig`

5.28.1 Detailed Description

Header file of [UserConfig.cpp](#).

Author

Javier Izquierdo Hernandez (j.izquierdoh.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-22

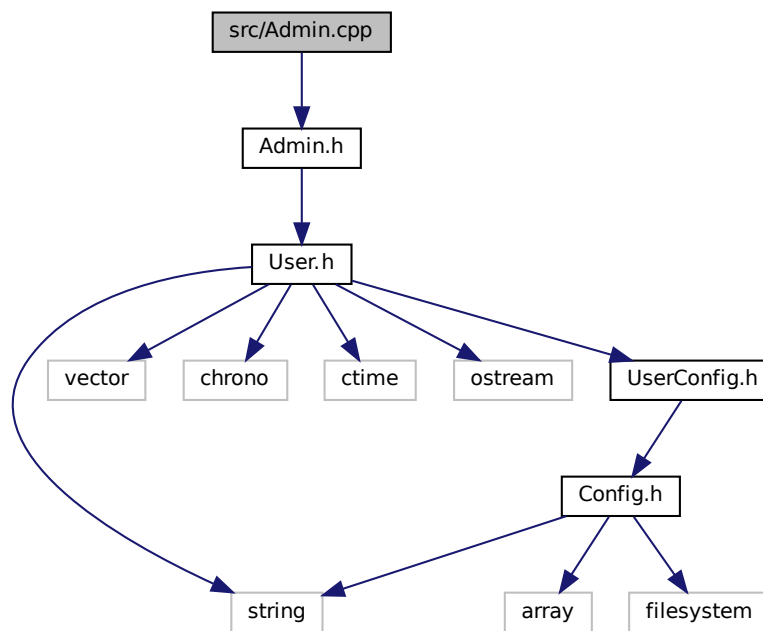
Copyright

Copyright (c) 2022

5.29 src/Admin.cpp File Reference

```
#include "Admin.h"
```

Include dependency graph for Admin.cpp:



5.29.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

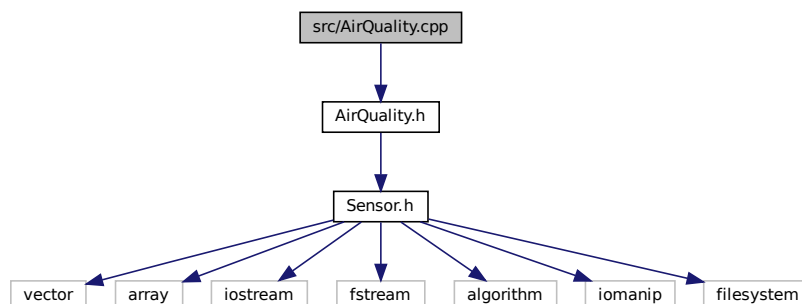
Copyright

Copyright (c) 2022

5.30 src/AirQuality.cpp File Reference

```
#include "AirQuality.h"
```

Include dependency graph for AirQuality.cpp:



5.30.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

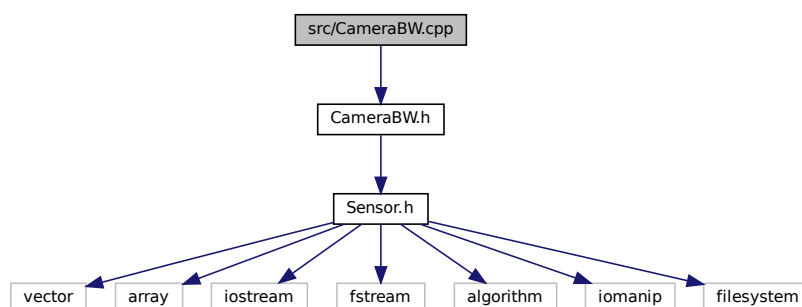
Copyright

Copyright (c) 2022

5.31 src/CameraBW.cpp File Reference

```
#include "CameraBW.h"
```

Include dependency graph for CameraBW.cpp:



5.31.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

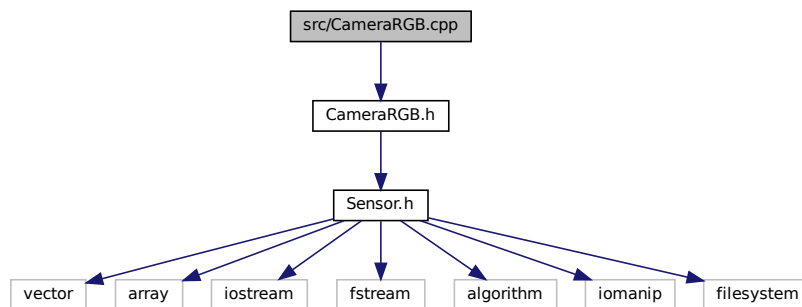
Copyright

Copyright (c) 2022

5.32 src/CameraRGB.cpp File Reference

```
#include "CameraRGB.h"
```

Include dependency graph for CameraRGB.cpp:



5.32.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

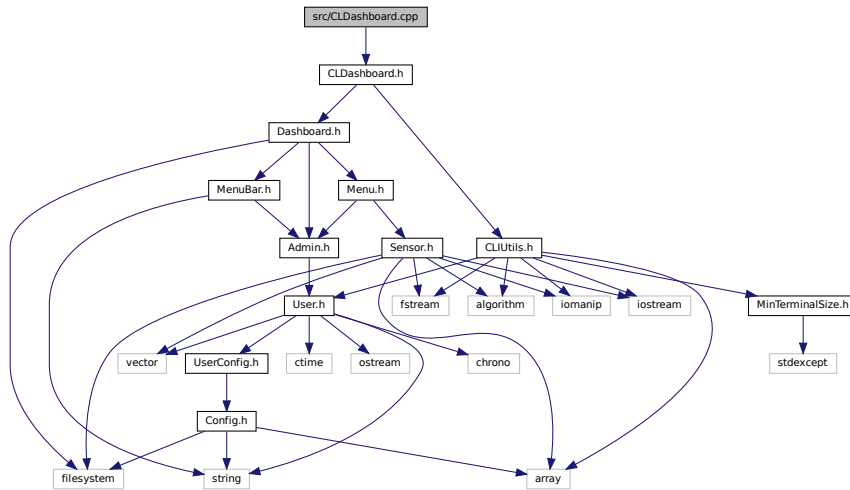
Copyright

Copyright (c) 2022

5.33 src/CLDashboard.cpp File Reference

```
#include "CLDashboard.h"
```

Include dependency graph for CLDashboard.cpp:



5.33.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

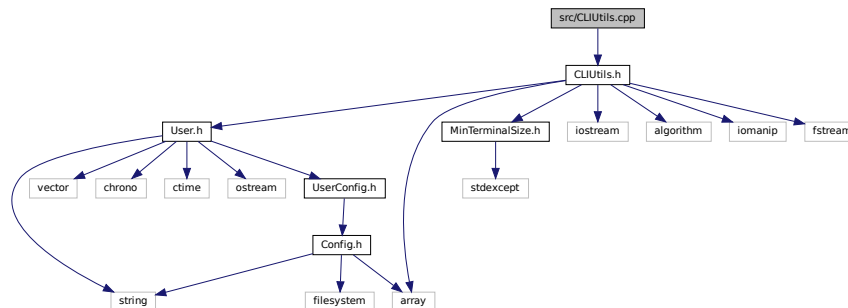
Copyright

Copyright (c) 2022

5.35 src/CLIUtils.cpp File Reference

```
#include "CLIUtils.h"
```

Include dependency graph for CLIUtils.cpp:



Functions

- void **setTerminalSize** ()
- int **getTerminalWidth** ()
- int **getTerminalHeight** ()
- void **printColorFromFile** (std::string fileName, std::array< int, 3 > frontColor, std::array< int, 3 > backColor)
- void **printRightFromFile** (std::string fileName, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding)
- void **printLeftFromFile** (std::string fileName, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding)
- void **printCenterFromFile** (std::string fileName, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding)
Print the contents of the file in the center.
- void **printLogo** (std::string fileName, std::array< int, 3 > frontColor, std::array< int, 3 > backColor)
- void **printCenter** (const std::string toPrint, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding)
Print the string in the center.
- void **printRight** (const std::string toPrint, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding)
- void **printLeft** (const std::string toPrint, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, const int padding)
- void **printColor** (std::string toPrint, std::array< int, 3 > frontColor, std::array< int, 3 > backColor)
Print the string to the terminal in the given color.
- void **startCustomTerminal** (User &user, int terminalSize)
- void **clearCustomTerminal** (User &user, int terminalSize)
- void **cleanScreen** (std::array< int, 3 > backColor)
- void **cleanScreen** ()
- void **moveCursor** (int posX, int posY)
- void **newLine** (int lines)
- void **reloadCursorPos** ()
- void **saveCursorPos** ()
- std::vector< std::string > **newCommand** (User &user, std::string currentSensor)
- void **printGraphic** (const std::vector< int > data, std::array< int, 3 > frontColor, std::array< int, 3 > backColor, std::array< int, 3 > pointColor, int valPerY, int posX, int posY, int scale)

Variables

- int `terminalWidth`
- int `terminalHeight`

5.35.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

Copyright

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5.35.2 Function Documentation

5.35.2.1 `printCenter()`

```
void printCenter (
    const std::string toPrint,
    std::array< int, 3 > frontColor,
    std::array< int, 3 > backColor,
    const int padding = 0 )
```

Print the string in the center.

Parameters

<i>toPrint</i>	
<i>frontColor</i>	
<i>backColor</i>	
<i>padding</i>	

5.35.2.2 printCenterFromFile()

```
void printCenterFromFile (
    const std::string fileName,
    std::array< int, 3 > frontColor,
    std::array< int, 3 > backColor,
    const int padding = 0 )
```

Print the contents of the file in the center.

Parameters

<i>fileName</i>	
<i>frontColor</i>	
<i>backColor</i>	

5.35.2.3 printColor()

```
void printColor (
    std::string toPrint,
    std::array< int, 3 > frontColor,
    std::array< int, 3 > backColor )
```

Print the string to the terminal in the given color.

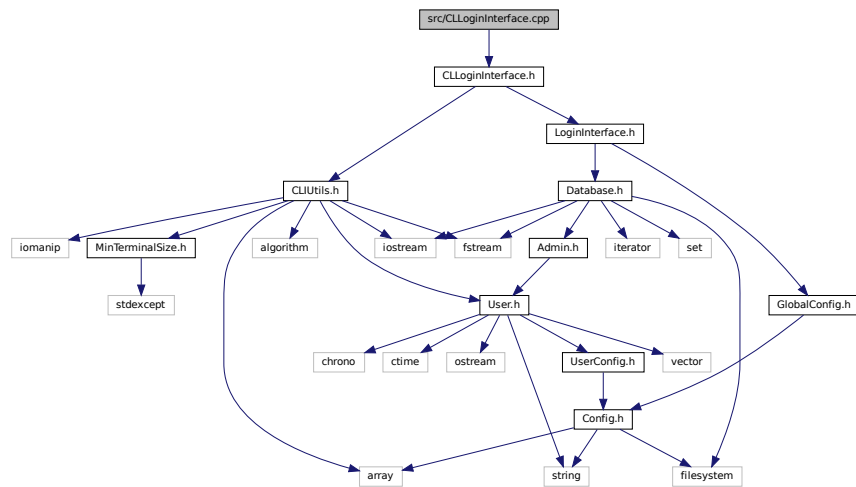
Parameters

<i>toPrint</i>	
<i>frontColor</i>	
<i>backColor</i>	

5.36 src/CLLoginInterface.cpp File Reference

```
#include "CLLoginInterface.h"
```

Include dependency graph for CLLoginInterface.cpp:



5.36.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

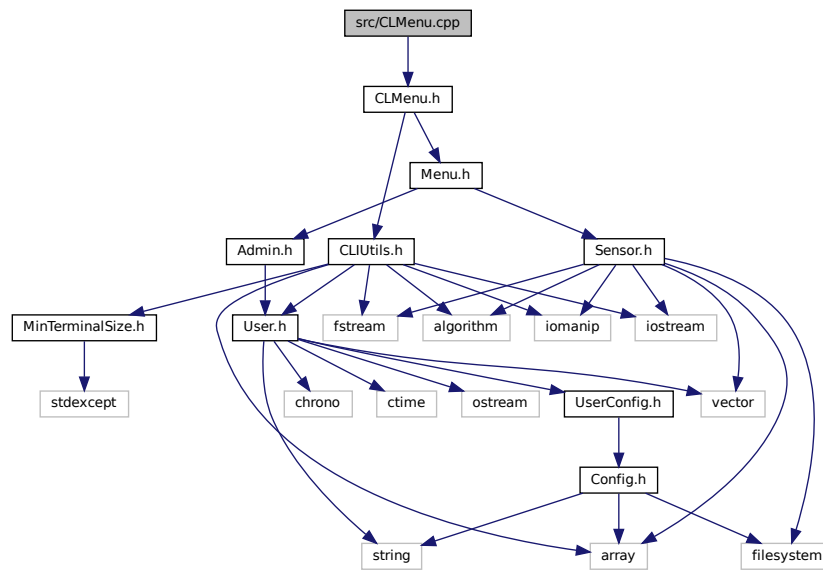
Copyright

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5.37 src/CLMenu.cpp File Reference

```
#include "CLMenu.h"
```

Include dependency graph for CLMenu.cpp:



5.37.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

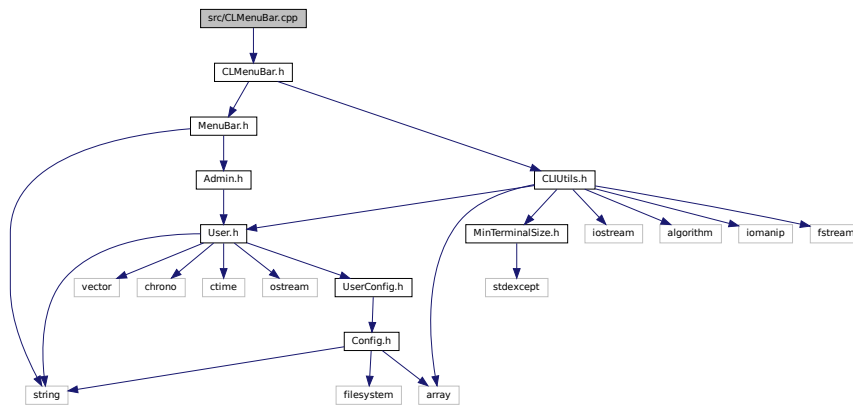
Copyright

Copyright (c) 2022

5.38 src/CLMenuBar.cpp File Reference

```
#include "CLMenuBar.h"
```

Include dependency graph for CLMenuBar.cpp:



5.38.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

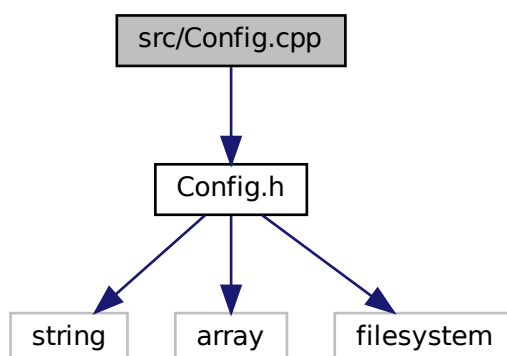
Copyright

Copyright (c) 2022

5.39 src/Config.cpp File Reference

```
#include "Config.h"
```


Include dependency graph for Config.cpp:



5.39.1 Detailed Description

Author

Javier Izquierdo Hernandez (j.izquierdoh.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-26

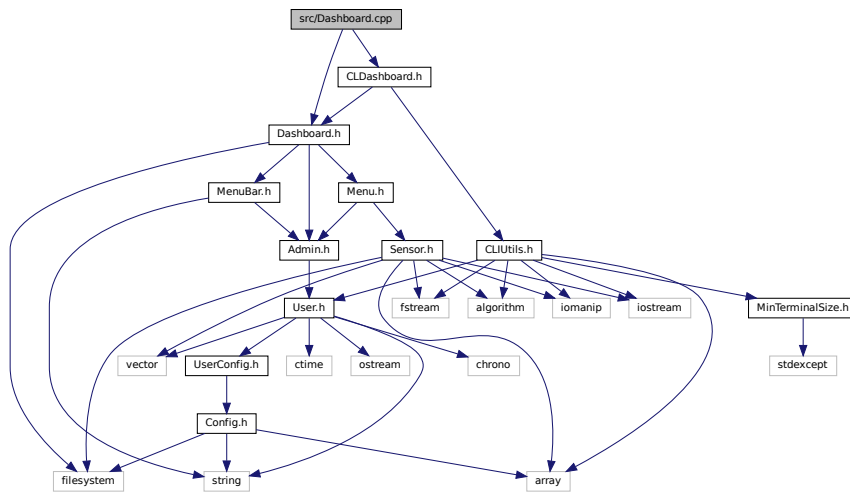
Copyright

Copyright (c) 2022

5.40 src/Dashboard.cpp File Reference

```
#include "Dashboard.h"
#include "CLDashboard.h"
```

Include dependency graph for Dashboard.cpp:



5.40.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

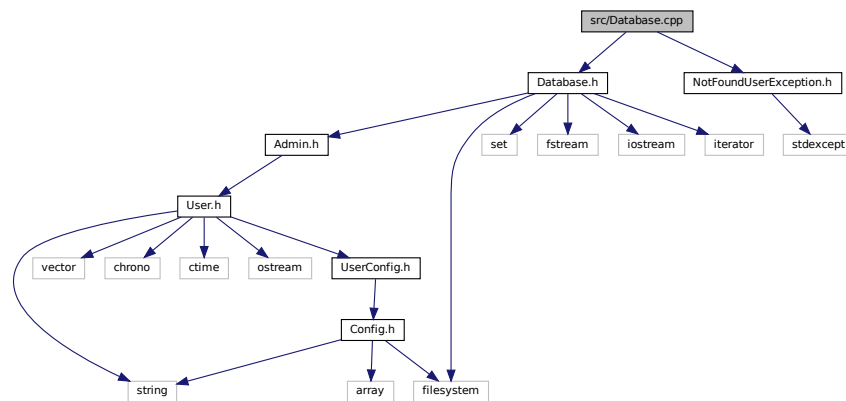
Copyright

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5.41 src/Database.cpp File Reference

```
#include "Database.h"
#include "NotFoundUserException.h"
```

Include dependency graph for Database.cpp:



5.41.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

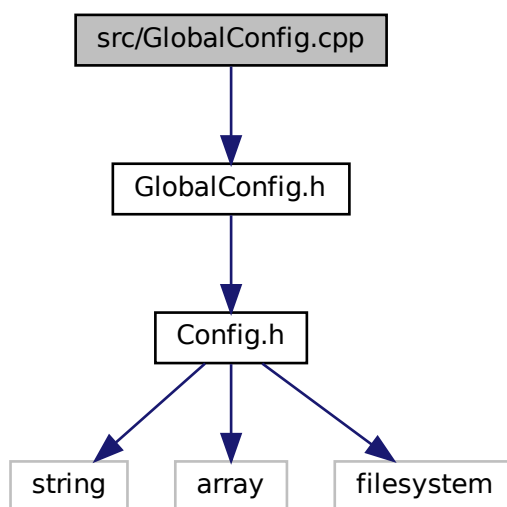
Copyright

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5.42 src/GlobalConfig.cpp File Reference

```
#include "GlobalConfig.h"
```

Include dependency graph for GlobalConfig.cpp:



5.42.1 Detailed Description

Author

Javier Izquierdo Hernandez (j.izquierdoh.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-26

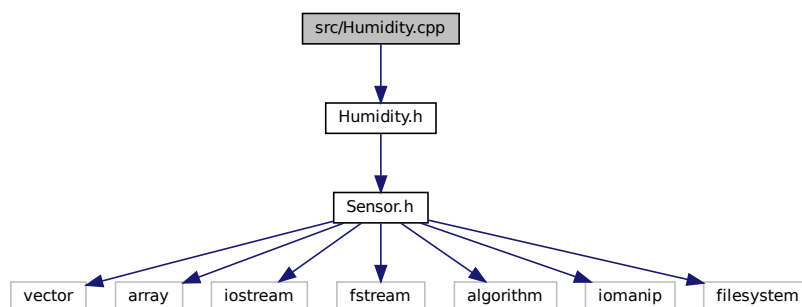
Copyright

Copyright (c) 2022

5.43 src/Humidity.cpp File Reference

```
#include "Humidity.h"
```

Include dependency graph for Humidity.cpp:



5.43.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

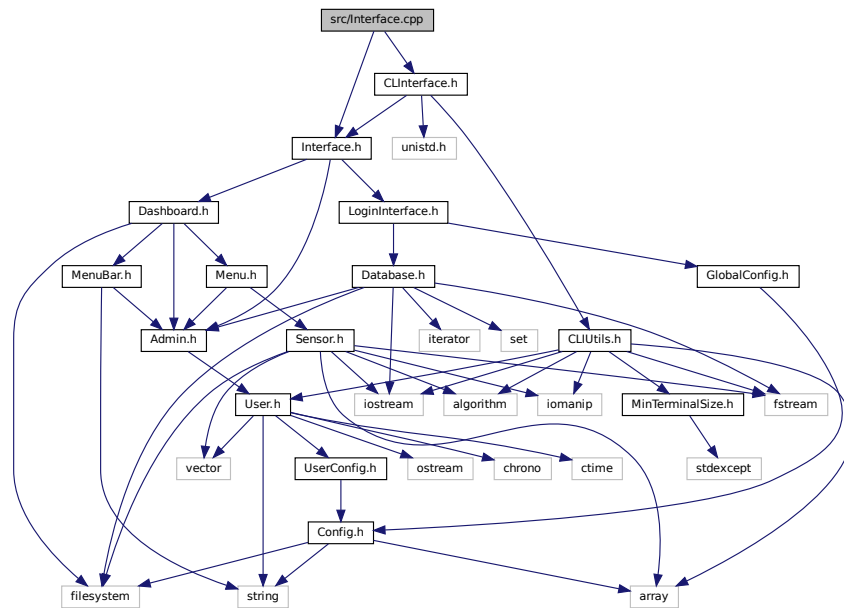
Copyright

Copyright (c) 2022

5.44 src/Interface.cpp File Reference

```
#include "Interface.h"
#include "CLInterface.h"
```

Include dependency graph for Interface.cpp:



5.44.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

Copyright

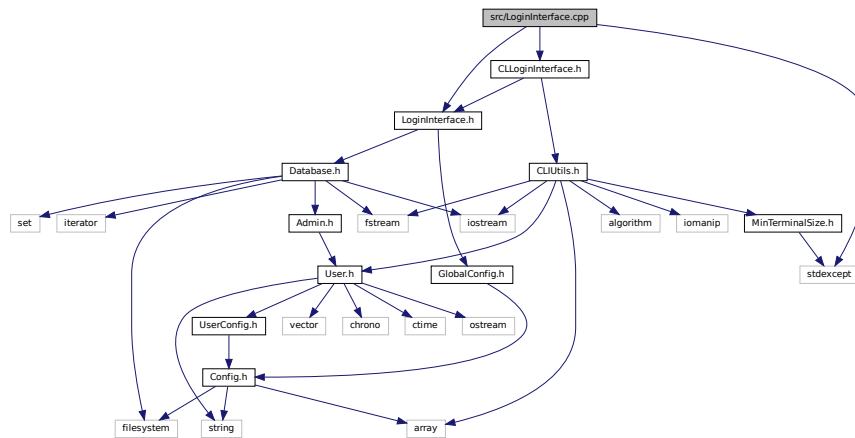
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5.45 src/LoginInterface.cpp File Reference

```
#include "LoginInterface.h"
#include "CLLoginInterface.h"
```

```
#include <stdexcept>
```

Include dependency graph for LoginInterface.cpp:



5.45.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

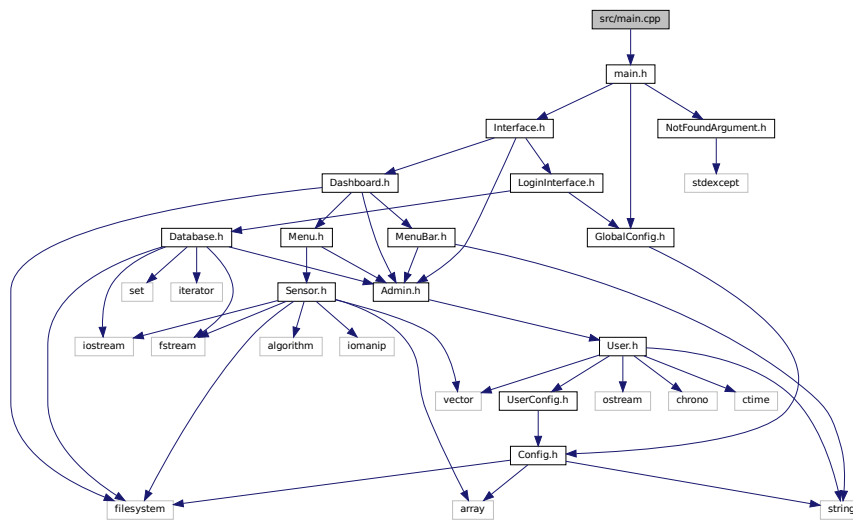
Copyright

Copyright (c) 2022

5.46 src/main.cpp File Reference

```
#include "main.h"
```

Include dependency graph for main.cpp:



Functions

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

5.46.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

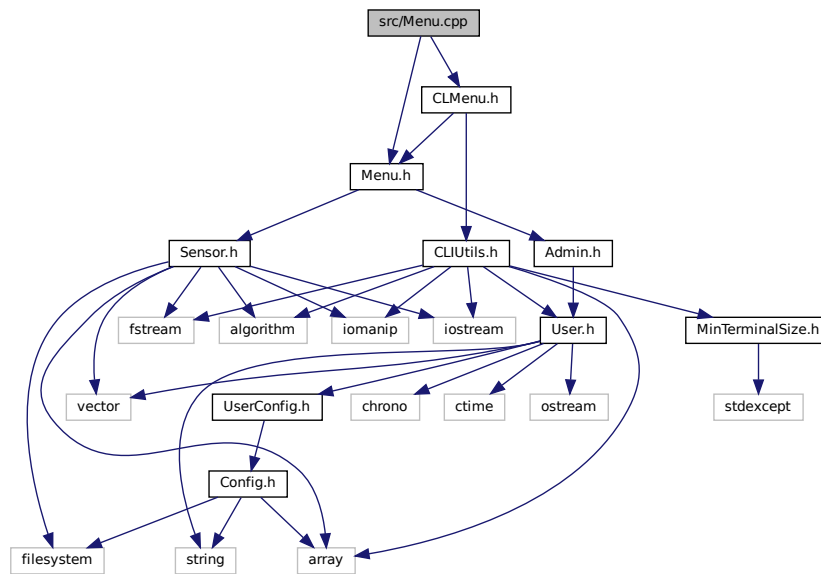
2022-11-23

Copyright

Copyright (c) 2022

5.47 src/Menu.cpp File Reference

```
#include "Menu.h"  
#include "CLMenu.h"  
Include dependency graph for Menu.cpp:
```



5.47.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

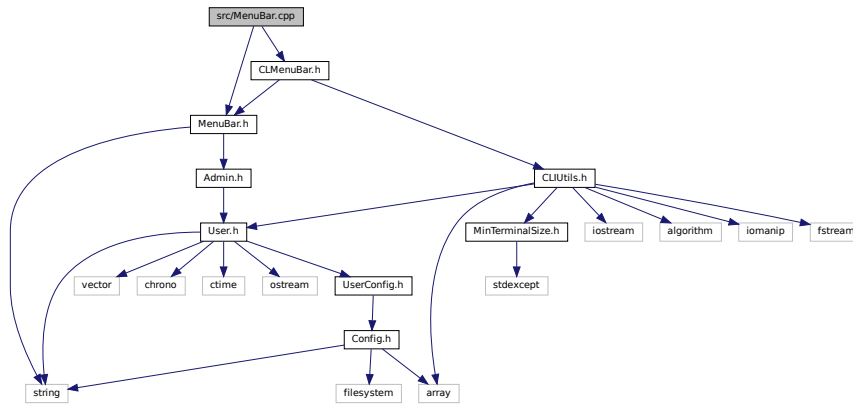
2022-11-23

Copyright

Copyright (c) 2022

5.48 src/MenuBar.cpp File Reference

```
#include "MenuBar.h"
#include "CLMenuBar.h"
Include dependency graph for MenuBar.cpp:
```



5.48.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

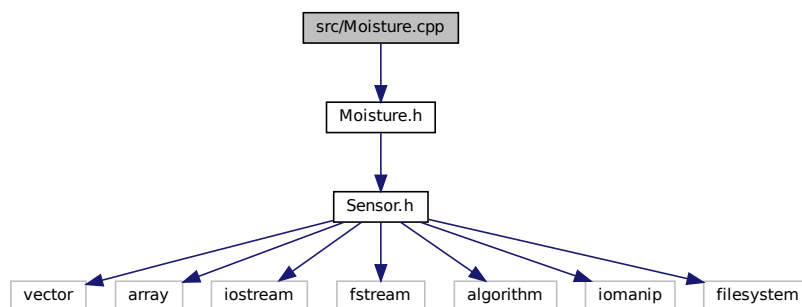
Copyright

Copyright (c) 2022

5.49 src/Moisture.cpp File Reference

```
#include "Moisture.h"
```

Include dependency graph for Moisture.cpp:



5.49.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

Copyright

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5.50 src/Sensor.cpp File Reference

```
#include "Sensor.h"
#include "Thermometer.h"
#include "Humidity.h"
#include "Moisture.h"
#include "AirQuality.h"
#include "CameraBW.h"
```

```
#include "CameraRGB.h"
```

Include dependency graph for Sensor.cpp:



5.50.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

2022-11-23

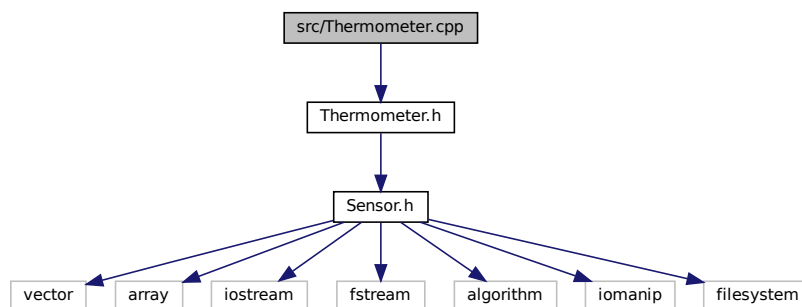
Copyright

Copyright (c) 2022

5.51 src/Thermometer.cpp File Reference

```
#include "Thermometer.h"
```

Include dependency graph for Thermometer.cpp:



5.51.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

1.0

Date

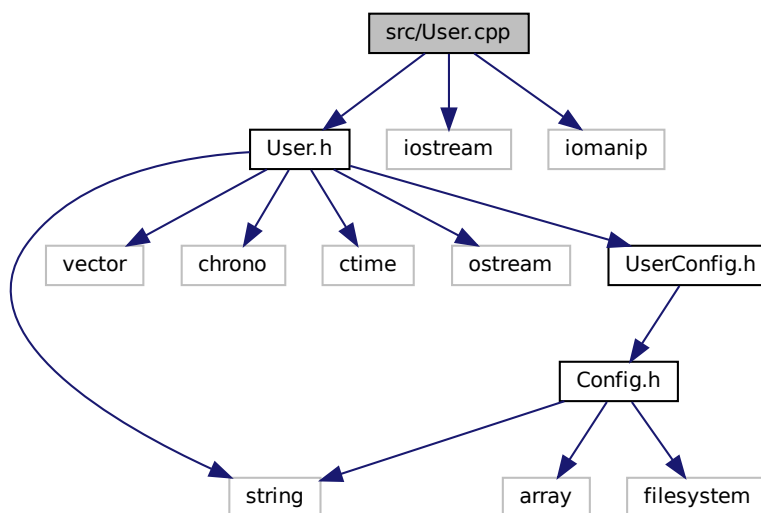
2022-11-23

Copyright

Copyright (c) 2022

5.52 src/User.cpp File Reference

```
#include "User.h"
#include <iostream>
#include <iomanip>
Include dependency graph for User.cpp:
```



Functions

- `std::ostream & operator<< (std::ostream &output, const User &user)`

5.52.1 Detailed Description

Author

Javier Izquierdo (j.izquierdoh.2021@alumnos.urjc.es)

Version

2.0

Date

2022-11-23

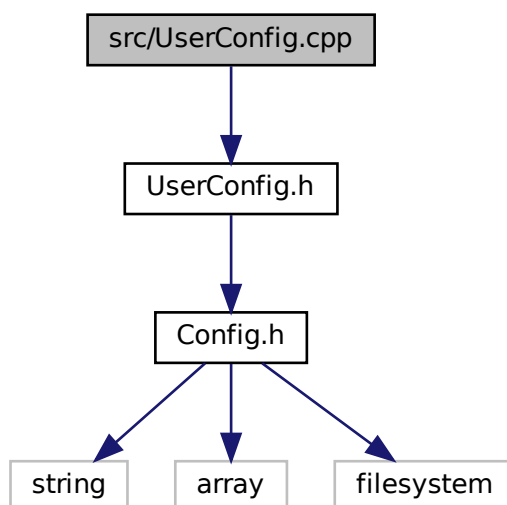
Copyright

Copyright (c) 2022

5.53 src/UserConfig.cpp File Reference

```
#include "UserConfig.h"
```

Include dependency graph for UserConfig.cpp:



5.53.1 Detailed Description

Author

Javier Izquierdo Hernandez (j.izquierdoh.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-22

Copyright

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