

Practice 9

Generated by Doxygen 1.8.17

1 Hierarchical Index	1
1.1 Class Hierarchy	1
2 Class Index	3
2.1 Class List	3
3 File Index	5
3.1 File List	5
4 Class Documentation	7
4.1 Admin Class Reference	7
4.1.1 Constructor & Destructor Documentation	8
4.1.1.1 Admin()	8
4.2 AirQuality Class Reference	8
4.2.1 Constructor & Destructor Documentation	9
4.2.1.1 AirQuality()	9
4.3 CameraBW Class Reference	10
4.3.1 Constructor & Destructor Documentation	10
4.3.1.1 CameraBW()	10
4.4 CameraRGB Class Reference	11
4.4.1 Constructor & Destructor Documentation	12
4.4.1.1 CameraRGB()	12
4.5 CLDashboard Class Reference	12
4.5.1 Constructor & Destructor Documentation	14
4.5.1.1 CLDashboard()	14
4.5.2 Member Function Documentation	14
4.5.2.1 changeMainMenu()	14
4.5.2.2 errorCommand()	14
4.5.2.3 helpCommand()	14
4.5.2.4 listSensor()	15
4.5.2.5 permissionError()	15
4.5.2.6 readCommand()	15
4.5.2.7 showMainMenu()	15
4.6 CLInterface Class Reference	16
4.6.1 Constructor & Destructor Documentation	17
4.6.1.1 CLInterface()	17
4.6.2 Member Function Documentation	17
4.6.2.1 login()	17
4.7 CLLoginInterface Class Reference	18
4.7.1 Member Function Documentation	19
4.7.1.1 askEmployeeNumber() [1/2]	19
4.7.1.2 askEmployeeNumber() [2/2]	19
4.7.1.3 askNIF() [1/2]	19

4.7.1.4 askNIF() [2/2]	20
4.7.1.5 showWelcomeMessage()	20
4.8 CLMenu Class Reference	20
4.8.1 Member Function Documentation	21
4.8.1.1 clearMenu()	21
4.8.1.2 show() [1/2]	21
4.8.1.3 show() [2/2]	22
4.9 CLMenuBar Class Reference	22
4.9.1 Member Function Documentation	23
4.9.1.1 show()	23
4.10 Dashboard Class Reference	24
4.10.1 Member Function Documentation	25
4.10.1.1 addNewSensor()	26
4.10.1.2 addToMainMenu() [1/2]	26
4.10.1.3 addToMainMenu() [2/2]	26
4.10.1.4 canExit()	26
4.10.1.5 changeCurrentSensorInfo()	27
4.10.1.6 changeInterface()	27
4.10.1.7 Create()	27
4.10.1.8 deleteSensor()	28
4.10.1.9 exit()	28
4.10.1.10 logout()	28
4.10.1.11 moveWindowMainMenu()	29
4.11 Database Class Reference	29
4.11.1 Member Function Documentation	29
4.11.1.1 getUser()	29
4.12 Humidity Class Reference	30
4.12.1 Constructor & Destructor Documentation	30
4.12.1.1 Humidity()	30
4.13 Interface Class Reference	31
4.13.1 Member Function Documentation	32
4.13.1.1 Create()	32
4.13.1.2 loadMenu()	32
4.13.1.3 login() [1/2]	33
4.13.1.4 login() [2/2]	33
4.14 LoginInterface Class Reference	34
4.14.1 Member Function Documentation	35
4.14.1.1 checkUser()	35
4.14.1.2 Create()	35
4.15 Menu Class Reference	36
4.15.1 Member Function Documentation	36
4.15.1.1 Create()	36

4.16 MenuBar Class Reference	37
4.16.1 Member Function Documentation	38
4.16.1.1 Create()	38
4.16.1.2 setCurrentMenu()	38
4.17 Moisture Class Reference	39
4.17.1 Constructor & Destructor Documentation	39
4.17.1.1 Moisture()	39
4.18 NotFoundUserException Class Reference	40
4.19 Sensor Class Reference	41
4.19.1 Constructor & Destructor Documentation	42
4.19.1.1 Sensor()	42
4.19.2 Member Function Documentation	42
4.19.2.1 Create()	42
4.19.2.2 requestData()	43
4.20 Thermometer Class Reference	43
4.20.1 Constructor & Destructor Documentation	44
4.20.1.1 Thermometer()	44
4.21 User Class Reference	44
4.21.1 Constructor & Destructor Documentation	46
4.21.1.1 User()	46
4.21.2 Member Function Documentation	46
4.21.2.1 addTimestamp()	46
4.21.2.2 getName()	46
4.21.2.3 getTimestamp()	47
4.21.2.4 hasAdminPermission()	47
4.21.2.5 setEmployeeNumber()	47
4.21.2.6 setNIF()	47
4.22 UserConfig Class Reference	48
5 File Documentation	49
5.1 include/Admin.h File Reference	49
5.1.1 Detailed Description	50
5.2 include/AirQuality.h File Reference	50
5.2.1 Detailed Description	51
5.3 include/CameraBW.h File Reference	51
5.3.1 Detailed Description	52
5.4 include/CameraRGB.h File Reference	52
5.4.1 Detailed Description	53
5.5 include/CLDashboard.h File Reference	53
5.5.1 Detailed Description	54
5.6 include/CLInterface.h File Reference	55
5.6.1 Detailed Description	55

5.7 include/CLIUtils.h File Reference	56
5.7.1 Detailed Description	57
5.7.2 Function Documentation	57
5.7.2.1 printCenter()	57
5.7.2.2 printCenterFromFile()	58
5.7.2.3 printColor()	58
5.8 include/GLLoginInterface.h File Reference	58
5.8.1 Detailed Description	59
5.9 include/CLMenu.h File Reference	60
5.9.1 Detailed Description	61
5.10 include/CLMenuBar.h File Reference	61
5.10.1 Detailed Description	62
5.11 include/Dashboard.h File Reference	62
5.11.1 Detailed Description	63
5.12 include/Database.h File Reference	64
5.12.1 Detailed Description	65
5.13 include/Humidity.h File Reference	65
5.13.1 Detailed Description	66
5.14 include/Interface.h File Reference	66
5.14.1 Detailed Description	67
5.15 include/LoginInterface.h File Reference	68
5.15.1 Detailed Description	68
5.16 include/main.h File Reference	69
5.16.1 Detailed Description	70
5.17 include/Menu.h File Reference	70
5.17.1 Detailed Description	71
5.18 include/MenuBar.h File Reference	72
5.18.1 Detailed Description	73
5.19 include/Moisture.h File Reference	73
5.19.1 Detailed Description	74
5.20 include/NotFoundUserException.h File Reference	74
5.20.1 Detailed Description	75
5.21 include/Sensor.h File Reference	76
5.21.1 Detailed Description	76
5.22 include/Thermometer.h File Reference	77
5.22.1 Detailed Description	77
5.23 include/User.h File Reference	78
5.23.1 Detailed Description	78
5.24 include/UserConfig.h File Reference	79
5.24.1 Detailed Description	80
5.25 src/Admin.cpp File Reference	80
5.25.1 Detailed Description	81

5.26 src/AirQuality.cpp File Reference	81
5.26.1 Detailed Description	81
5.27 src/CameraBW.cpp File Reference	82
5.27.1 Detailed Description	82
5.28 src/CameraRGB.cpp File Reference	82
5.28.1 Detailed Description	83
5.29 src/CLDashboard.cpp File Reference	83
5.29.1 Detailed Description	83
5.30 src/CLInterface.cpp File Reference	84
5.30.1 Detailed Description	84
5.31 src/CLIUtils.cpp File Reference	85
5.31.1 Detailed Description	86
5.31.2 Function Documentation	86
5.31.2.1 printCenter()	86
5.31.2.2 printCenterFromFile()	86
5.31.2.3 printColor()	87
5.32 src/CLLoginInterface.cpp File Reference	87
5.32.1 Detailed Description	88
5.33 src/CLMenu.cpp File Reference	88
5.33.1 Detailed Description	88
5.34 src/CLMenuBar.cpp File Reference	89
5.34.1 Detailed Description	89
5.35 src/Dashboard.cpp File Reference	89
5.35.1 Detailed Description	90
5.36 src/Database.cpp File Reference	90
5.36.1 Detailed Description	91
5.37 src/Humidity.cpp File Reference	91
5.37.1 Detailed Description	92
5.38 src/Interface.cpp File Reference	92
5.38.1 Detailed Description	93
5.39 src/LoginInterface.cpp File Reference	93
5.39.1 Detailed Description	94
5.40 src/main.cpp File Reference	94
5.40.1 Detailed Description	95
5.41 src/Menu.cpp File Reference	95
5.41.1 Detailed Description	95
5.42 src/MenuBar.cpp File Reference	96
5.42.1 Detailed Description	96
5.43 src/Moisture.cpp File Reference	96
5.43.1 Detailed Description	97
5.44 src/Sensor.cpp File Reference	97
5.44.1 Detailed Description	98

5.45 src/Thermometer.cpp File Reference	98
5.45.1 Detailed Description	99
5.46 src/User.cpp File Reference	99
5.46.1 Detailed Description	100
5.47 src/UserConfig.cpp File Reference	100
5.47.1 Detailed Description	100
Index	101

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

Dashboard	24
CLDashboard	12
Database	29
Interface	31
CLInterface	16
LoginInterface	34
CLLoginInterface	18
Menu	36
CLMenu	20
MenuBar	37
CLMenuBar	22
runtime_error	
NotFoundUserException	40
Sensor	41
AirQuality	8
CameraBW	10
CameraRGB	11
Humidity	30
Moisture	39
Thermometer	43
User	44
Admin	7
UserConfig	48

Chapter 2

Class Index

2.1 Class List

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

Admin	7
AirQuality	8
CameraBW	10
CameraRGB	11
CLDashboard	12
CLInterface	16
CLLoginInterface	18
CLMenu	20
CLMenuBar	22
Dashboard	24
Database	29
Humidity	30
Interface	31
LoginInterface	34
Menu	36
MenuBar	37
Moisture	39
NotFoundUserException	40
Sensor	41
Thermometer	43
User	44
UserConfig	48

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	49
include/ AirQuality.h	
Header file of AirQuality.cpp	50
include/ CameraBW.h	
Header file of CameraBW.cpp	51
include/ CameraRGB.h	
Header file of CameraRGB.cpp	52
include/ CLDashboard.h	
Header file of CLDashboard.cpp	53
include/ CLInterface.h	
Header file of CLInterface.cpp	55
include/ CLIUtils.h	
Header file of CLIUtils.cpp	56
include/ CLLoginInterface.h	
Header file of CLLoginInterface.cpp	58
include/ CLMenu.h	
Header file of CLMenu.cpp	60
include/ CLMenuBar.h	
Header file of CLMenuBar.cpp	61
include/ Dashboard.h	
Header file of Dashboard.cpp	62
include/ Database.h	
Header file of Database.cpp	64
include/ Humidity.h	
Header file of Humidity.cpp	65
include/ Interface.h	
Header file of Interface.cpp	66
include/ LoginInterface.h	
Header file of LoginInterface.cpp	68
include/ main.h	
Header file of main.cpp	69
include/ Menu.h	
Header file of Menu.cpp	70
include/ MenuBar.h	
Header file of MenuBar.cpp	72

include/Moisture.h	
Header file of Moisture.cpp	73
include/NotFoundUserException.h	
Exception thrown when user not found in database	74
include/Sensor.h	
Header file of Sensor.cpp	76
include/Thermometer.h	
Header file of Thermometer.cpp	77
include/User.h	
Header file of User.cpp	78
include/UserConfig.h	
Header file of UserConfig.cpp	79
src/Admin.cpp	80
src/AirQuality.cpp	81
src/CameraBW.cpp	82
src/CameraRGB.cpp	82
src/CLDashboard.cpp	83
src/CLInterface.cpp	84
src/CLIUtils.cpp	85
src/CLLoginInterface.cpp	87
src/CLMenu.cpp	88
src/CLMenuBar.cpp	89
src/Dashboard.cpp	89
src/Database.cpp	90
src/Humidity.cpp	91
src/Interface.cpp	92
src/LoginInterface.cpp	93
src/main.cpp	94
src/Menu.cpp	95
src/MenuBar.cpp	96
src/Moisture.cpp	96
src/Sensor.cpp	97
src/Thermometer.cpp	98
src/User.cpp	99
src/UserConfig.cpp	100

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:

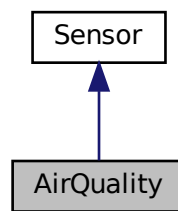
- include/[Admin.h](#)
- src/[Admin.cpp](#)

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

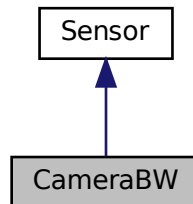
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

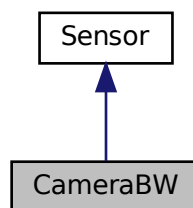
- include/[AirQuality.h](#)
- src/[AirQuality.cpp](#)

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

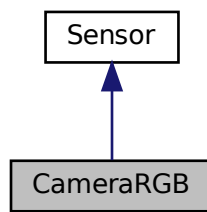
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

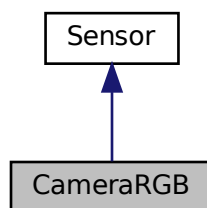
- [include/CameraBW.h](#)
- [src/CameraBW.cpp](#)

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

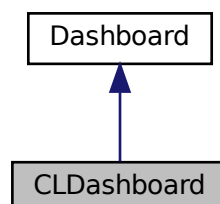
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

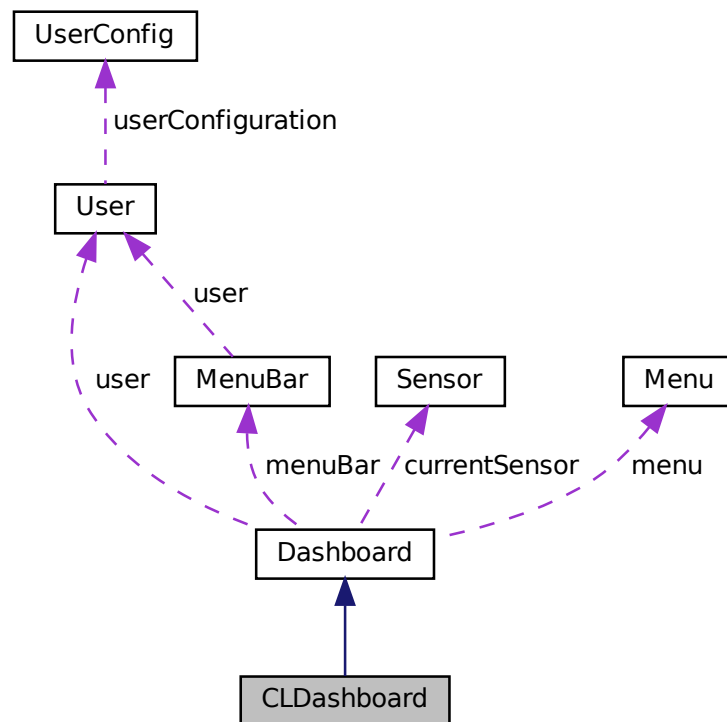
- [include/CameraRGB.h](#)
- [src/CameraRGB.cpp](#)

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="")
Displays the use of the command.
- void [errorCommand](#) (std::string command="")
Shows error message because the command not being found.
- void [permissionError](#) ()
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 = "" ) [protected]
```

Shows error message because the command not being found.

Parameters

<i>command</i>	Command input
----------------	---------------

4.5.2.3 helpCommand()

```
void CLDashboard::helpCommand (
```

```
std::string command = "" ) [protected]
```

Displays the use of the command.

Parameters

<i>command</i>	Command to display info about
----------------	-------------------------------

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 ( ) [protected]
```

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

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.

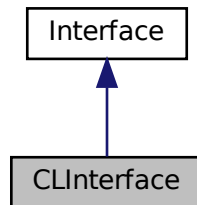
Implements [Dashboard](#).

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

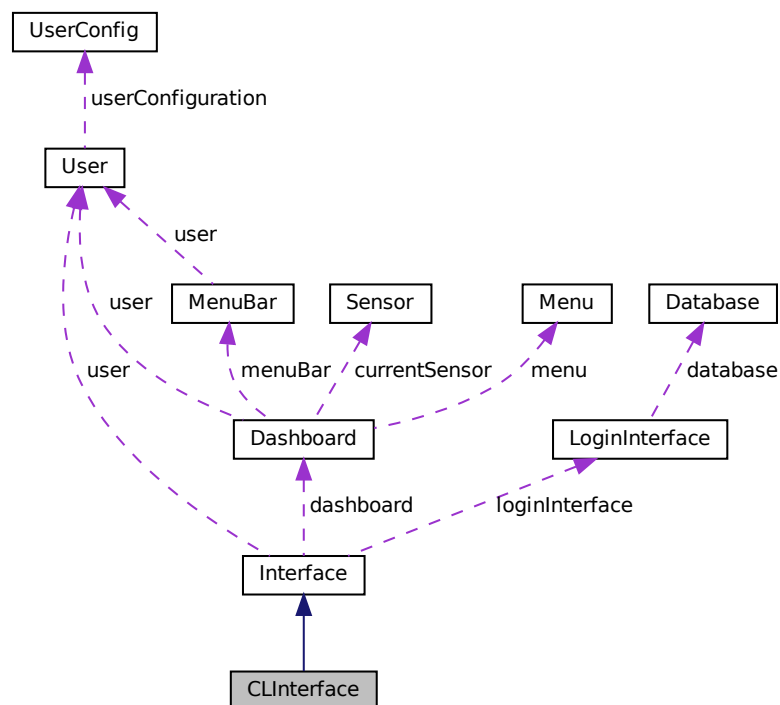
- [include/CLDashboard.h](#)
- [src/CLDashboard.cpp](#)

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

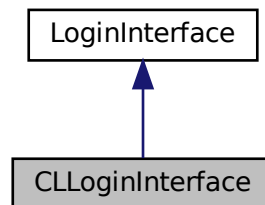
Implements [Interface](#).

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

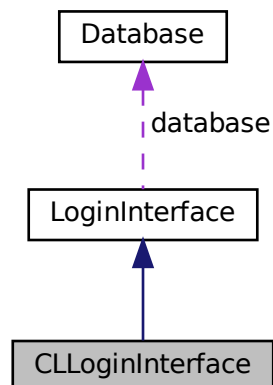
- [include/CLInterface.h](#)
- [src/CLInterface.cpp](#)

4.7 CLLoginInterface Class Reference

Inheritance diagram for CLLoginInterface:



Collaboration diagram for CLLoginInterface:



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 CLLoginInterface::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.

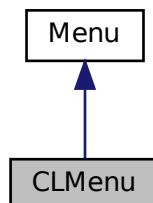
Implements [LoginInterface](#).

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

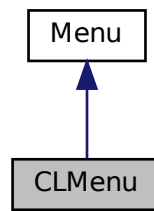
- include/CLLoginInterface.h
- src/CLLoginInterface.cpp

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.

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()` [1/2]

```
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() [2/2]

```
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

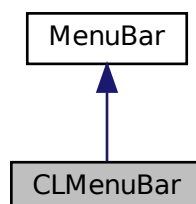
Implements [Menu](#).

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

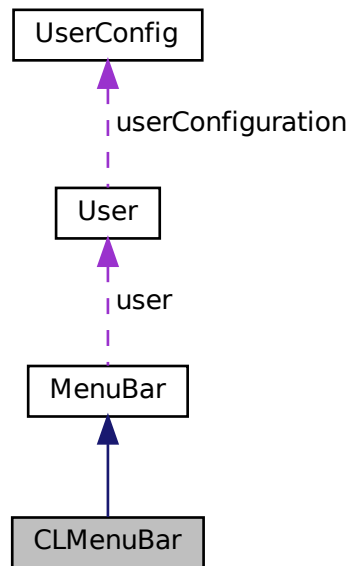
- include/[CLMenu.h](#)
- src/[CLMenu.cpp](#)

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.

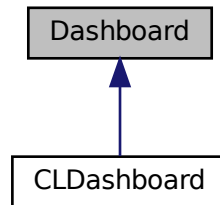
Implements [MenuBar](#).

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

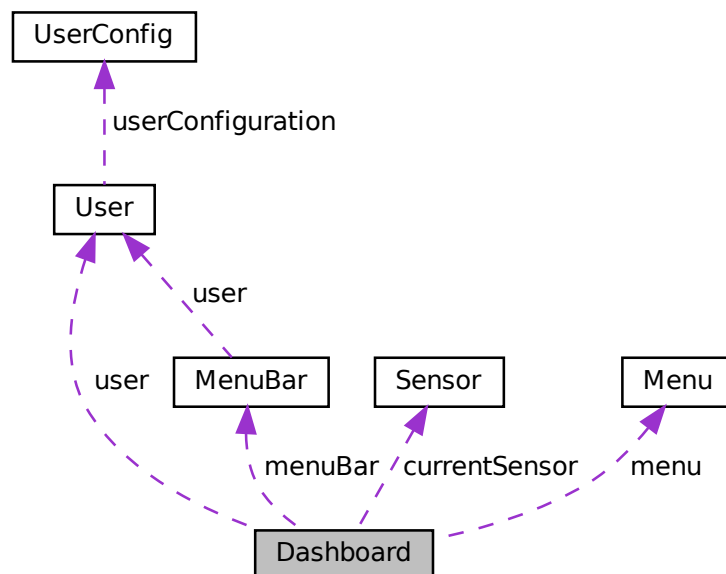
- include/[CLMenuBar.h](#)
- src/[CLMenuBar.cpp](#)

4.10 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 [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.
- 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`
- Vetor 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.*
- bool `allowedToExit`

4.10.1 Member Function Documentation

4.10.1.1 addNewSensor()

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

Creates the new sensor and calls addToMainMenu.

Parameters

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

See also

[addToMainMenu](#)

4.10.1.2 addToMainMenu() [1/2]

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

Adds all the current sensors to the dashboard.

Note

Only called at the start of the program

4.10.1.3 addToMainMenu() [2/2]

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

Adds a sensor to the dashboard.

Parameters

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

4.10.1.4 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

4.10.1.5 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

4.10.1.6 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

4.10.1.7 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*

4.10.1.8 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](#)

4.10.1.9 exit()

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

Exits the dashboard and finishes the program.

See also

[cleanSensor](#)

4.10.1.10 logout()

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

Exits the dashboard and goes back to the login screen.

See also

[cleanSensor](#)

4.10.1.11 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)
----------	--

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

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

4.11 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)

4.11.1 Member Function Documentation

4.11.1.1 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

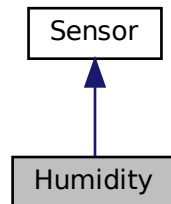
<i>employeeNumber</i>	
<i>NIF</i>	
<i>currentUser</i>	

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

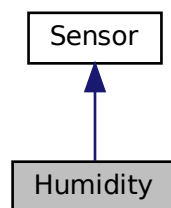
- include/[Database.h](#)
- src/[Database.cpp](#)

4.12 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

4.12.1 Constructor & Destructor Documentation

4.12.1.1 Humidity()

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

Create a new [Humidity](#) object.

Parameters

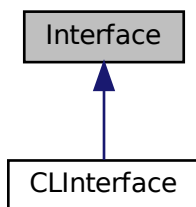
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

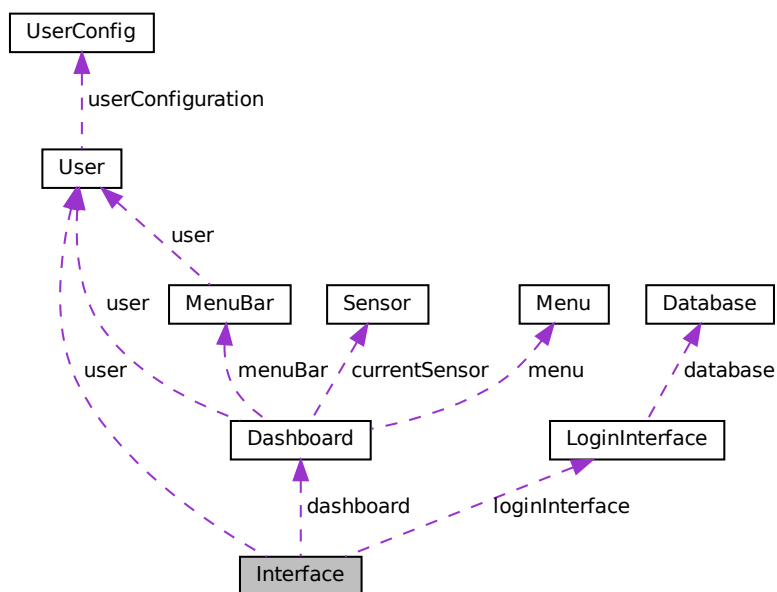
- [include/Humidity.h](#)
- [src/Humidity.cpp](#)

4.13 Interface Class Reference

Inheritance diagram for Interface:



Collaboration diagram for Interface:



Public Member Functions

- 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`

4.13.1 Member Function Documentation

4.13.1.1 `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

4.13.1.2 `loadMenu()`

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

Creates and loads the dashboard.

Returns

true = exit
false = login again

4.13.1.3 login() [1/2]

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

Virtual interface for the login method.

Parameters

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

Implemented in [CLInterface](#).

4.13.1.4 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

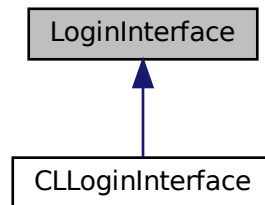
This method is used when the user executes the main with the NIF and employee number

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

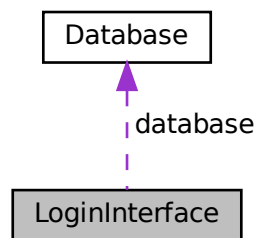
- [include/Interface.h](#)
- [src/Interface.cpp](#)

4.14 LoginInterface Class Reference

Inheritance diagram for LoginInterface:



Collaboration diagram for LoginInterface:



Public Member Functions

- 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

4.14.1 Member Function Documentation

4.14.1.1 checkUser()

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

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

Parameters

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

4.14.1.2 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

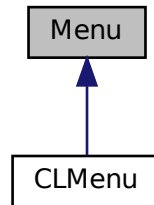
LoginInterface* New login interface instance

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

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

4.15 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

Static Public Member Functions

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

4.15.1 Member Function Documentation

4.15.1.1 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

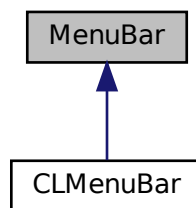
[Menu](#)* New menu instance

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

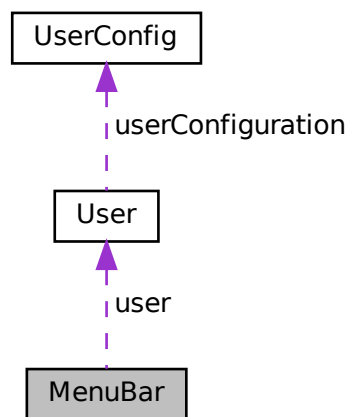
- [include/Menu.h](#)
- [src/Menu.cpp](#)

4.16 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**

4.16.1 Member Function Documentation

4.16.1.1 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

4.16.1.2 setCurrentMenu()

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

Sets the current menu.

Parameters

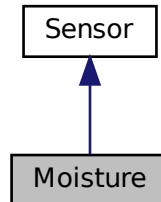
<i>currentMenu</i>	
--------------------	--

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

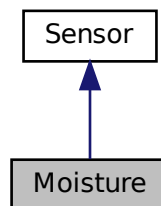
- include/[MenuBar.h](#)
- src/[MenuBar.cpp](#)

4.17 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

4.17.1 Constructor & Destructor Documentation

4.17.1.1 Moisture()

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

Create a new [Moisture](#) object.

Parameters

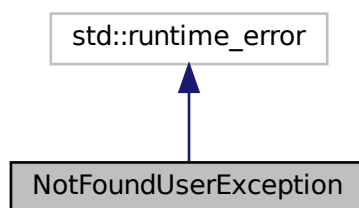
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

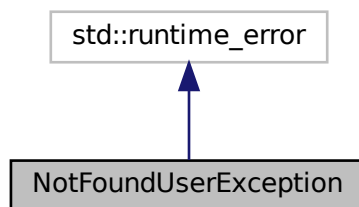
- [include/Moisture.h](#)
- [src/Moisture.cpp](#)

4.18 NotFoundUserException Class Reference

Inheritance diagram for NotFoundUserException:



Collaboration diagram for NotFoundUserException:

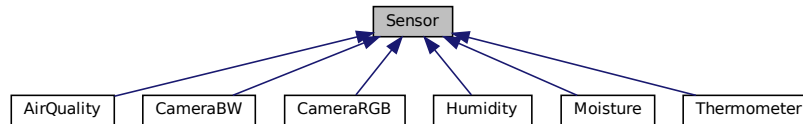


The documentation for this class was generated from the following file:

- [include/NotFoundUserException.h](#)

4.19 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**

4.19.1 Constructor & Destructor Documentation

4.19.1.1 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

4.19.2 Member Function Documentation

4.19.2.1 Create()

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

Creates an instance of the sensor type.

Parameters

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

Returns

Sensor*

4.19.2.2 requestData()

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

Request data from sensor.

Returns

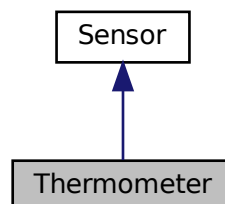
std::vector<int>

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

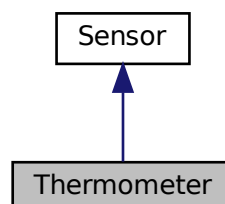
- include/[Sensor.h](#)
- src/[Sensor.cpp](#)

4.20 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

4.20.1 Constructor & Destructor Documentation

4.20.1.1 Thermometer()

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

Create a new [Thermometer](#) object.

Parameters

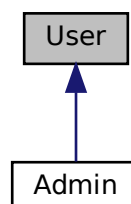
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

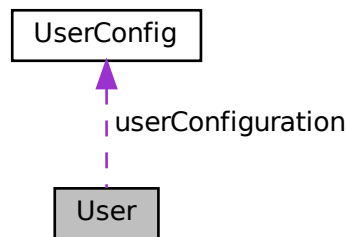
- include/[Thermometer.h](#)
- src/[Thermometer.cpp](#)

4.21 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)
- [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 &)`

4.21.1 Constructor & Destructor Documentation

4.21.1.1 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>	

4.21.2 Member Function Documentation

4.21.2.1 addTimestamp()

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

Set the timestamp.

4.21.2.2 getName()

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

Returns the user name.

Returns

`std::string User name`

4.21.2.3 `getTimestamp()`

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

Returns the timestamp.

Returns

std::string Timestamp

4.21.2.4 `hasAdminPermission()`

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

Returns the user permissions.

Returns

true = has admin permissions

false = does not have admin permissions

4.21.2.5 `setEmployeeNumber()`

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

Set the user employee number.

Parameters

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

4.21.2.6 `setNIF()`

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

Set the user NIF.

Parameters

$N \leftrightarrow$	
IF	

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

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

4.22 UserConfig Class Reference

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::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)
- std::array< int, 3 > * **getGraphicColor** ()
- void **setGraphicColor** (std::array< int, 3 > newGraphicColor)

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

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

Chapter 5

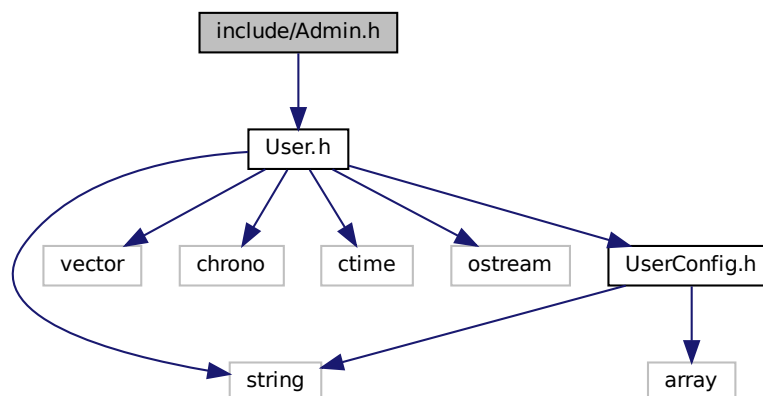
File Documentation

5.1 include/Admin.h File Reference

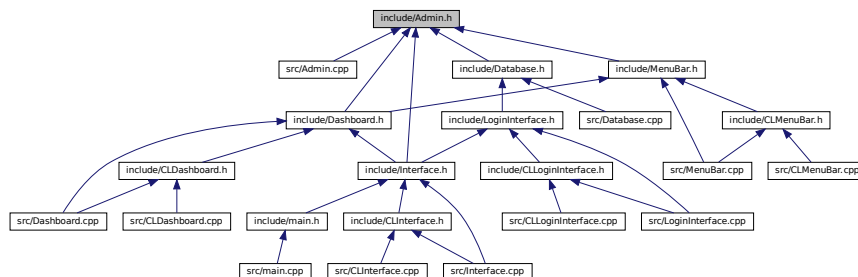
Header file of [Admin.cpp](#).

```
#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

Copyright

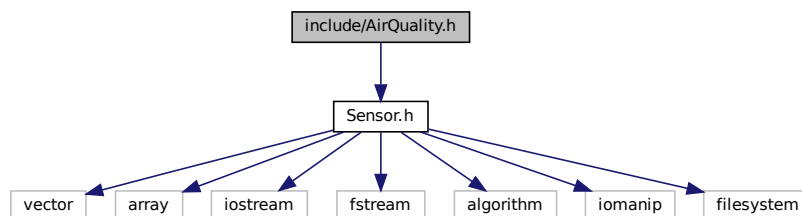
Copyright (c) 2022

5.2 include/AirQuality.h File Reference

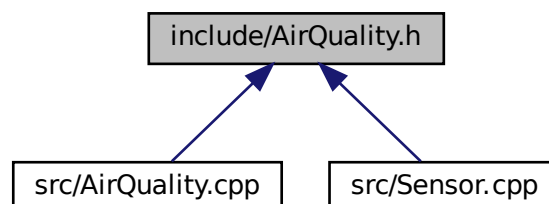
Header file of [AirQuality.cpp](#).

```
#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

Copyright

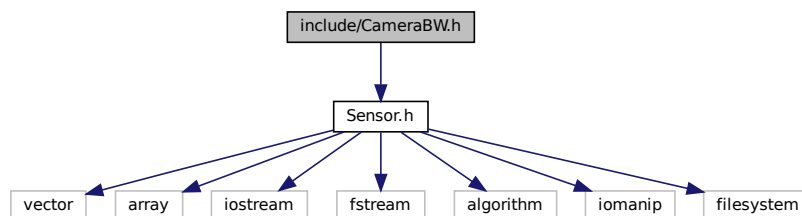
Copyright (c) 2022

5.3 include/CameraBW.h File Reference

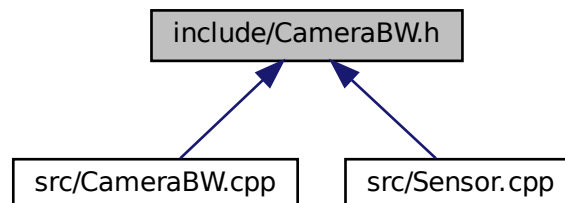
Header file of [CameraBW.cpp](#).

```
#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

Copyright

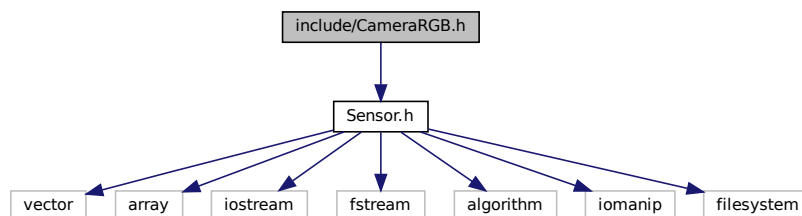
Copyright (c) 2022

5.4 include/CameraRGB.h File Reference

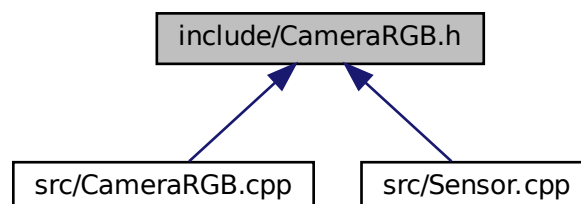
Header file of [CameraRGB.cpp](#).

```
#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

2022-11-23

Copyright

Copyright (c) 2022

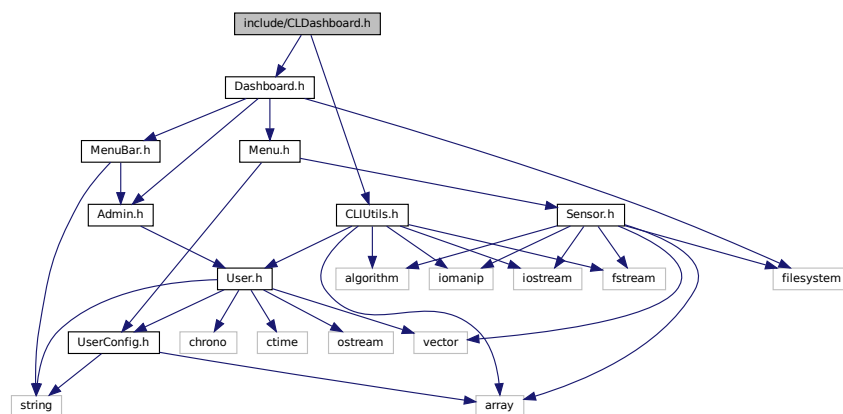
5.5 include/CLDashboard.h File Reference

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

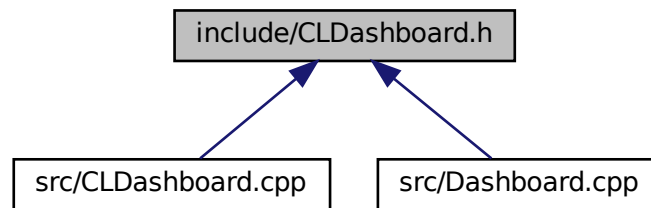
```
#include "Dashboard.h"
```

```
#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](#).

Author

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

Version

1.0

Date

2022-11-23

Copyright

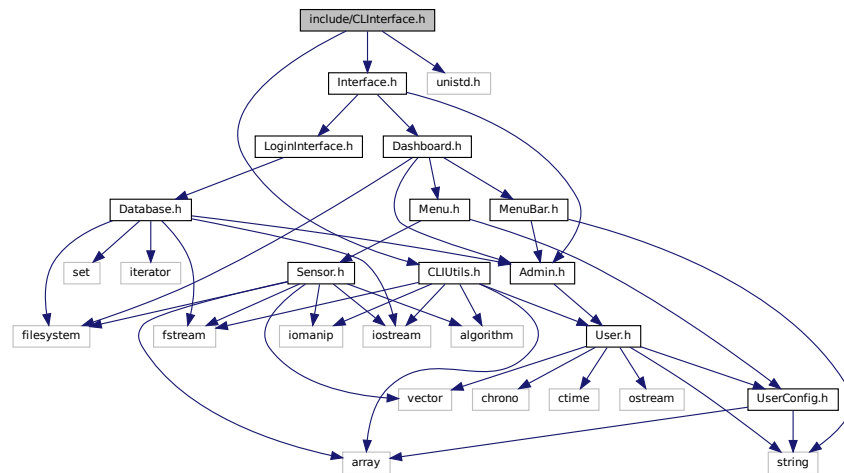
Copyright (c) 2022

5.6 include/CLInterface.h File Reference

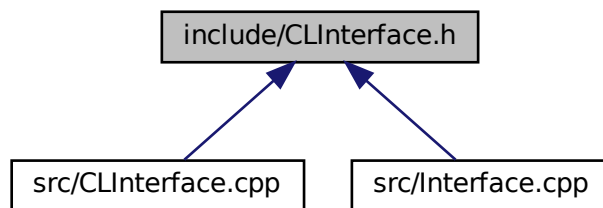
Header file of [CLInterface.cpp](#).

```
#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

Copyright

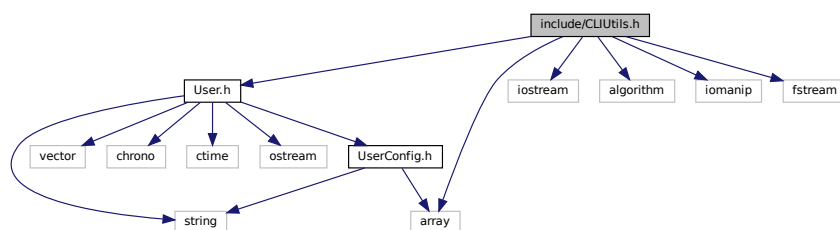
Copyright (c) 2022

5.7 include/CLIUtils.h File Reference

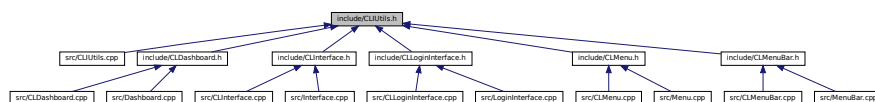
Header file of [CLIUtils.cpp](#).

```
#include "User.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)
Print the contents of the file in the center.
- 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** (int)
- std::vector< std::string > **newCommand** (**User** &user, std::string="")
- void **clearCustomTerminal** (int)
- 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

Copyright

Copyright (c) 2022

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 )
```

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

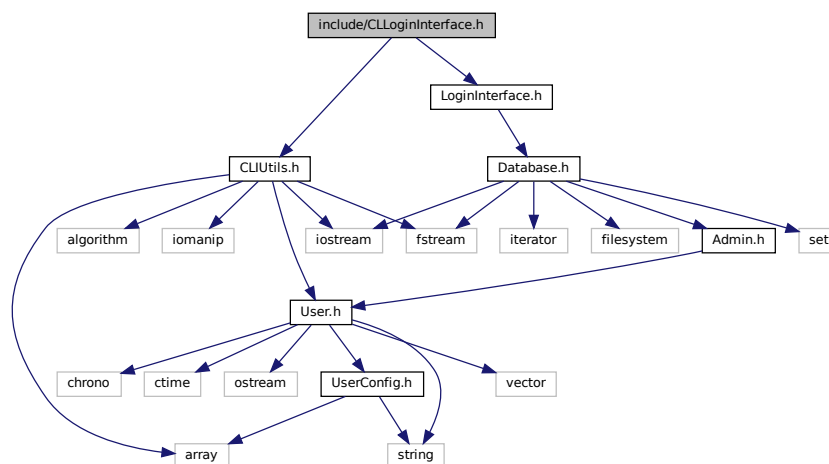
<i>toPrint</i>	
<i>frontColor</i>	
<i>backColor</i>	

5.8 include/CLLoginInterface.h File Reference

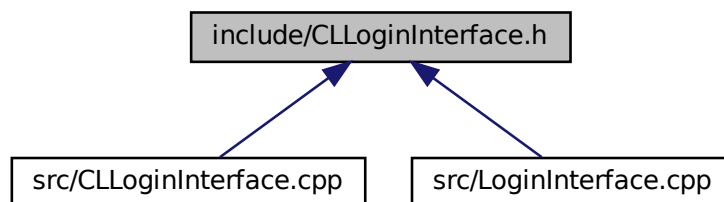
Header file of [CLLoginInterface.cpp](#).

```
#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

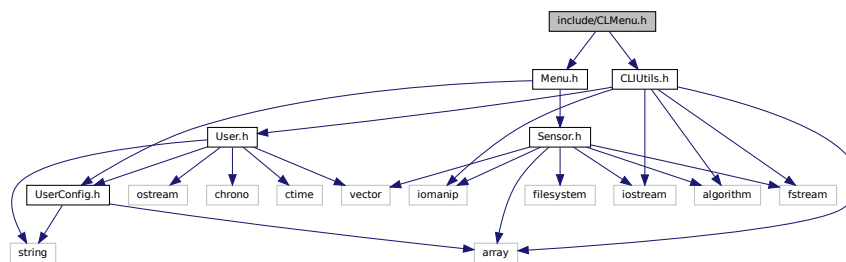
Copyright

Copyright (c) 2022

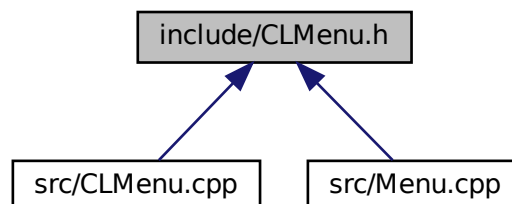
5.9 include/CLMenu.h File Reference

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

Copyright

Copyright (c) 2022

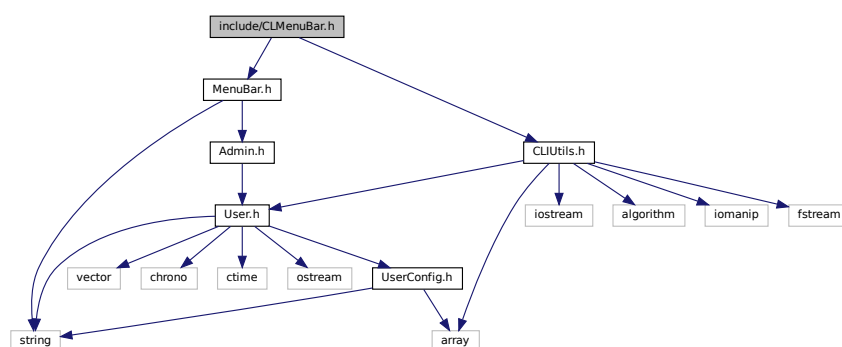
5.10 include/CLMenuBar.h File Reference

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

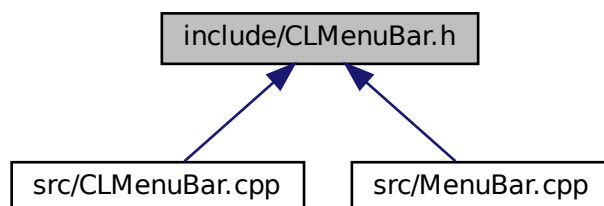
```
#include "MenuBar.h"
```

```
#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

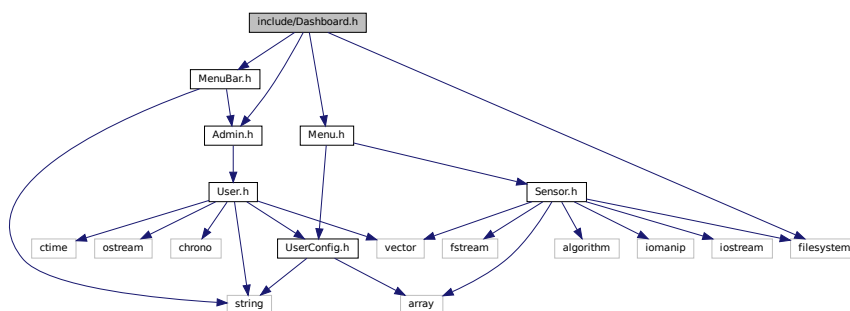
Copyright (c) 2022

5.11 include/Dashboard.h File Reference

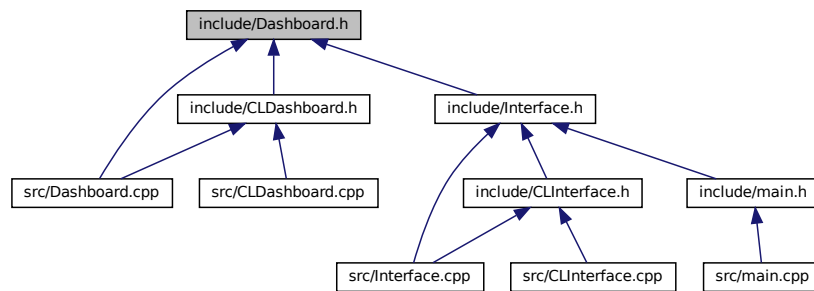
Header file of [Dashboard.cpp](#).

```
#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](#)

5.11.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

Copyright

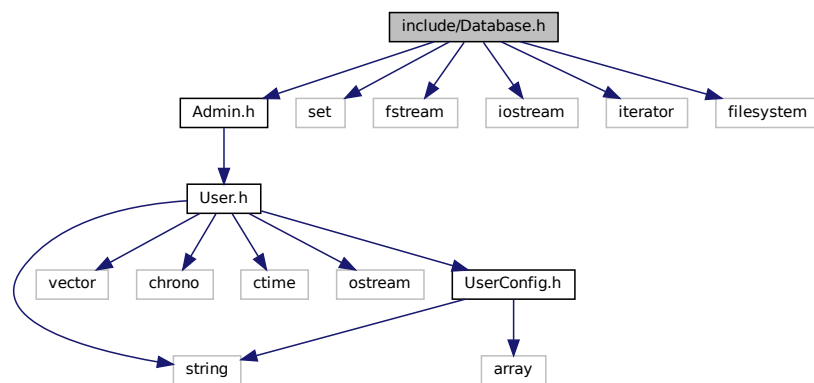
Copyright (c) 2022

5.12 include/Database.h File Reference

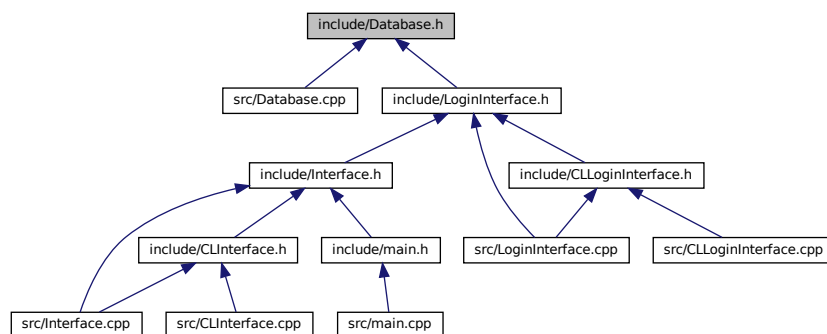
Header file of [Database.cpp](#).

```
#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](#)

5.12.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

Copyright

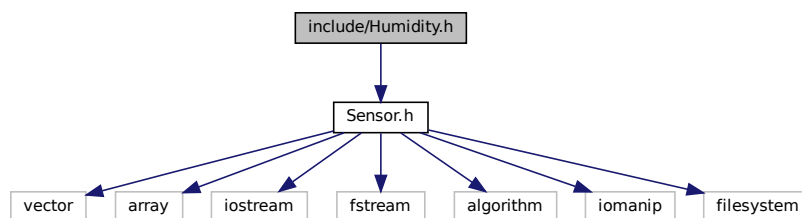
Copyright (c) 2022

5.13 include/Humidity.h File Reference

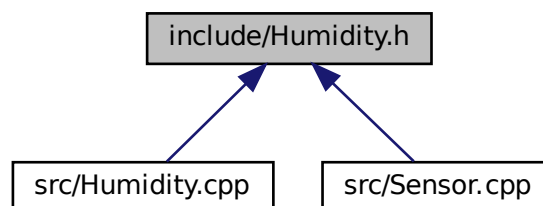
Header file of [Humidity.cpp](#).

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

Include dependency graph for Humidity.h:



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



Classes

- class [Humidity](#)

5.13.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

Copyright

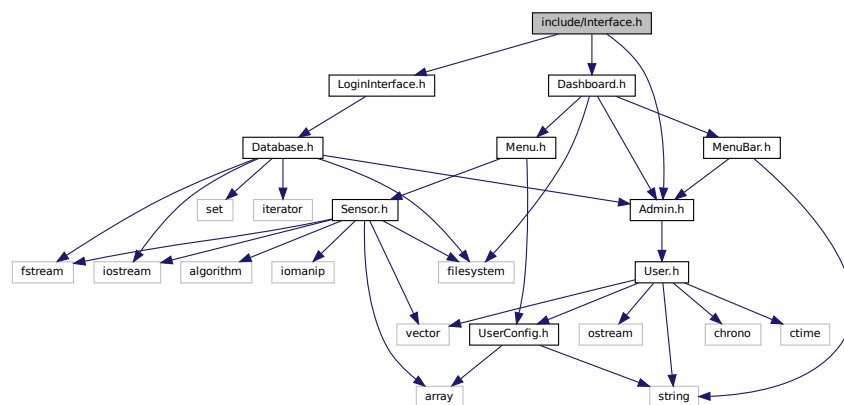
Copyright (c) 2022

5.14 include/Interface.h File Reference

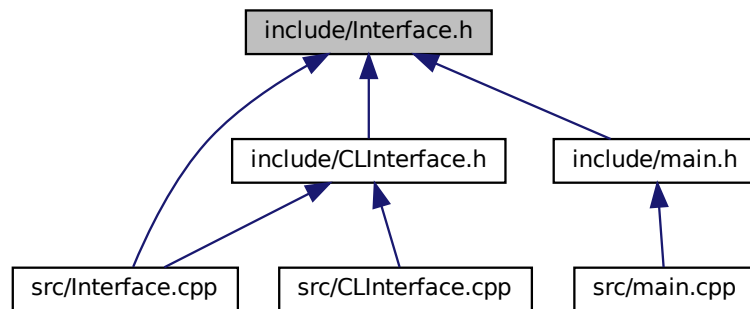
Header file of [Interface.cpp](#).

```
#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](#)

5.14.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

Copyright

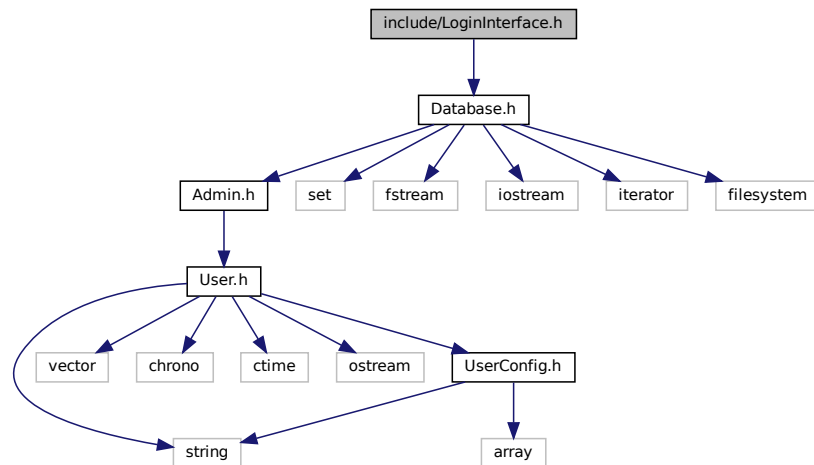
Copyright (c) 2022

5.15 include/LoginInterface.h File Reference

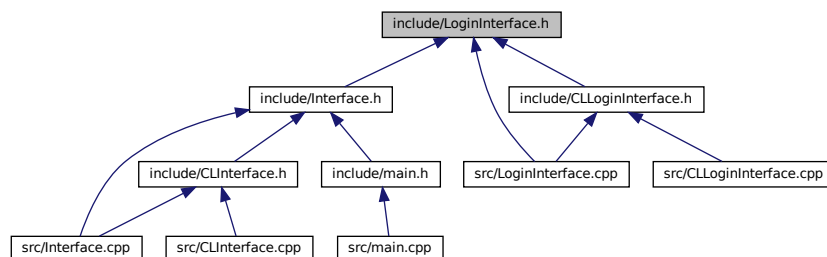
Header file of [LoginInterface.cpp](#).

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

Include dependency graph for LoginInterface.h:



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



Classes

- class [LoginInterface](#)

5.15.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

Copyright

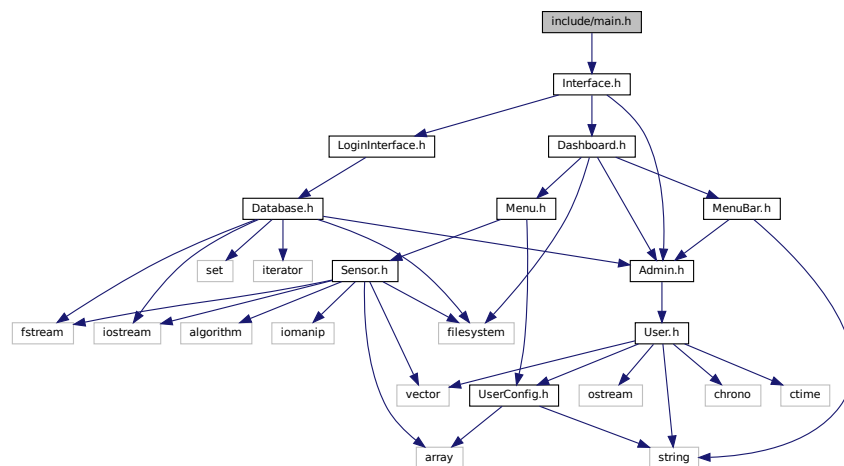
Copyright (c) 2022

5.16 include/main.h File Reference

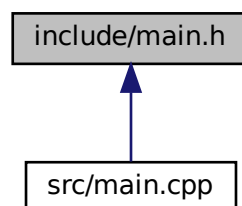
Header file of [main.cpp](#).

```
#include "Interface.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[])

5.16.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

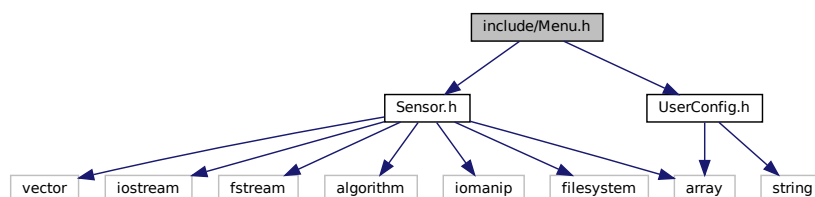
Copyright

Copyright (c) 2022

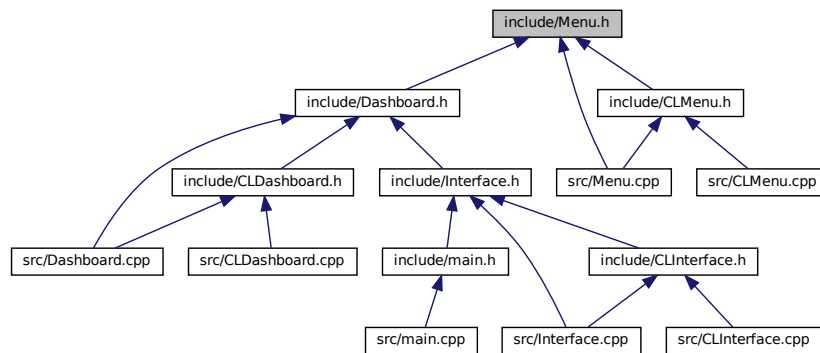
5.17 include/Menu.h File Reference

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

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



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



Classes

- class [Menu](#)

5.17.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

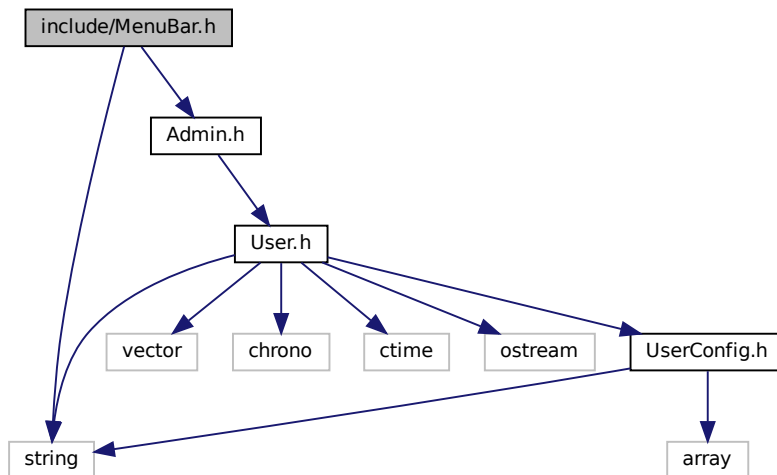
Copyright

Copyright (c) 2022

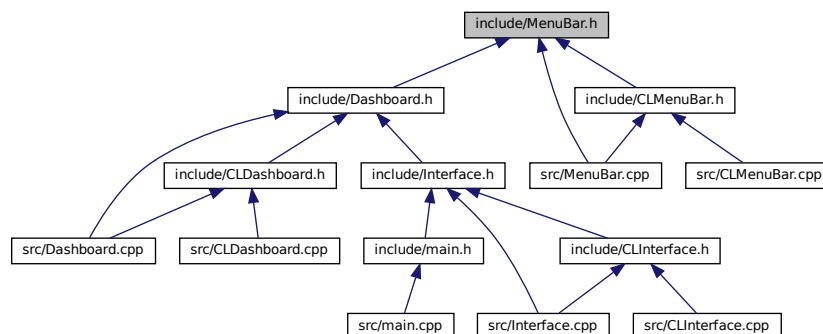
5.18 include/MenuBar.h File Reference

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](#)

5.18.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

Copyright

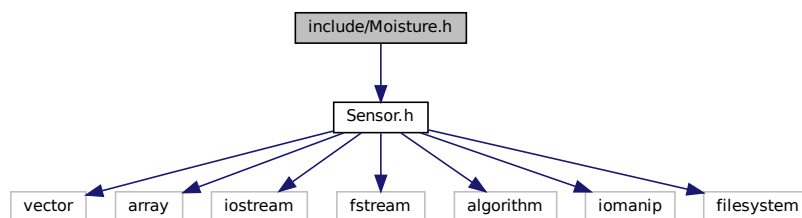
Copyright (c) 2022

5.19 include/Moisture.h File Reference

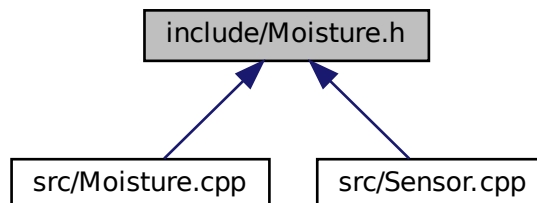
Header file of [Moisture.cpp](#).

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

Include dependency graph for Moisture.h:



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



Classes

- class [Moisture](#)

5.19.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

Copyright

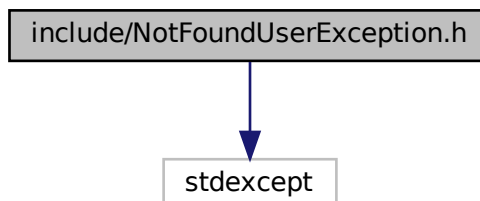
Copyright (c) 2022

5.20 include/NotFoundUserException.h File Reference

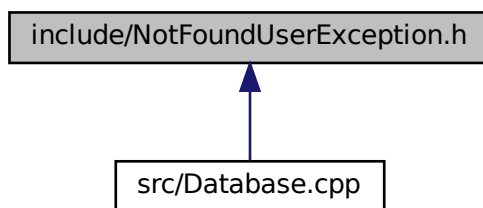
Exception thrown when user not found in database.

```
#include <stdexcept>
```

Include dependency graph for NotFoundUserException.h:



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



Classes

- class [NotFoundUserException](#)

5.20.1 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

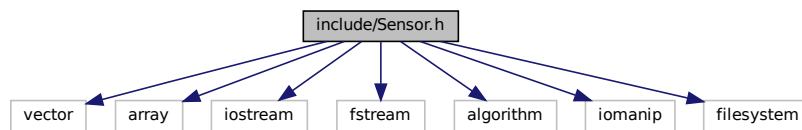
Copyright (c) 2022

5.21 include/Sensor.h File Reference

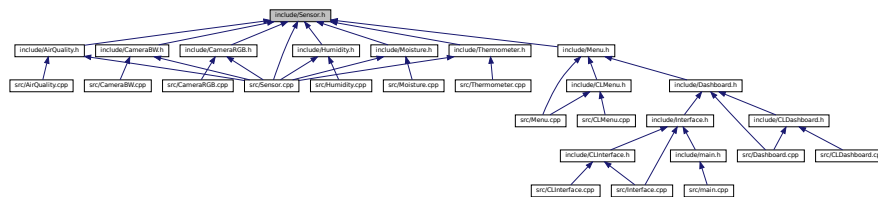
Header file of [Sensor.cpp](#).

```
#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](#)

5.21.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

Copyright

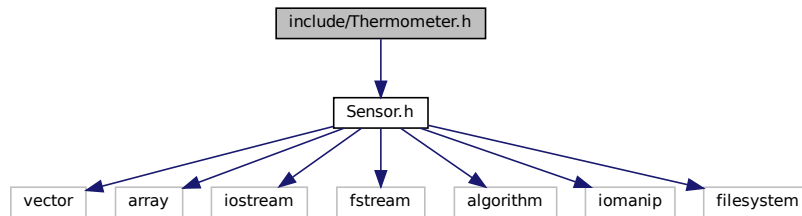
Copyright (c) 2022

5.22 include/Thermometer.h File Reference

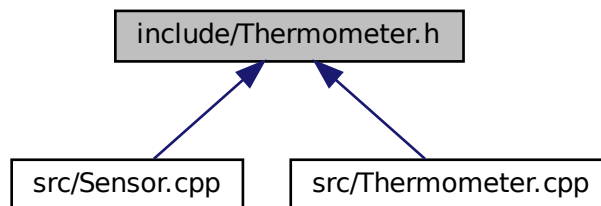
Header file of [Thermometer.cpp](#).

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

Include dependency graph for Thermometer.h:



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



Classes

- class [Thermometer](#)

5.22.1 Detailed Description

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

Author

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

Version

1.0

Date

2022-11-23

Copyright

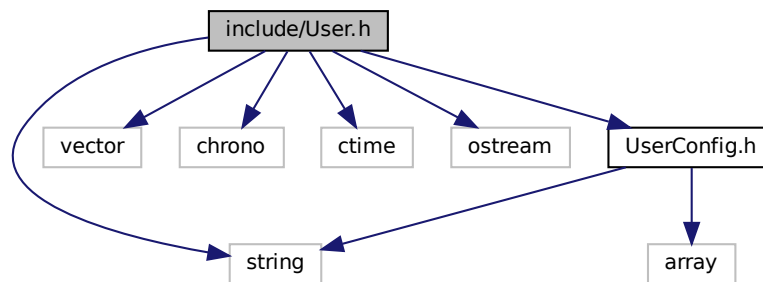
Copyright (c) 2022

5.23 include/User.h File Reference

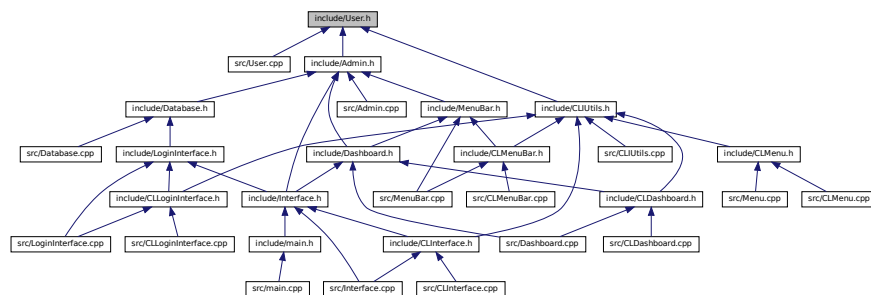
Header file of [User.cpp](#).

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

Include dependency graph for User.h:



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



Classes

- class [User](#)

5.23.1 Detailed Description

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

Classes

- class [UserConfig](#)

5.24.1 Detailed Description

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

Author

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

Version

0.1

Date

2022-12-22

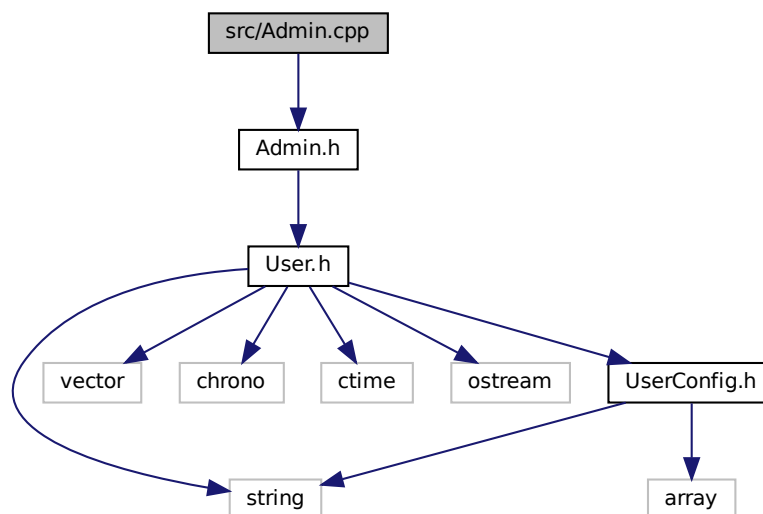
Copyright

Copyright (c) 2022

5.25 src/Admin.cpp File Reference

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

Include dependency graph for Admin.cpp:



5.25.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

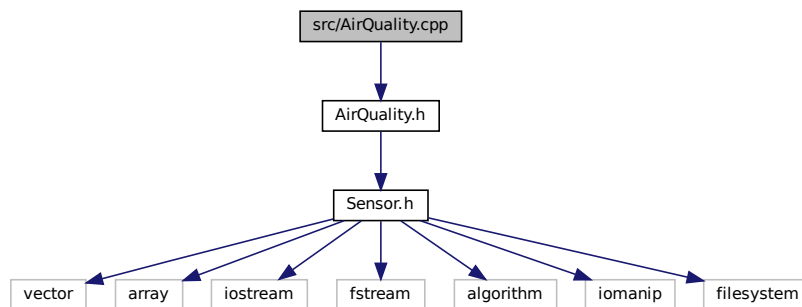
Copyright

Copyright (c) 2022

5.26 src/AirQuality.cpp File Reference

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

Include dependency graph for AirQuality.cpp:



5.26.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

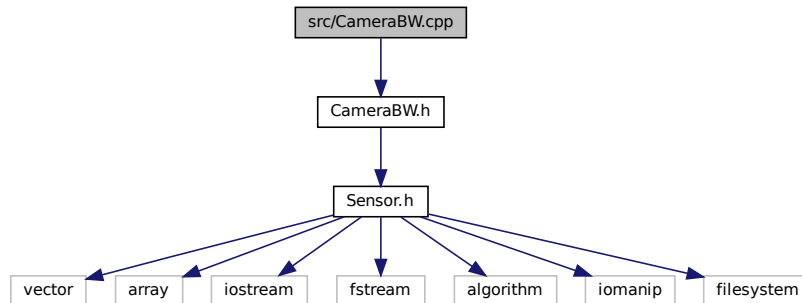
Copyright

Copyright (c) 2022

5.27 src/CameraBW.cpp File Reference

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

Include dependency graph for CameraBW.cpp:



5.27.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

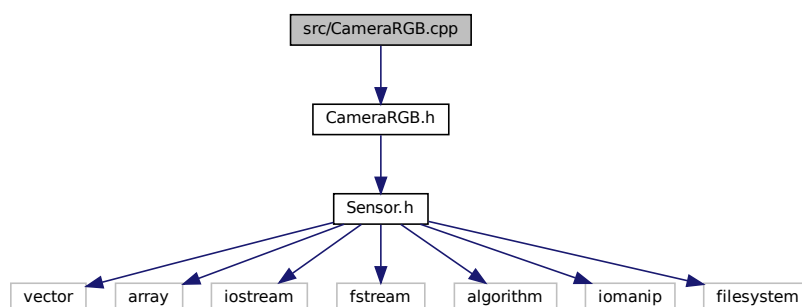
Copyright

Copyright (c) 2022

5.28 src/CameraRGB.cpp File Reference

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

Include dependency graph for CameraRGB.cpp:



5.28.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

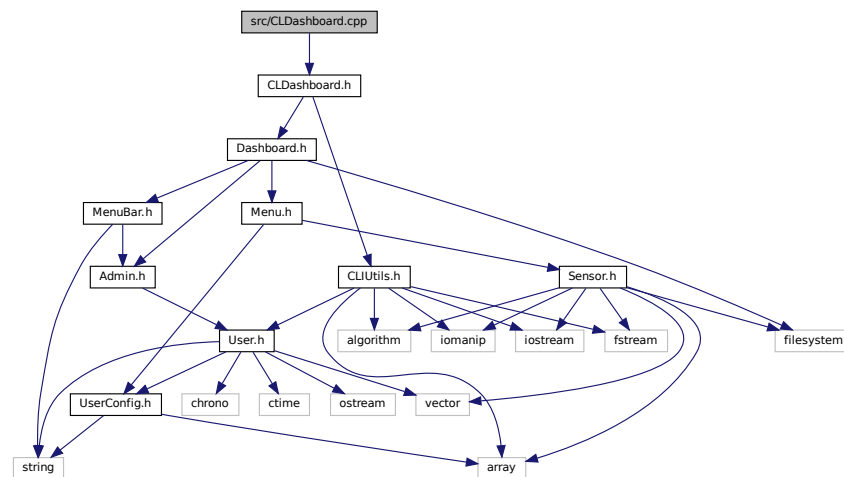
Copyright

Copyright (c) 2022

5.29 src/CLDashboard.cpp File Reference

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

Include dependency graph for CLDashboard.cpp:



5.29.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

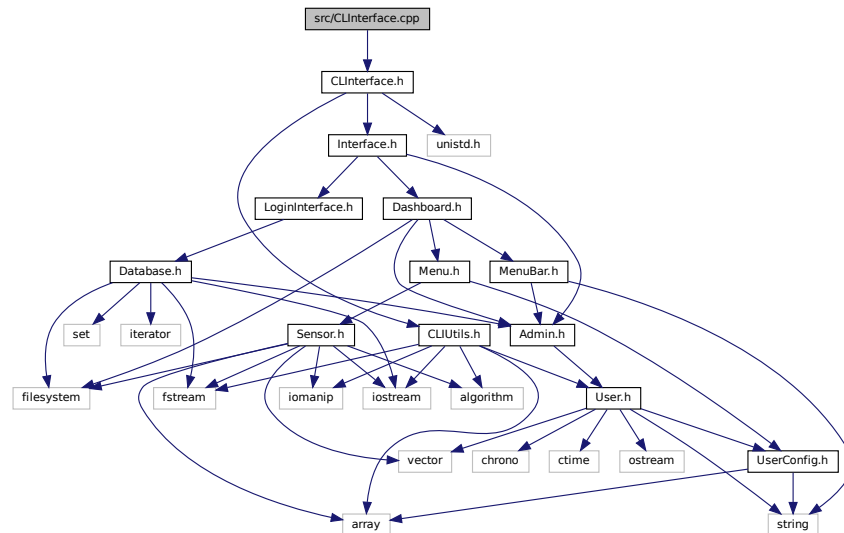
Copyright

Copyright (c) 2022

5.30 src/CLInterface.cpp File Reference

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

Include dependency graph for CLInterface.cpp:



5.30.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

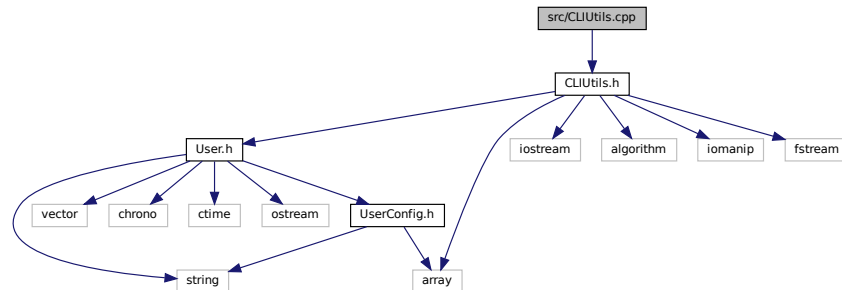
Copyright

Copyright (c) 2022

5.31 src/CLIUtils.cpp File Reference

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

Include dependency graph for CLIUtils.cpp:



Functions

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

Print the contents of the file in the center.
- 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** (int terminalSize)
- void **clearCustomTerminal** (int terminalSize)
- void **moveCursor** (int posX, int posY)
- 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**

5.31.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

Copyright

Copyright (c) 2022

5.31.2 Function Documentation

5.31.2.1 `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>	

5.31.2.2 `printCenterFromFile()`

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

Print the contents of the file in the center.

Parameters

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

5.31.2.3 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.

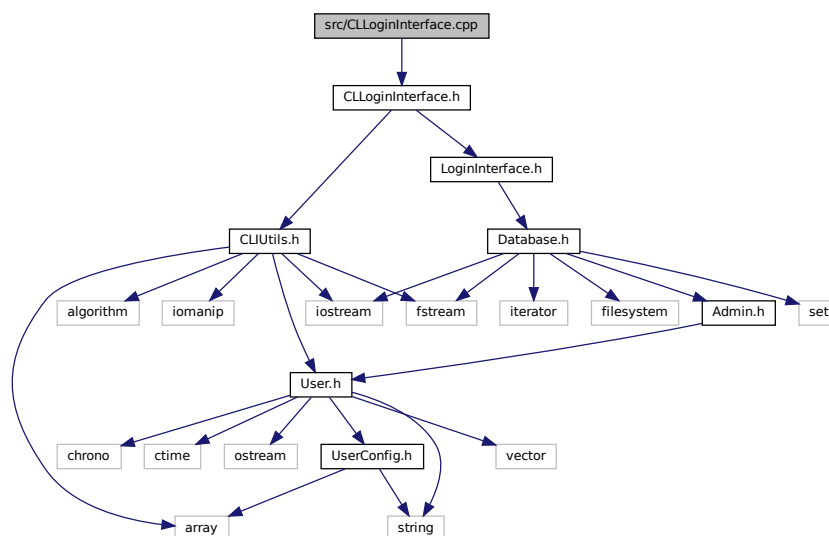
Parameters

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

5.32 src/CLLoginInterface.cpp File Reference

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

Include dependency graph for CLLoginInterface.cpp:



5.32.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

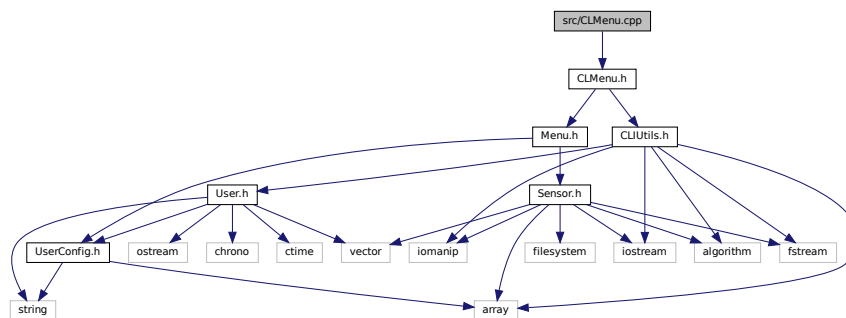
Copyright

Copyright (c) 2022

5.33 src/CLMenu.cpp File Reference

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

Include dependency graph for CLMenu.cpp:



5.33.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

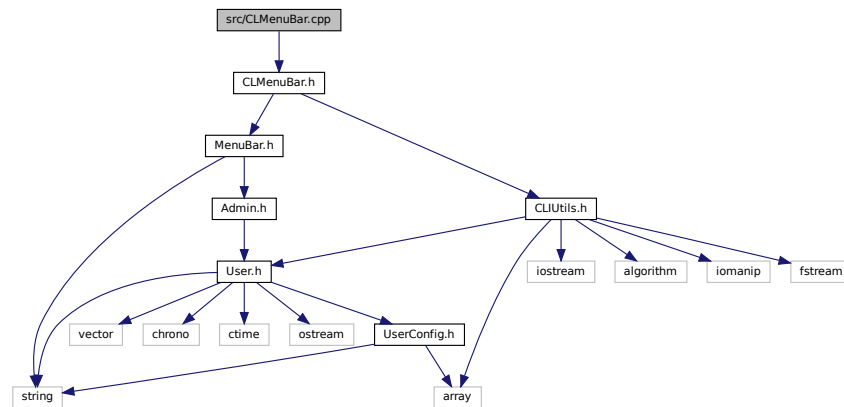
Copyright

Copyright (c) 2022

5.34 src/CLMenuBar.cpp File Reference

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

Include dependency graph for CLMenuBar.cpp:



5.34.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

Copyright

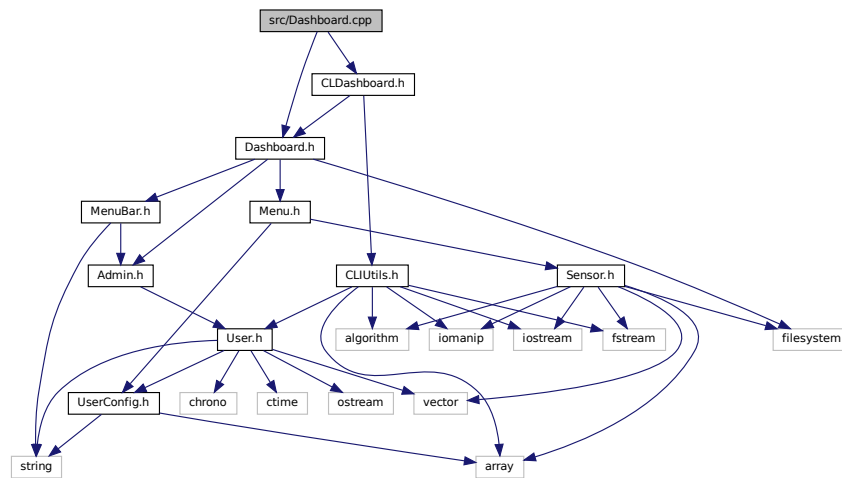
Copyright (c) 2022

5.35 src/Dashboard.cpp File Reference

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

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

Include dependency graph for Dashboard.cpp:



5.35.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

Copyright

Copyright (c) 2022

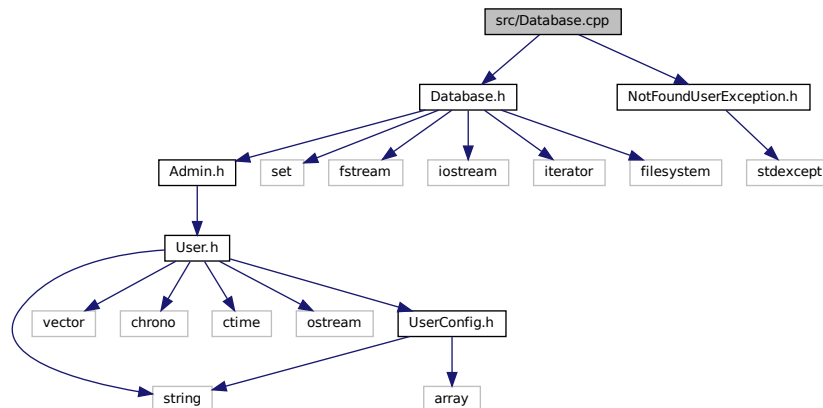
5.36 src/Database.cpp File Reference

```

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

```

Include dependency graph for Database.cpp:



5.36.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

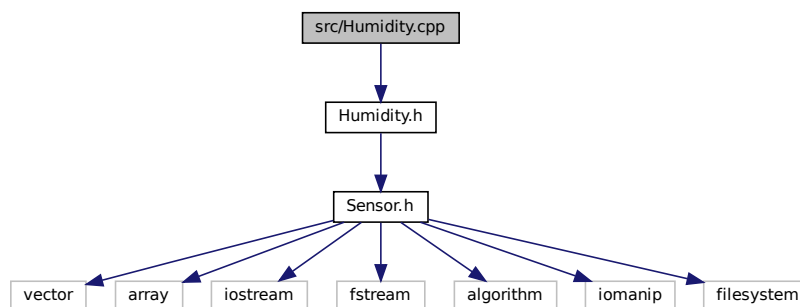
Copyright

Copyright (c) 2022

5.37 src/Humidity.cpp File Reference

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

Include dependency graph for Humidity.cpp:



5.37.1 Detailed Description

Author

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

Version

1.0

Date

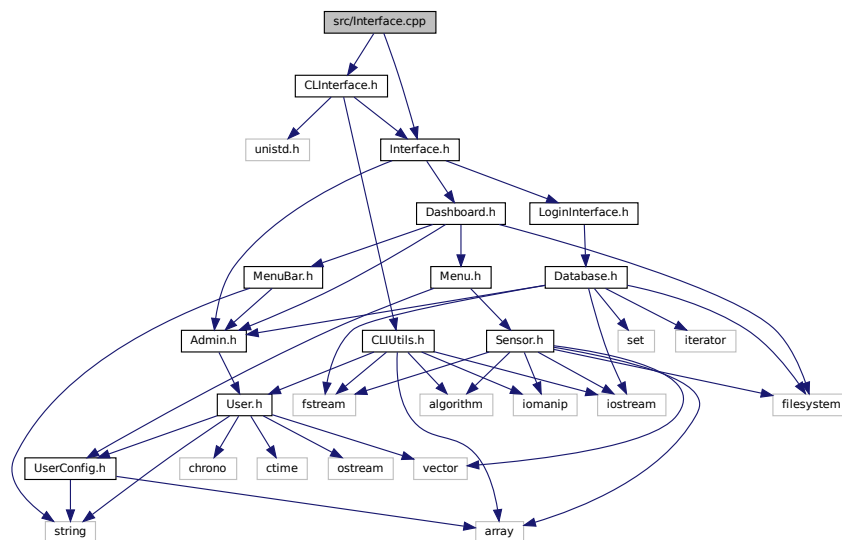
2022-11-23

Copyright

Copyright (c) 2022

5.38 src/Interface.cpp File Reference

```
#include "Interface.h"
#include "CLIInterface.h"
Include dependency graph for Interface.cpp:
```



5.38.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

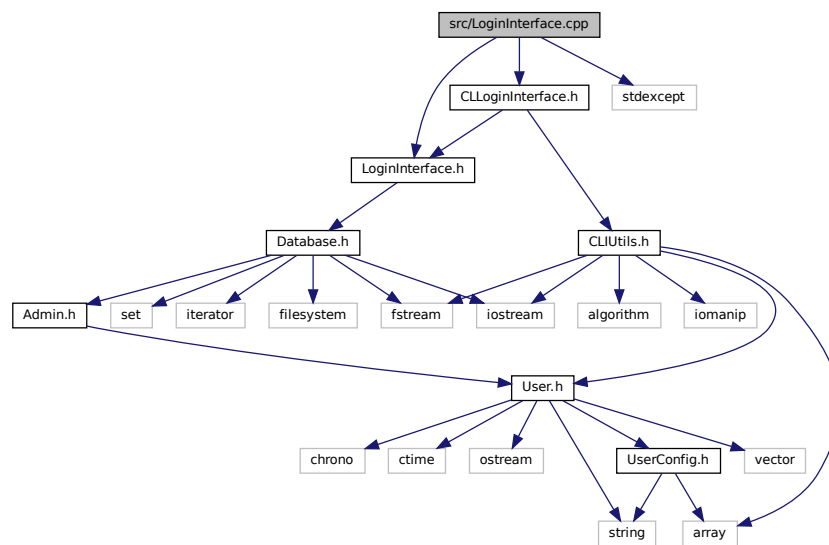
Copyright

Copyright (c) 2022

5.39 src/LoginInterface.cpp File Reference

```
#include "LoginInterface.h"  
#include "CLLoginInterface.h"  
#include <stdexcept>
```

Include dependency graph for LoginInterface.cpp:



5.40.1 Detailed Description

Author

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

Version

1.0

Date

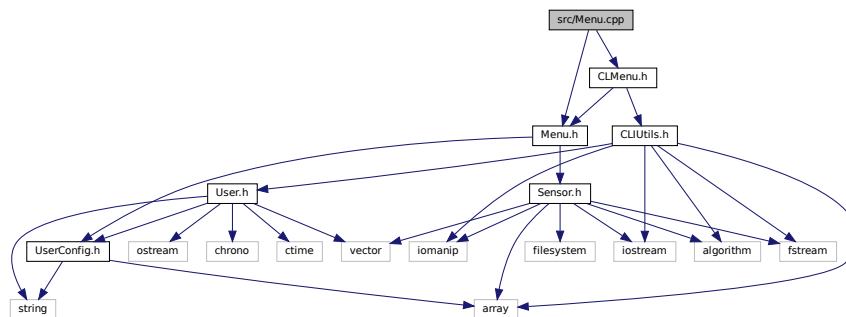
2022-11-23

Copyright

Copyright (c) 2022

5.41 src/Menu.cpp File Reference

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



5.41.1 Detailed Description

Author

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

Version

1.0

Date

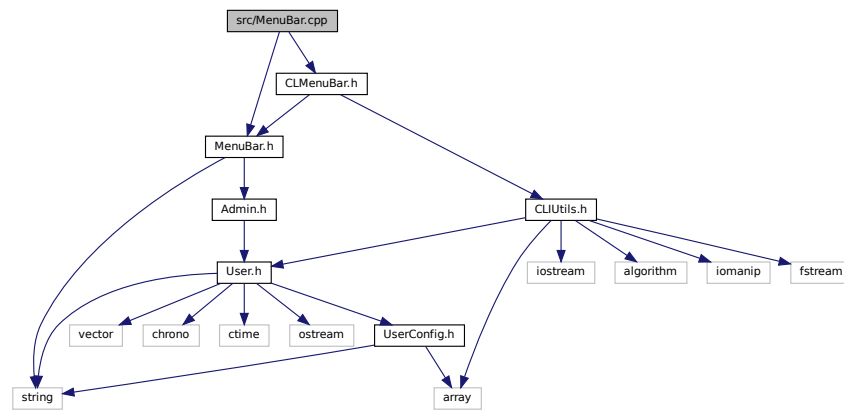
2022-11-23

Copyright

Copyright (c) 2022

5.42 src/MenuBar.cpp File Reference

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



5.42.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

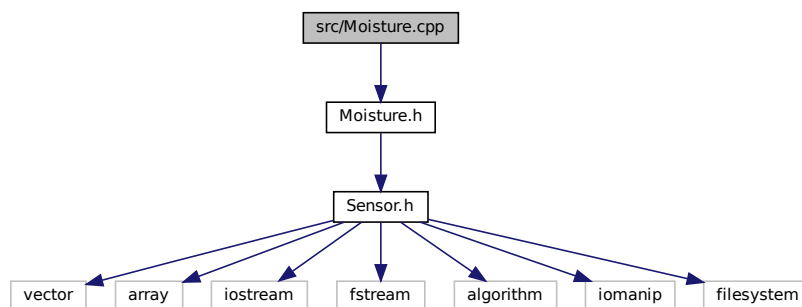
Copyright

Copyright (c) 2022

5.43 src/Moisture.cpp File Reference

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


Include dependency graph for Moisture.cpp:



5.43.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

Copyright

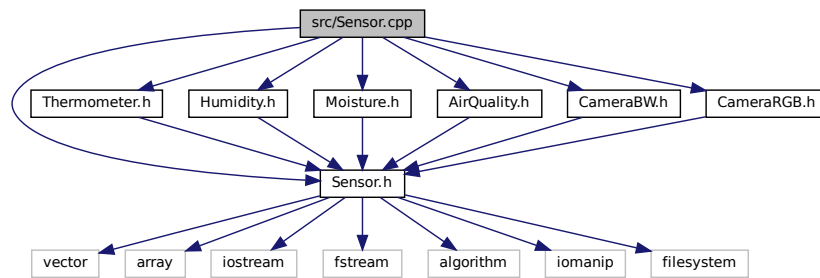
Copyright (c) 2022

5.44 src/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:



5.44.1 Detailed Description

Author

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

Version

1.0

Date

2022-11-23

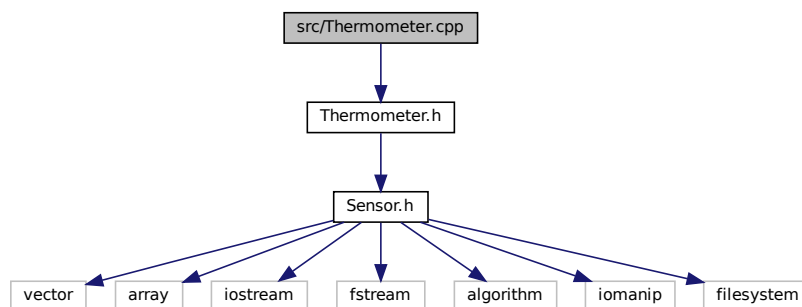
Copyright

Copyright (c) 2022

5.45 src/Thermometer.cpp File Reference

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

Include dependency graph for Thermometer.cpp:



5.45.1 Detailed Description

Author

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

Version

1.0

Date

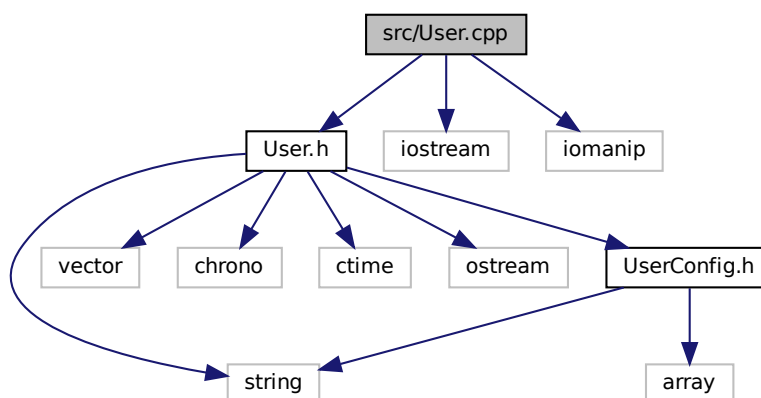
2022-11-23

Copyright

Copyright (c) 2022

5.46 src/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)`

5.46.1 Detailed Description

Author

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

Version

2.0

Date

2022-11-23

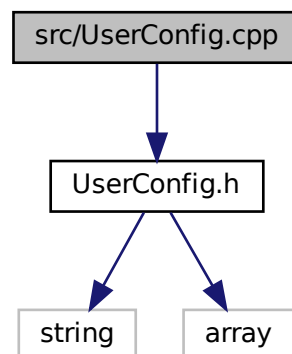
Copyright

Copyright (c) 2022

5.47 src/UserConfig.cpp File Reference

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

Include dependency graph for UserConfig.cpp:



5.47.1 Detailed Description

Author

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

Version

0.1

Date

2022-12-22

Copyright

Copyright (c) 2022

Index

- addNewSensor
 - Dashboard, 25
- addTimestamp
 - User, 46
- addToMainMenu
 - Dashboard, 26
- Admin, 7
 - Admin, 8
- AirQuality, 8
 - AirQuality, 9
- askEmployeeNumber
 - CLLoginInterface, 19
- askNIF
 - CLLoginInterface, 19
- CameraBW, 10
 - CameraBW, 10
- CameraRGB, 11
 - CameraRGB, 12
- canExit
 - Dashboard, 26
- changeCurrentSensorInfo
 - Dashboard, 27
- changeInterface
 - Dashboard, 27
- changeMainMenu
 - CLDashboard, 14
- checkUser
 - LoginInterface, 35
- CLDashboard, 12
 - changeMainMenu, 14
 - CLDashboard, 14
 - errorCommand, 14
 - helpCommand, 14
 - listSensor, 15
 - permissionError, 15
 - readCommand, 15
 - showMainMenu, 15
- clearMenu
 - CLMenu, 21
- CLInterface, 16
 - CLInterface, 17
 - login, 17
- CLIUtils.cpp
 - printCenter, 86
 - printCenterFromFile, 86
 - printColor, 87
- CLIUtils.h
 - printCenter, 57
 - printCenterFromFile, 58
- printColor, 58
- CLLoginInterface, 18
 - askEmployeeNumber, 19
 - askNIF, 19
 - showWelcomeMessage, 20
- CLMenu, 20
 - clearMenu, 21
 - show, 21, 22
- CLMenuBar, 22
 - show, 23
- Create
 - Dashboard, 27
 - Interface, 32
 - LoginInterface, 35
 - Menu, 36
 - MenuBar, 38
 - Sensor, 42
- Dashboard, 24
 - addNewSensor, 25
 - addToMainMenu, 26
 - canExit, 26
 - changeCurrentSensorInfo, 27
 - changeInterface, 27
 - Create, 27
 - deleteSensor, 28
 - exit, 28
 - logout, 28
 - moveWindowMainMenu, 28
- Database, 29
 - getUser, 29
- deleteSensor
 - Dashboard, 28
- errorCommand
 - CLDashboard, 14
- exit
 - Dashboard, 28
- getName
 - User, 46
- getTimestamp
 - User, 46
- getUser
 - Database, 29
- hasAdminPermission
 - User, 47
- helpCommand
 - CLDashboard, 14

- Humidity, [30](#)
 - Humidity, [30](#)
- include/Admin.h, [49](#)
- include/AirQuality.h, [50](#)
- include/CameraBW.h, [51](#)
- include/CameraRGB.h, [52](#)
- include/CLDashboard.h, [53](#)
- include/CLInterface.h, [55](#)
- include/CLIUtils.h, [56](#)
- include/CLLoginInterface.h, [58](#)
- include/CLMenu.h, [60](#)
- include/CLMenuBar.h, [61](#)
- include/Dashboard.h, [62](#)
- include/Database.h, [64](#)
- include/Humidity.h, [65](#)
- include/Interface.h, [66](#)
- include/LoginInterface.h, [68](#)
- include/main.h, [69](#)
- include/Menu.h, [70](#)
- include/MenuBar.h, [72](#)
- include/Moisture.h, [73](#)
- include/NotFoundUserException.h, [74](#)
- include/Sensor.h, [76](#)
- include/Thermometer.h, [77](#)
- include/User.h, [78](#)
- include/UserConfig.h, [79](#)
- Interface, [31](#)
 - Create, [32](#)
 - loadMenu, [32](#)
 - login, [33](#)
- listSensor
 - CLDashboard, [15](#)
- loadMenu
 - Interface, [32](#)
- login
 - CLInterface, [17](#)
 - Interface, [33](#)
- LoginInterface, [34](#)
 - checkUser, [35](#)
 - Create, [35](#)
- logout
 - Dashboard, [28](#)
- Menu, [36](#)
 - Create, [36](#)
- MenuBar, [37](#)
 - Create, [38](#)
 - setCurrentMenu, [38](#)
- Moisture, [39](#)
 - Moisture, [39](#)
- moveWindowMainMenu
 - Dashboard, [28](#)
- NotFoundUserException, [40](#)
- permissionError
 - CLDashboard, [15](#)
- printCenter
 - CLIUtils.cpp, [86](#)
 - CLIUtils.h, [57](#)
- printCenterFromFile
 - CLIUtils.cpp, [86](#)
 - CLIUtils.h, [58](#)
- printColor
 - CLIUtils.cpp, [87](#)
 - CLIUtils.h, [58](#)
- readCommand
 - CLDashboard, [15](#)
- requestData
 - Sensor, [43](#)
- Sensor, [41](#)
 - Create, [42](#)
 - requestData, [43](#)
 - Sensor, [42](#)
- setCurrentMenu
 - MenuBar, [38](#)
- setEmployeeNumber
 - User, [47](#)
- setNIF
 - User, [47](#)
- show
 - CLMenu, [21](#), [22](#)
 - CLMenuBar, [23](#)
- showMainMenu
 - CLDashboard, [15](#)
- showWelcomeMessage
 - CLLoginInterface, [20](#)
- src/Admin.cpp, [80](#)
- src/AirQuality.cpp, [81](#)
- src/CameraBW.cpp, [82](#)
- src/CameraRGB.cpp, [82](#)
- src/CLDashboard.cpp, [83](#)
- src/CLInterface.cpp, [84](#)
- src/CLIUtils.cpp, [85](#)
- src/CLLoginInterface.cpp, [87](#)
- src/CLMenu.cpp, [88](#)
- src/CLMenuBar.cpp, [89](#)
- src/Dashboard.cpp, [89](#)
- src/Database.cpp, [90](#)
- src/Humidity.cpp, [91](#)
- src/Interface.cpp, [92](#)
- src/LoginInterface.cpp, [93](#)
- src/main.cpp, [94](#)
- src/Menu.cpp, [95](#)
- src/MenuBar.cpp, [96](#)
- src/Moisture.cpp, [96](#)
- src/Sensor.cpp, [97](#)
- src/Thermometer.cpp, [98](#)
- src/User.cpp, [99](#)
- src/UserConfig.cpp, [100](#)
- Thermometer, [43](#)
 - Thermometer, [44](#)

User, [44](#)
 addTimestamp, [46](#)
 getName, [46](#)
 getTimestamp, [46](#)
 hasAdminPermission, [47](#)
 setEmployeeNumber, [47](#)
 setNIF, [47](#)
 User, [46](#)
UserConfig, [48](#)