

## Practice 9

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# Chapter 1

## Hierarchical Index

### 1.1 Class Hierarchy

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

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## Chapter 2

# Class Index

### 2.1 Class List

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

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## Chapter 3

# File Index

### 3.1 File List

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

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## 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](#)

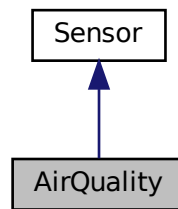
## 4.2 AirQuality Class Reference

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

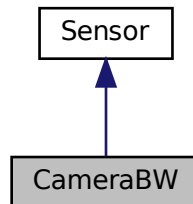
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

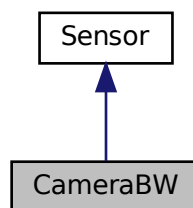
- include/[AirQuality.h](#)
- src/[AirQuality.cpp](#)

## 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

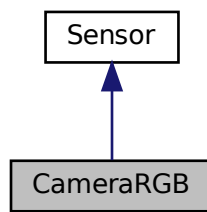
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

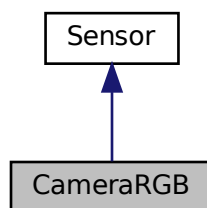
- [include/CameraBW.h](#)
- [src/CameraBW.cpp](#)

## 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

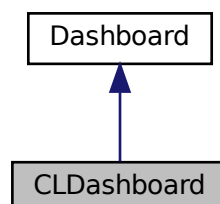
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

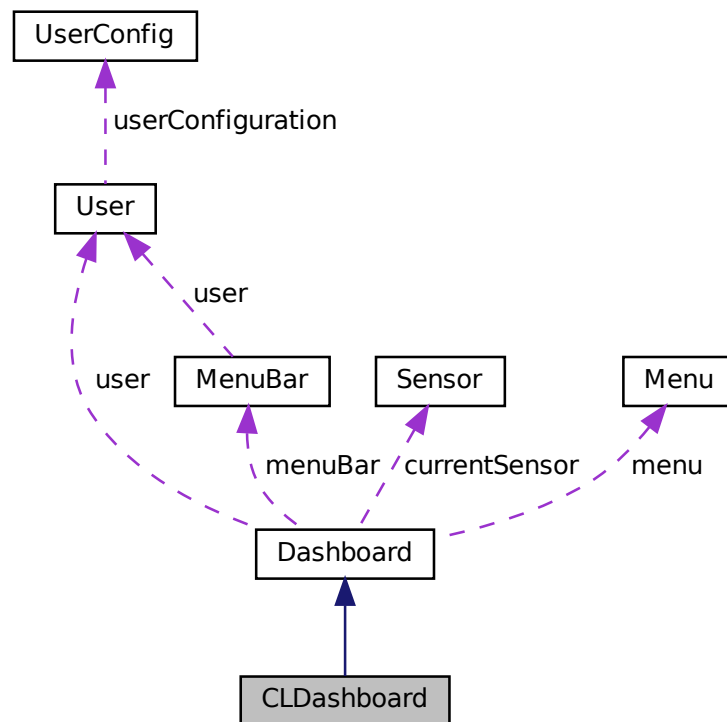
- [include/CameraRGB.h](#)
- [src/CameraRGB.cpp](#)

## 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.

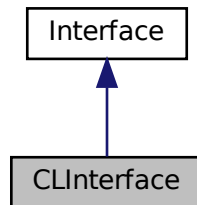
Implements [Dashboard](#).

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

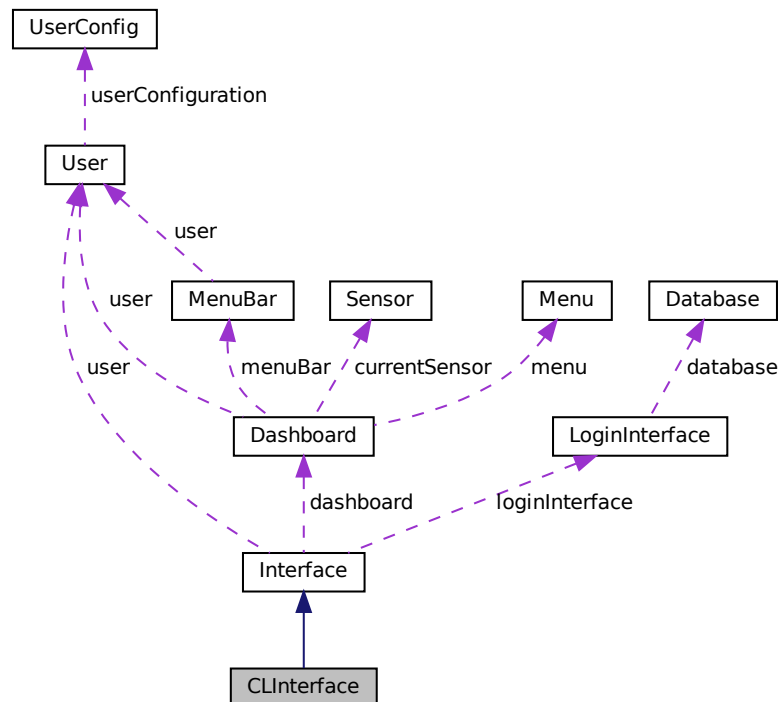
- [include/CLDashboard.h](#)
- [src/CLDashboard.cpp](#)

## 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

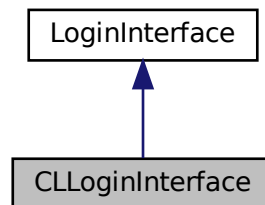
Implements [Interface](#).

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

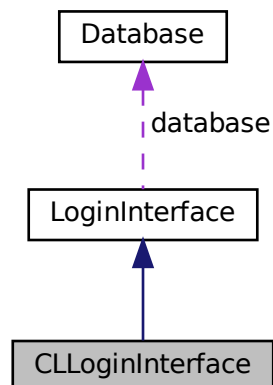
- [include/CLInterface.h](#)
- [src/CLInterface.cpp](#)

## 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.

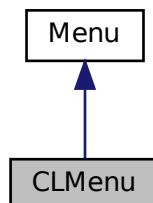
Implements [LoginInterface](#).

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

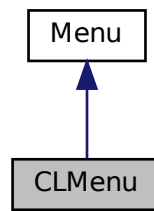
- [include/CLLoginInterface.h](#)
- [src/CLLoginInterface.cpp](#)

## 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>	<a href="#">Sensor</a> to display
<i>config</i>	<a href="#">User</a> 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 $\leq 7$
<i>config</i>	<a href="#">User</a> configuration

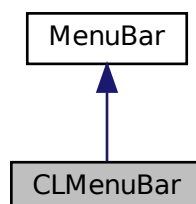
Implements [Menu](#).

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

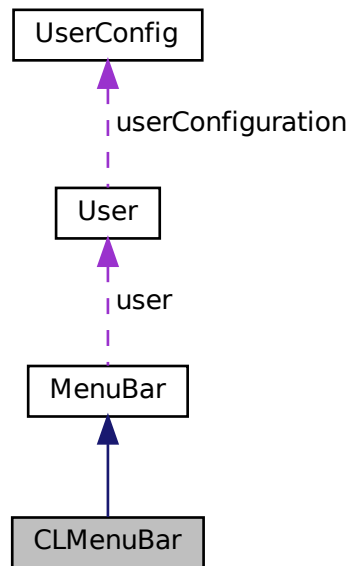
- include/[CLMenu.h](#)
- src/[CLMenu.cpp](#)

## 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.

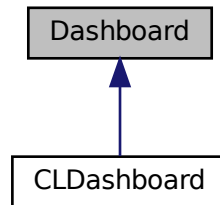
Implements [MenuBar](#).

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

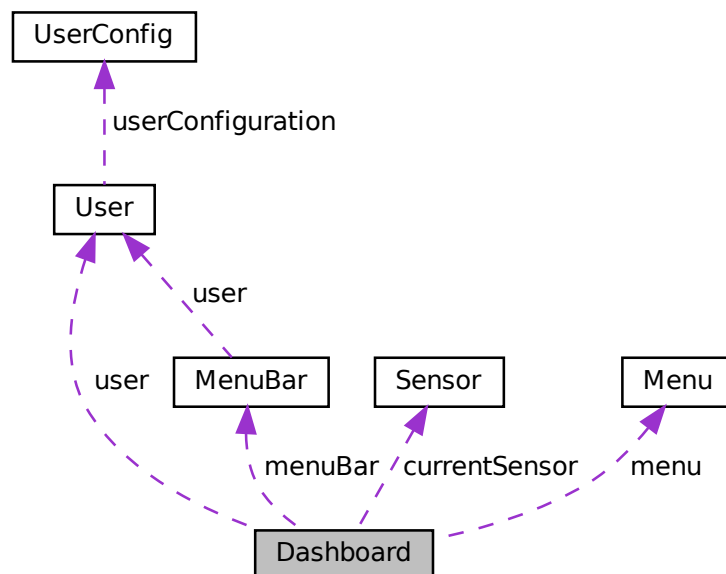
- include/[CLMenuBar.h](#)
- src/[CLMenuBar.cpp](#)

## 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.*
- std::vector< `User` > `getNewUsers` ()

*Get the New Users vector.*
- 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.*
- bool `allowedToExit`
- std::vector< `User` > `newUsers`

## 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>	<a href="#">Sensor</a> 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 <a href="#">Menu</a> )
---------------------	--

##### 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 <a href="#">Dashboard</a> 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 `getNewUsers()`

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

Get the New Users vector.

##### Returns

```
std::vector<User>
```

#### 4.10.1.11 `logout()`

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

Exits the dashboard and goes back to the login screen.

##### See also

```
cleanSensor
```

#### 4.10.1.12 `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](#) &currentUser)  
*Get the [User](#) object in the database, if not throws an exception.*
- void [resetUser](#) ([User](#) &currentUser)
- void [addUsers](#) (std::vector< [User](#) > newUsers)

### 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

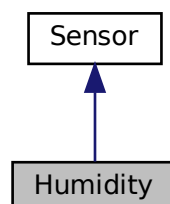
<i>employeeNumber</i>	
<i>NIF</i>	
<i>currentUser</i>	

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

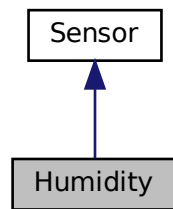
- include/[Database.h](#)
- src/[Database.cpp](#)

## 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

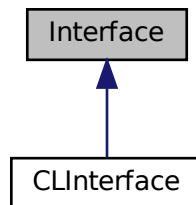
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

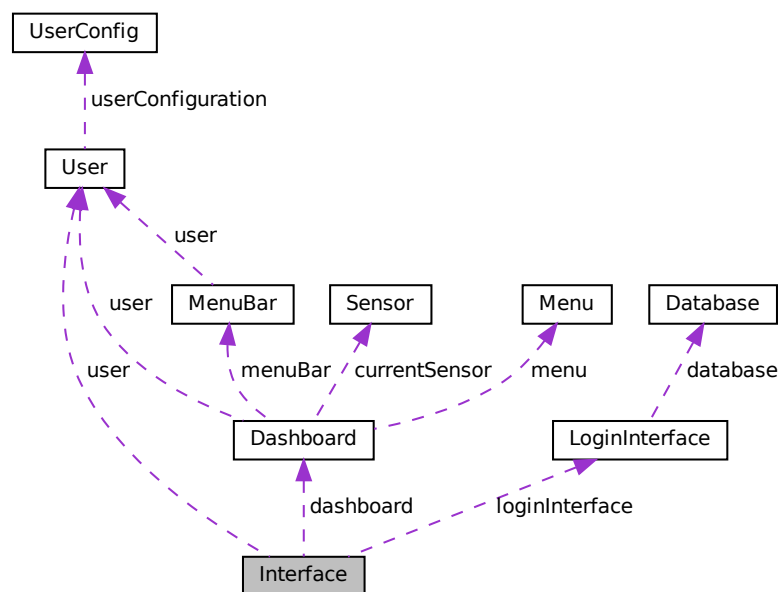
- include/[Humidity.h](#)
- src/[Humidity.cpp](#)

## 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 without any interface.

**Parameters**

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

**Note**

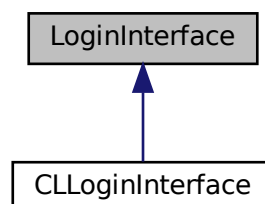
This method is used when the user executes the main with the NIF and employee number

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

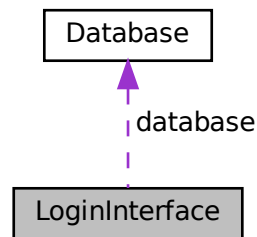
- [include/Interface.h](#)
- [src/Interface.cpp](#)

**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](#) &currentUser)
- 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

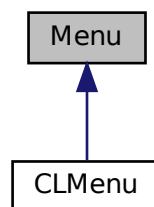
LoginInterface\* New login interface instance

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

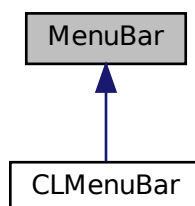
[Menu](#)\* New menu instance

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

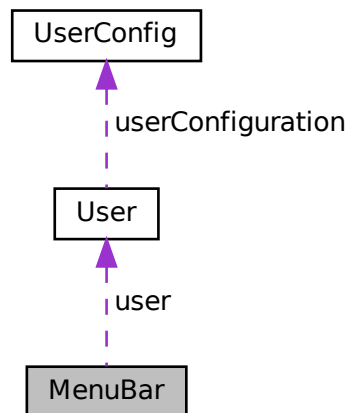
- include/[Menu.h](#)
- src/[Menu.cpp](#)

## 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

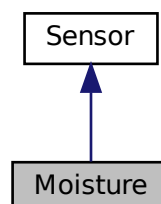
<i>currentMenu</i>	
--------------------	--

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

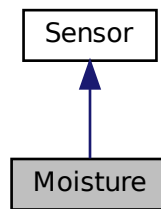
- include/[MenuBar.h](#)
- src/[MenuBar.cpp](#)

## 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

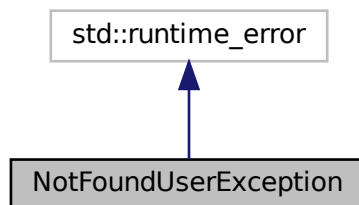
The documentation for this class was generated from the following files:

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

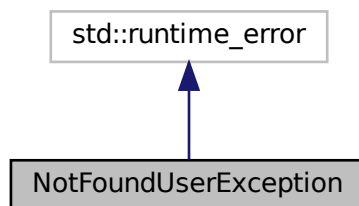


## 4.18 NotFoundUserException Class Reference

Inheritance diagram for NotFoundUserException:



Collaboration diagram for NotFoundUserException:

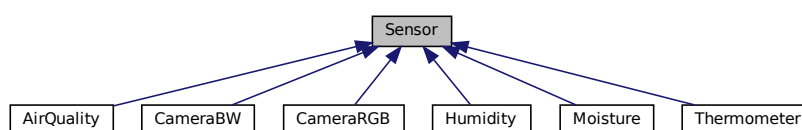


The documentation for this class was generated from the following file:

- 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>	<a href="#">Sensor</a> 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

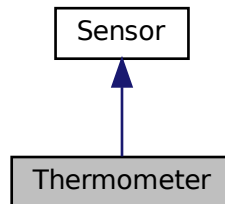
std::vector<int>

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

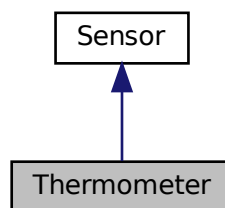
- include/[Sensor.h](#)
- src/[Sensor.cpp](#)

## 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

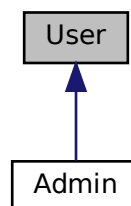
<i>active</i>	By default off
<i>valPerMin</i>	By default 1 val/min

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

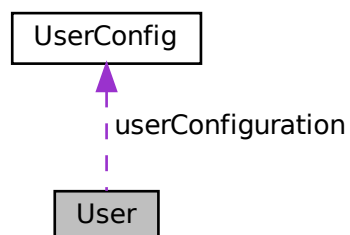
- include/[Thermometer.h](#)
- src/[Thermometer.cpp](#)

## 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

<i>NIF</i>	
------------	--

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

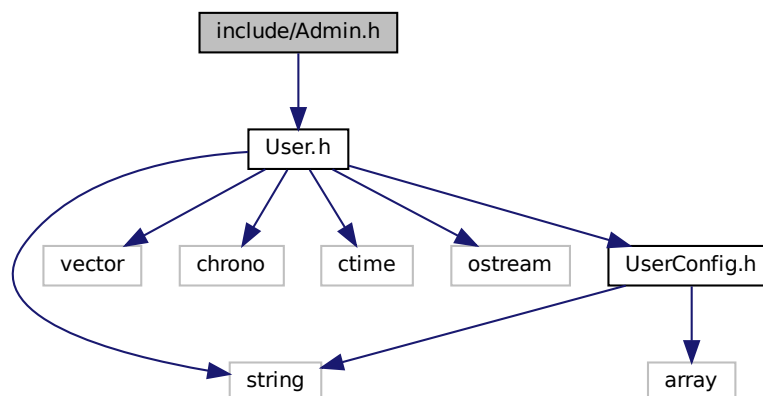
# File Documentation

### 5.1 include/Admin.h File Reference

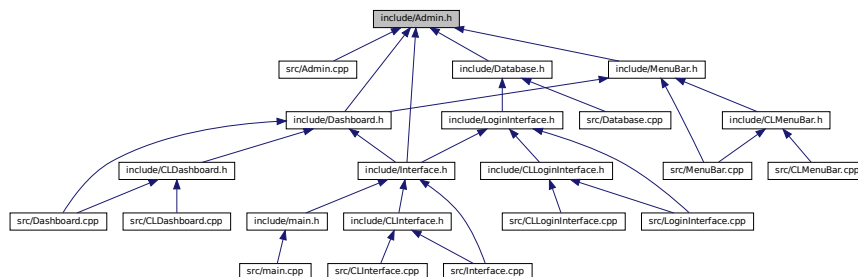
Header file of [Admin.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

#### Copyright

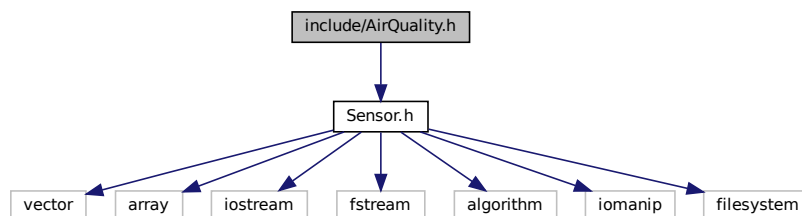
Copyright (c) 2022

## 5.2 include/AirQuality.h File Reference

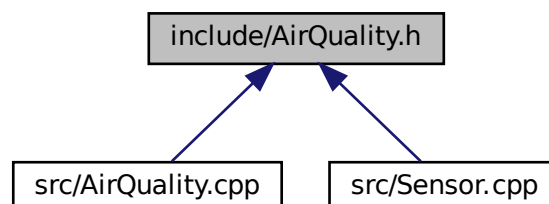
Header file of [AirQuality.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

#### Copyright

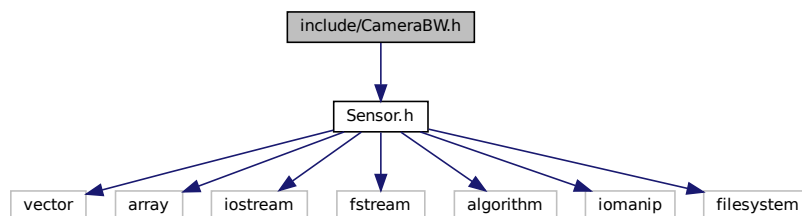
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## 5.3 include/CameraBW.h File Reference

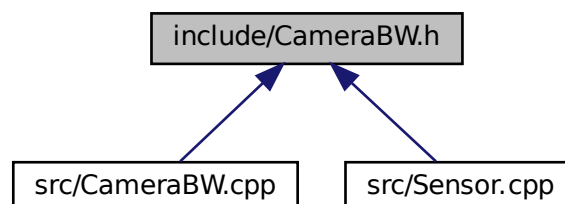
Header file of [CameraBW.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

Version

1.0

Date

2022-11-23

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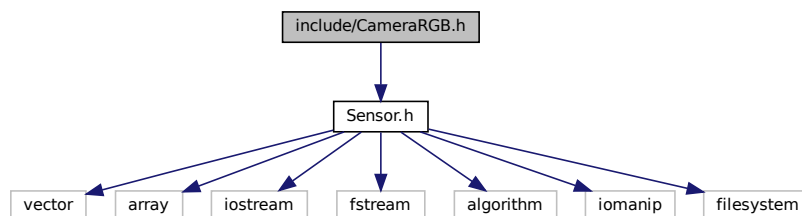
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## 5.4 include/CameraRGB.h File Reference

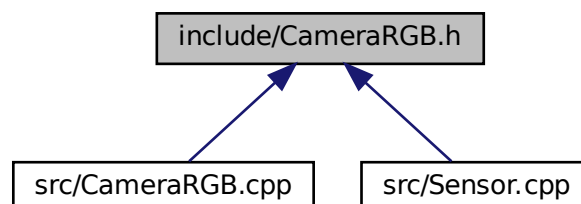
Header file of [CameraRGB.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

#### Copyright

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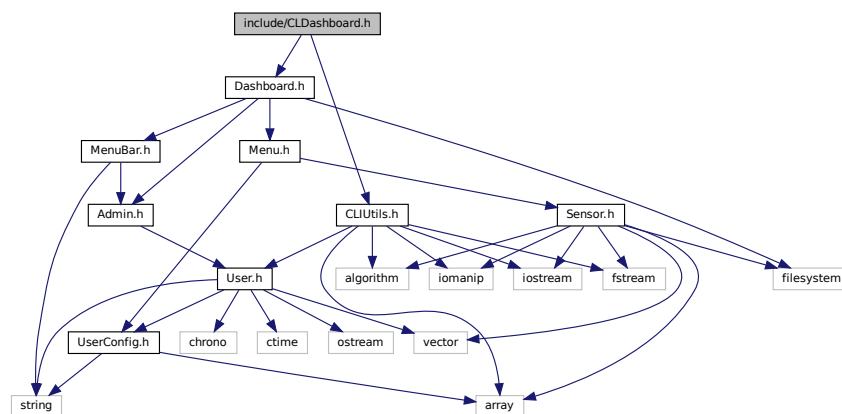
## 5.5 include/CLDashboard.h File Reference

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

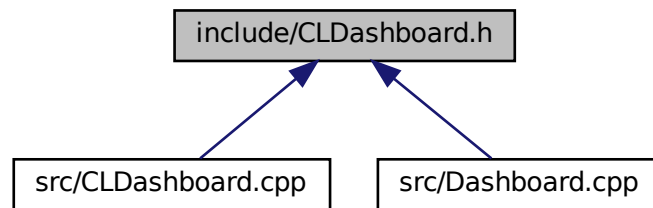
```
#include "Dashboard.h"
```

```
#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](#).

#### Author

Javier Izquierdo ( [j.izquierdoh.2021@alumnos.urjc.es](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

#### Copyright

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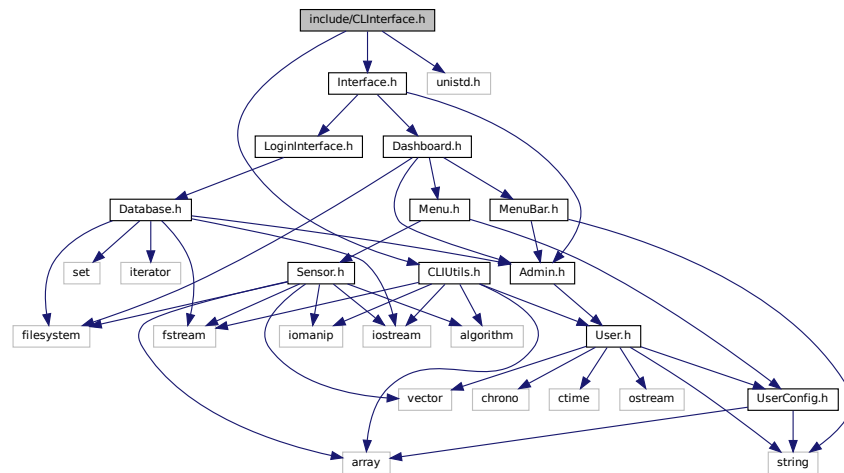


## 5.6 include/CLInterface.h File Reference

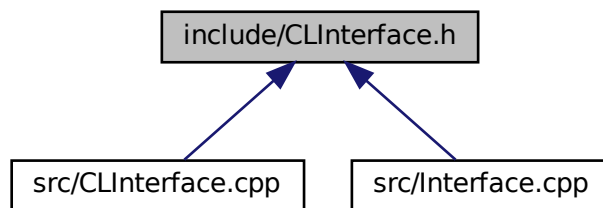
Header file of [CLInterface.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

**Version**

1.0

**Date**

2022-11-23

**Copyright**

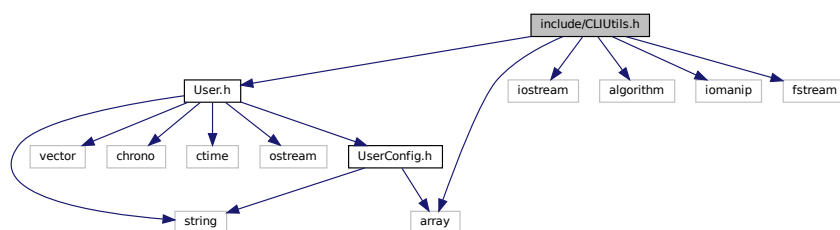
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## 5.7 include/CLIUtils.h File Reference

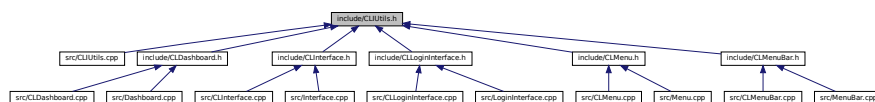
Header file of [CLIUtils.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

#### Copyright

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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 )
```

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**

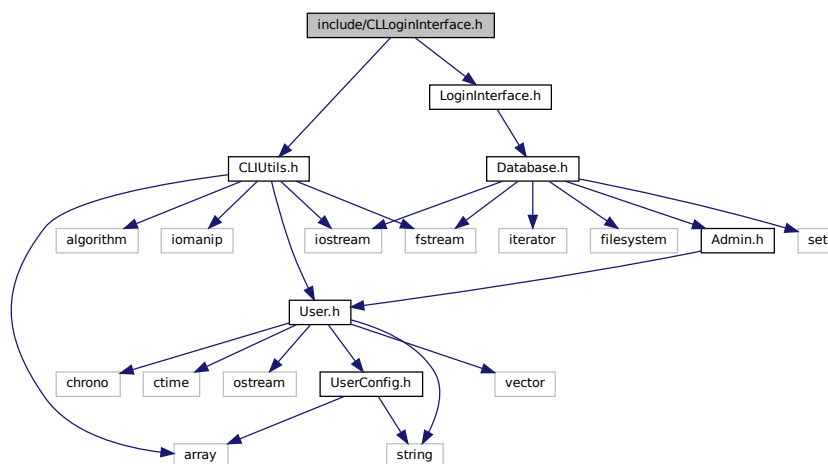
<i>toPrint</i>	
<i>frontColor</i>	
<i>backColor</i>	

**5.8 include/CLLoginInterface.h File Reference**

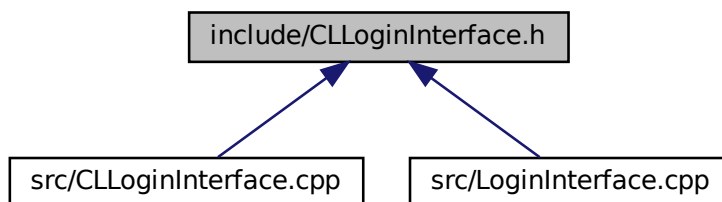
Header file of [CLLoginInterface.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

## Date

2022-11-23

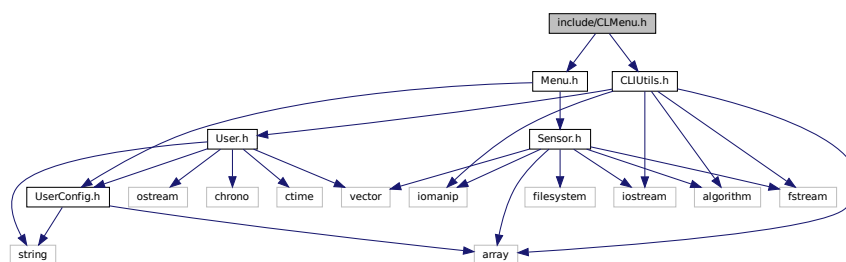
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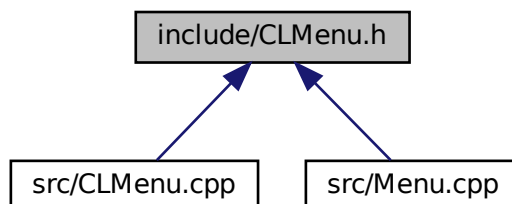
## 5.9 include/CLMenu.h File Reference

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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

Version

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Date

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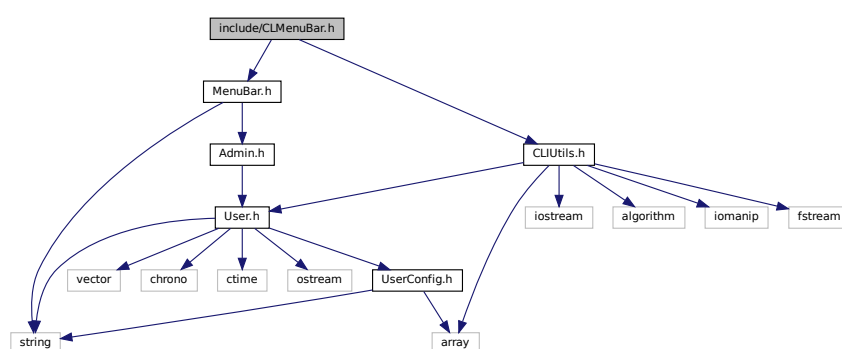
## 5.10 include/CLMenuBar.h File Reference

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

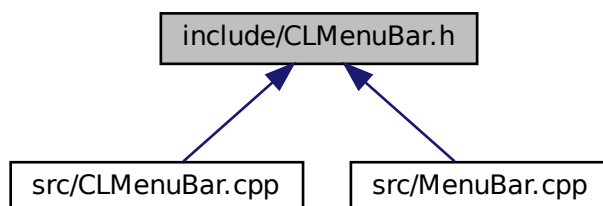
```
#include "MenuBar.h"
```

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

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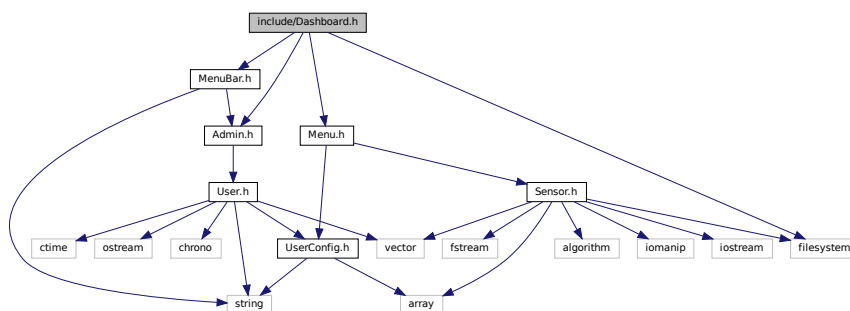
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## 5.11 include/Dashboard.h File Reference

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

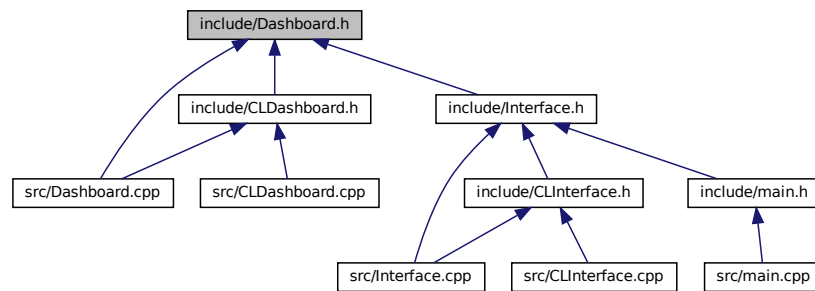
```
#include "Admin.h"  
#include "MenuBar.h"  
#include "Menu.h"  
#include <filesystem>
```

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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

#### Copyright

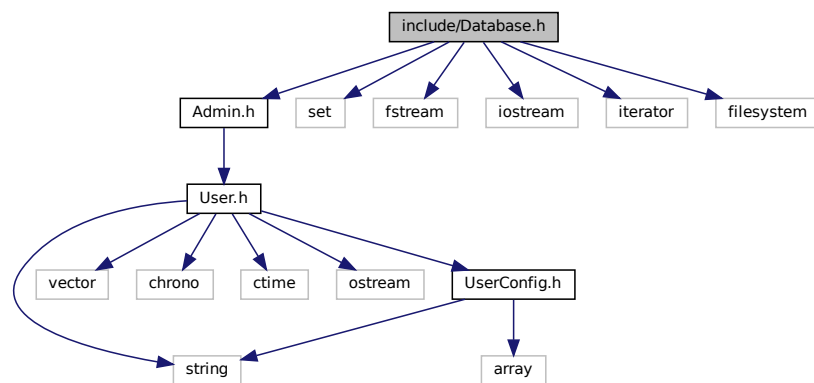
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## 5.12 include/Database.h File Reference

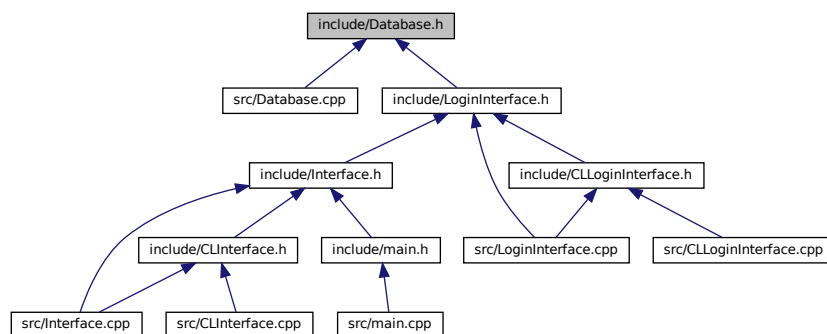
Header file of [Database.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

**Version**

1.0

**Date**

2022-11-23

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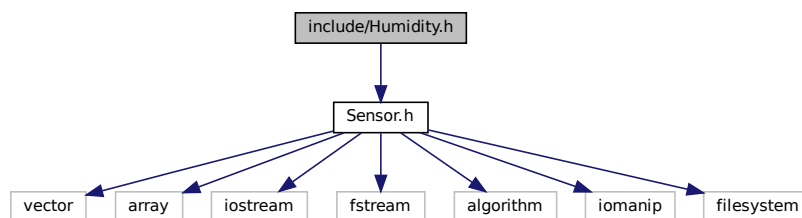
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## 5.13 include/Humidity.h File Reference

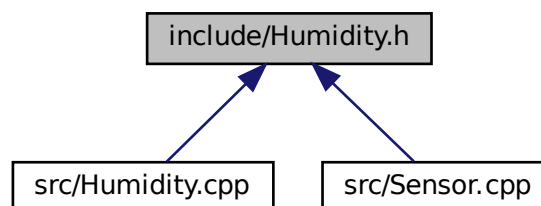
Header file of [Humidity.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

#### Copyright

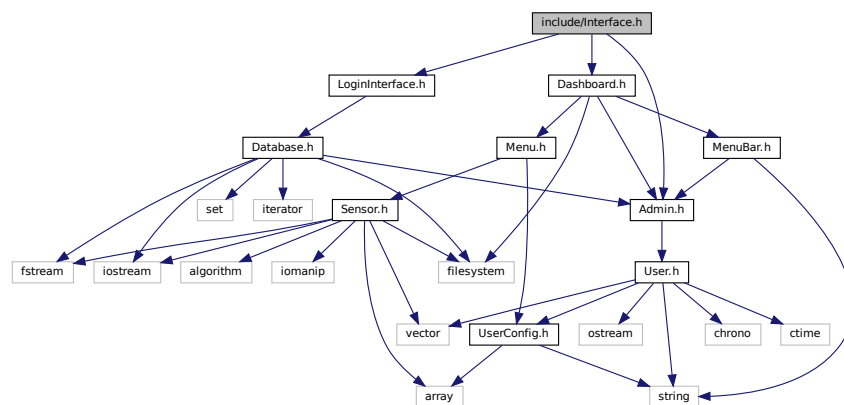
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## 5.14 include/Interface.h File Reference

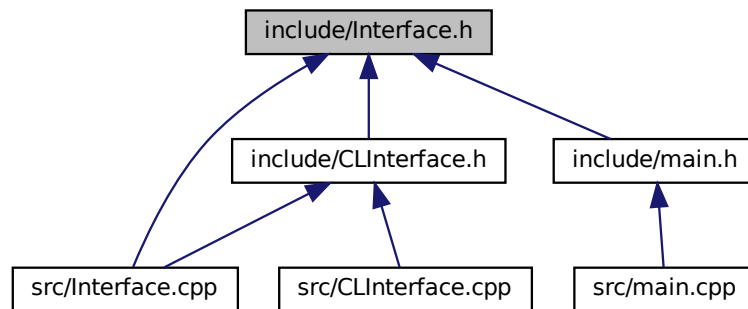
Header file of [Interface.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

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## Version

1.0

## Date

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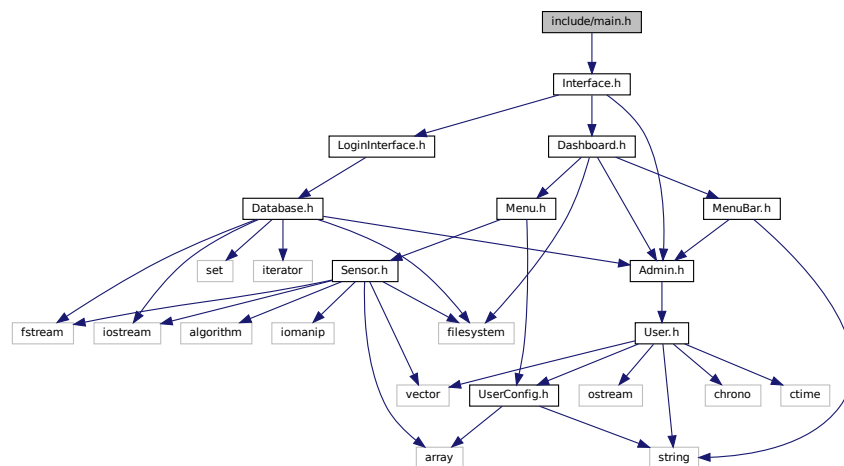
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## 5.16 include/main.h File Reference

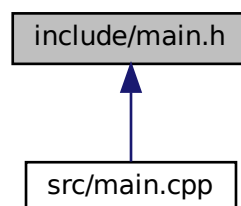
Header file of [main.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

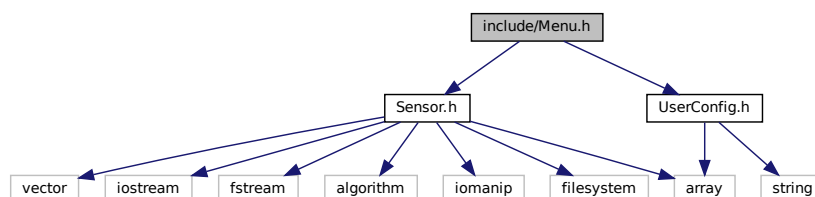
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## 5.17 include/Menu.h File Reference

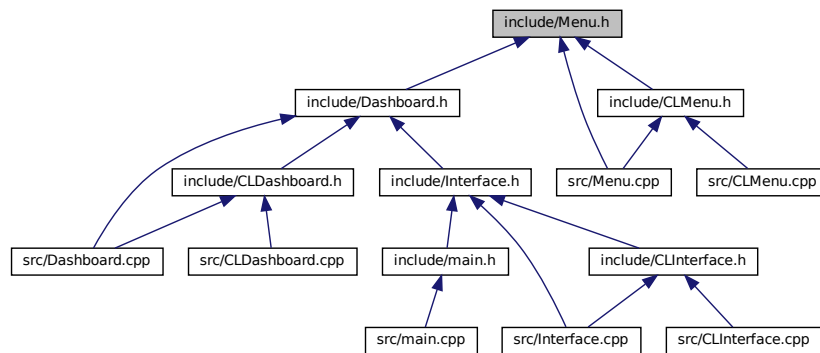
Header file of [Menu.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

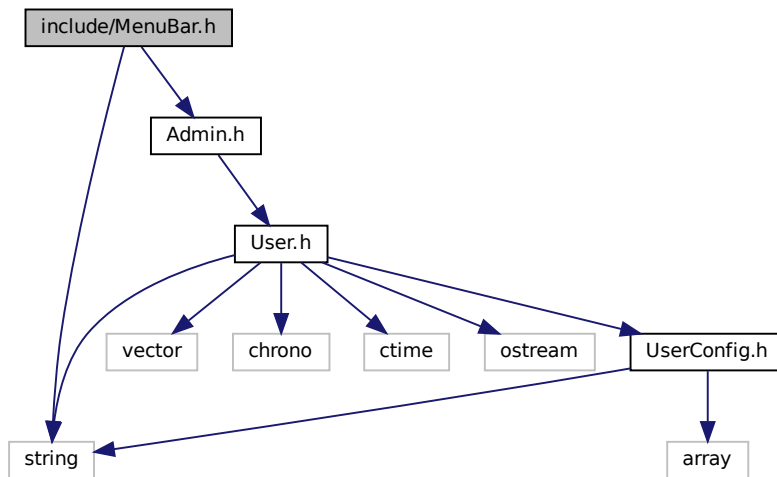
#### Copyright

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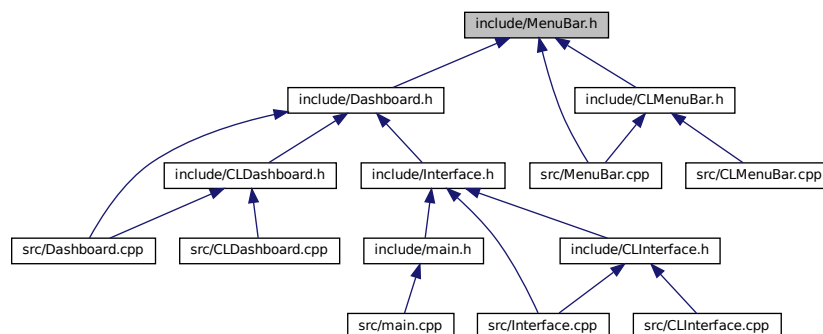
## 5.18 include/MenuBar.h File Reference

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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

**Version**

1.0

**Date**

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**Copyright**

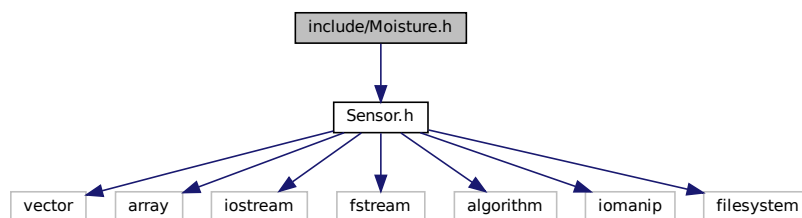
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## 5.19 include/Moisture.h File Reference

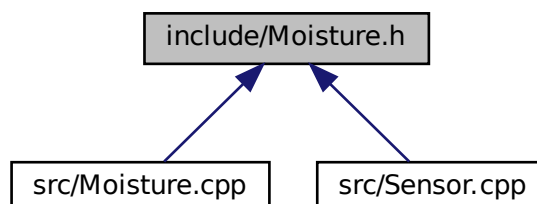
Header file of [Moisture.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

#### Copyright

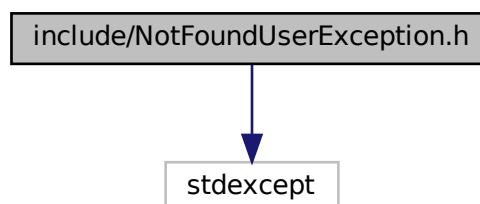
Copyright (c) 2022

## 5.20 include/NotFoundUserException.h File Reference

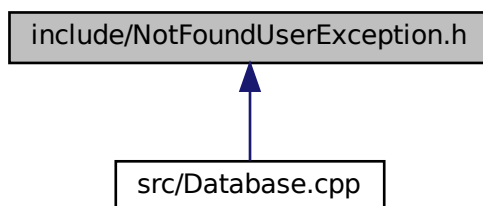
Exception thrown when user not found in database.

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

0.1

#### Date

2022-12-20

#### Copyright

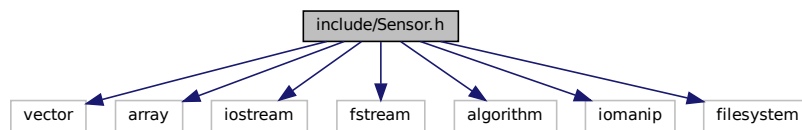
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## 5.21 include/Sensor.h File Reference

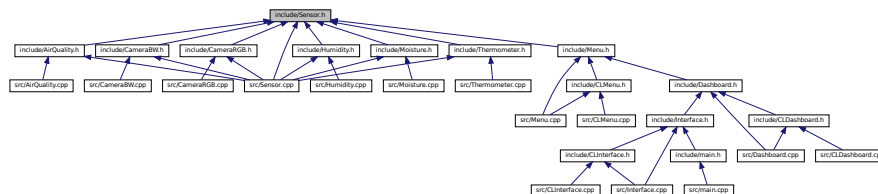
Header file of [Sensor.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

Version

1.0

Date

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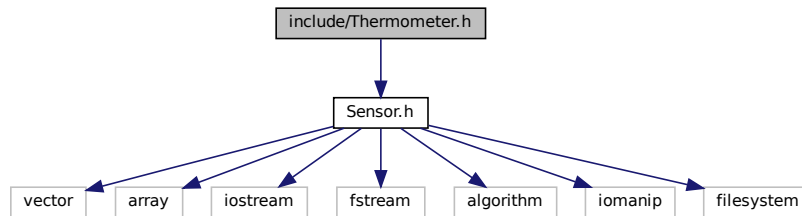
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## 5.22 include/Thermometer.h File Reference

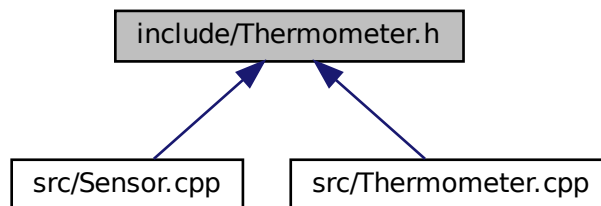
Header file of [Thermometer.cpp](#).

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

##### Version

1.0

##### Date

2022-11-23

##### Copyright

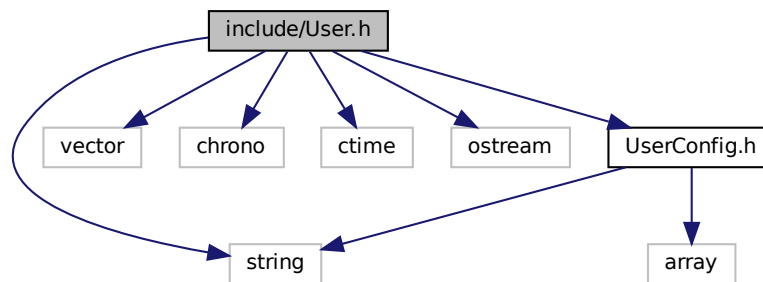
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## 5.23 include/User.h File Reference

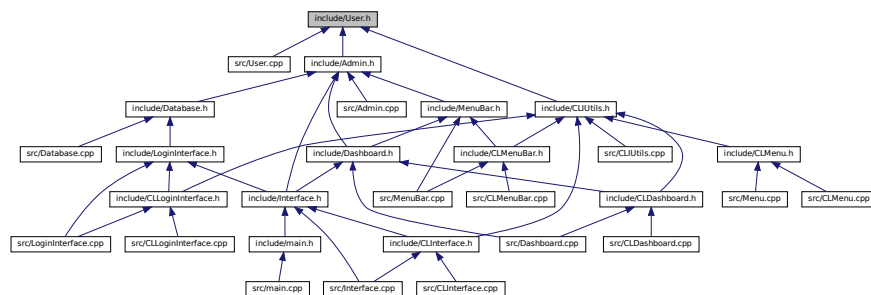
Header file of [User.cpp](#).

```
#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](#).



**Author**

Javier Izquierdo ( [j.izquierdoh.2021@alumnos.urjc.es](mailto:j.izquierdoh.2021@alumnos.urjc.es))

## Version

## 2.0

## Date \_\_\_\_\_

2022-11-23

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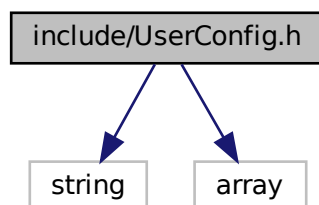
## 5.24 include/UserConfig.h File Reference

Header file of `UserConfig.cpp`.

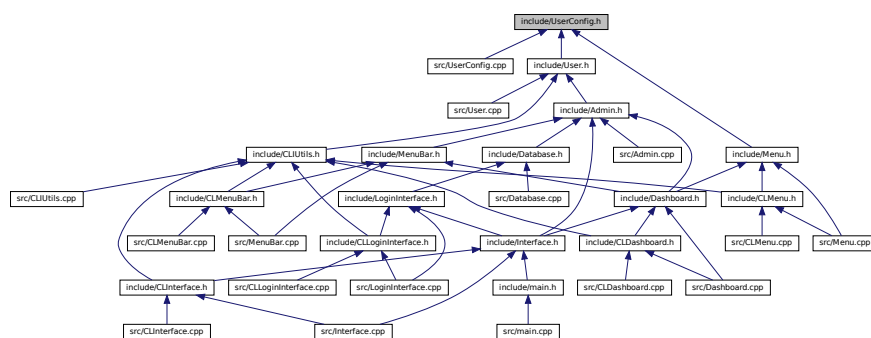
```
#include <string>
```

```
#include <array>
```

Include dependency graph for UserConfig.h:



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



## Classes

- class [UserConfig](#)

### 5.24.1 Detailed Description

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

#### Author

Javier Izquierdo Hernandez ( [j.izquierdoh.2021@alumnos.urjc.es](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

0.1

#### Date

2022-12-22

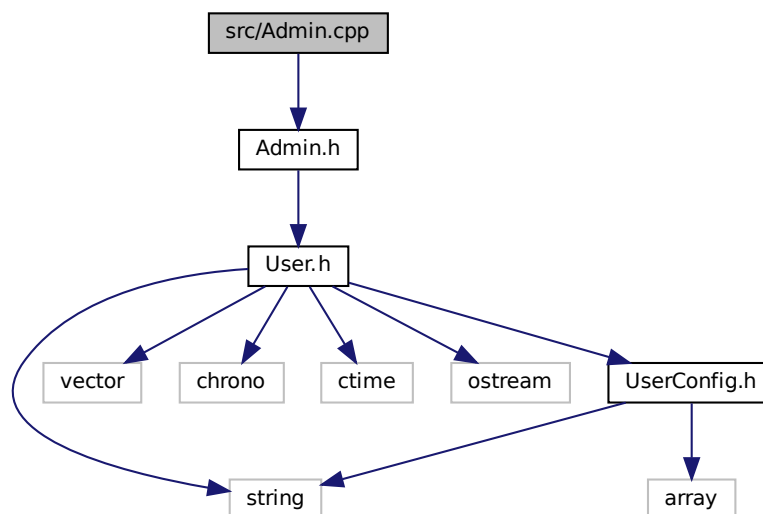
#### Copyright

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## 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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

**Version**

1.0

**Date**

2022-11-23

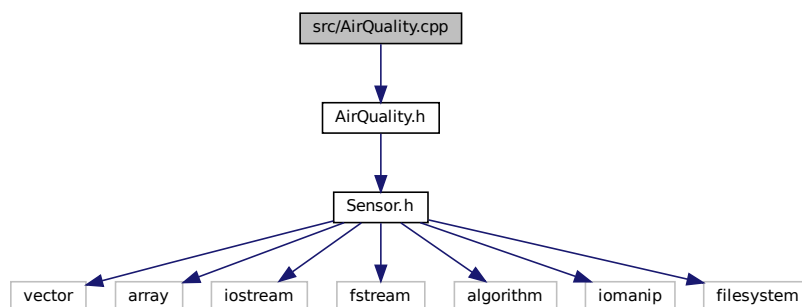
**Copyright**

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## 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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

**Version**

1.0

**Date**

2022-11-23

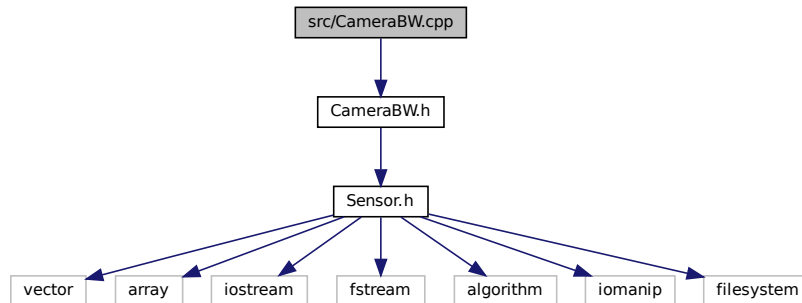
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## 5.27 src/CameraBW.cpp File Reference

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

Include dependency graph for CameraBW.cpp:



### 5.27.1 Detailed Description

#### Author

Javier Izquierdo ( [j.izquierdoh.2021@alumnos.urjc.es](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

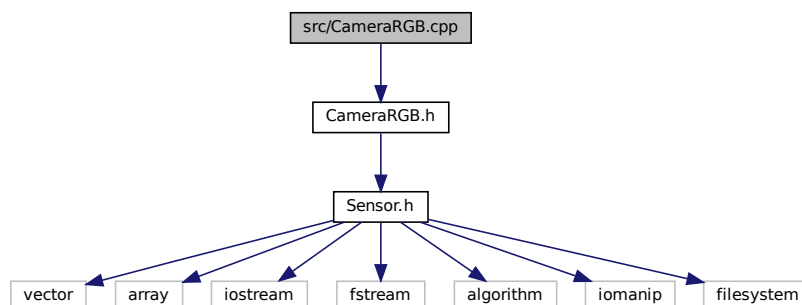
#### Copyright

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## 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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

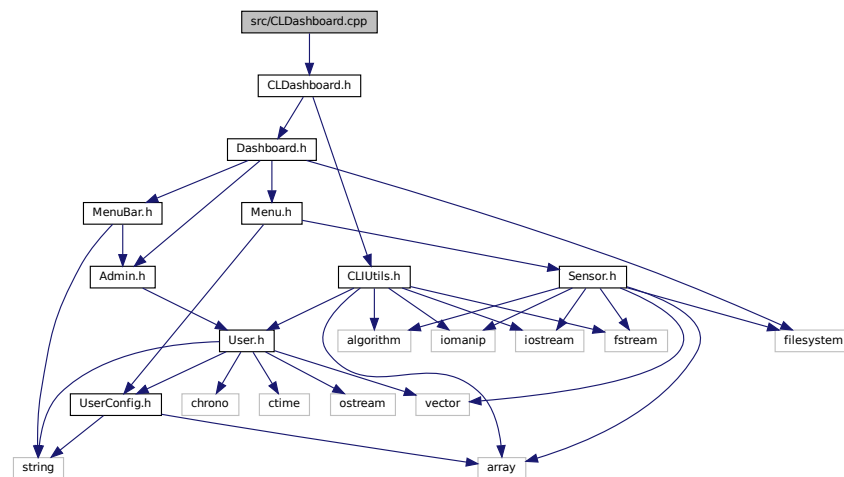
#### Copyright

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## 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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

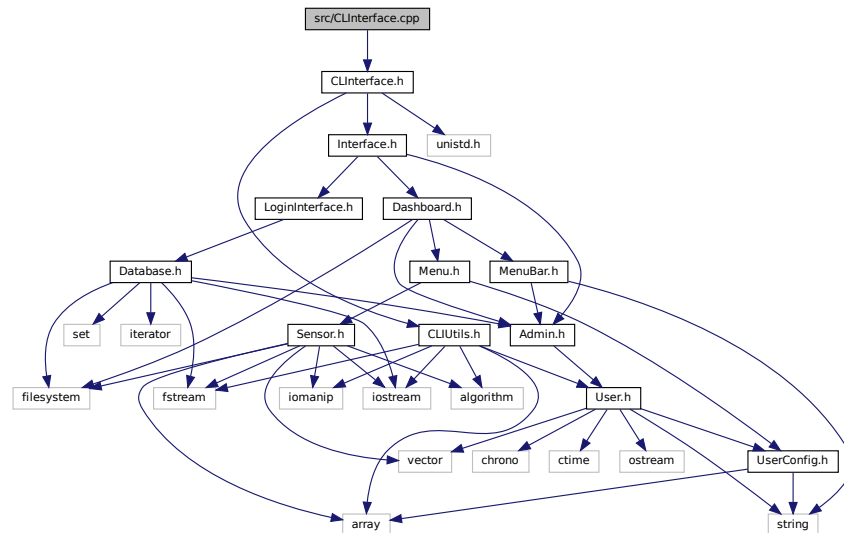
#### Copyright

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## 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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

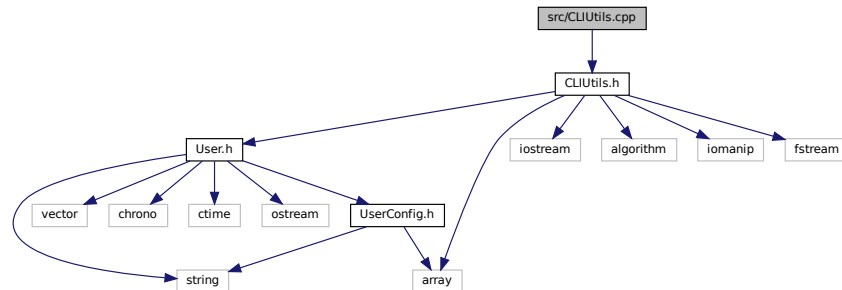
#### Copyright

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## 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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

#### Copyright

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### 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.

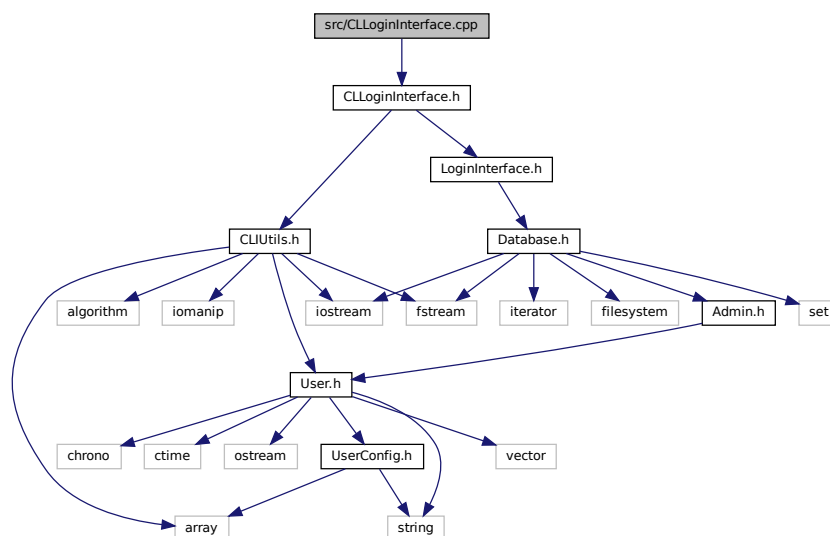
## Parameters

<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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

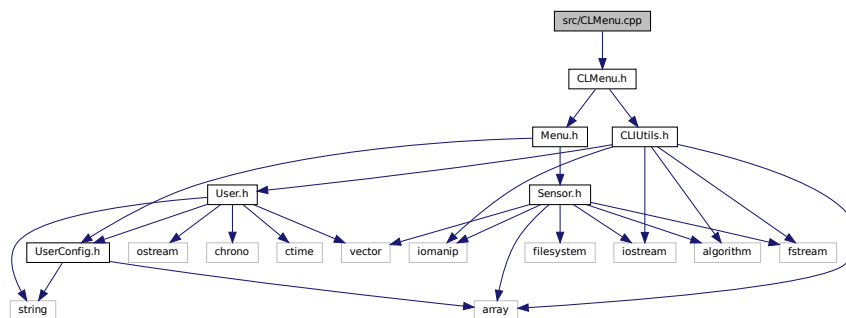
#### Copyright

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## 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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

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#### Date

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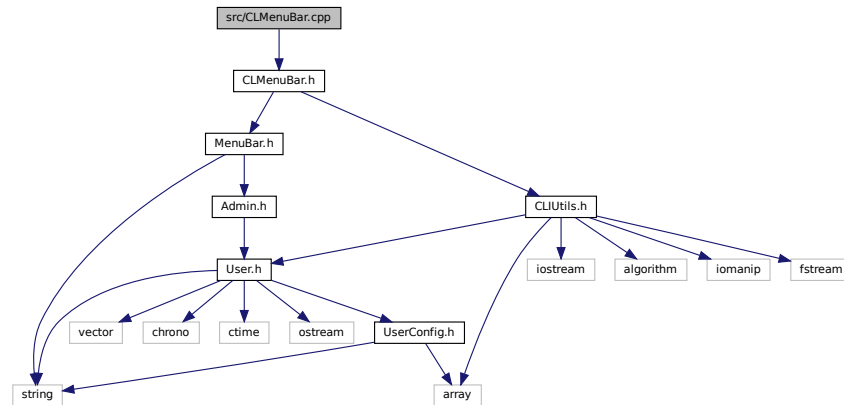
#### Copyright

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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

#### Copyright

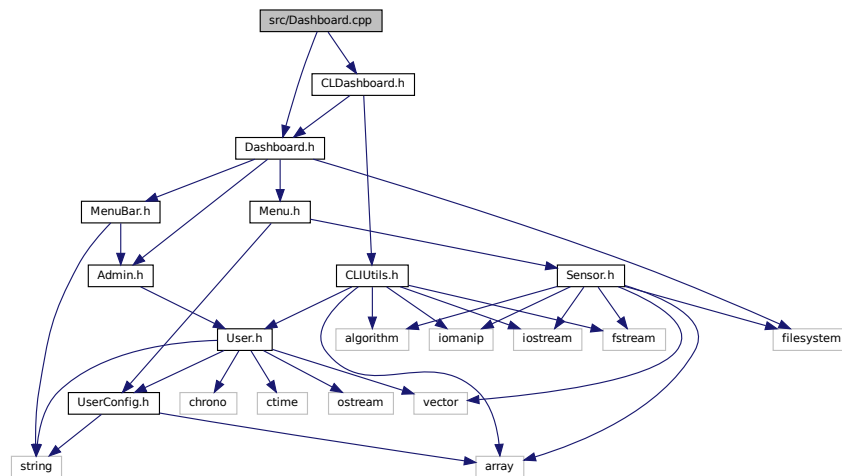
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## 5.35 src/Dashboard.cpp File Reference

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

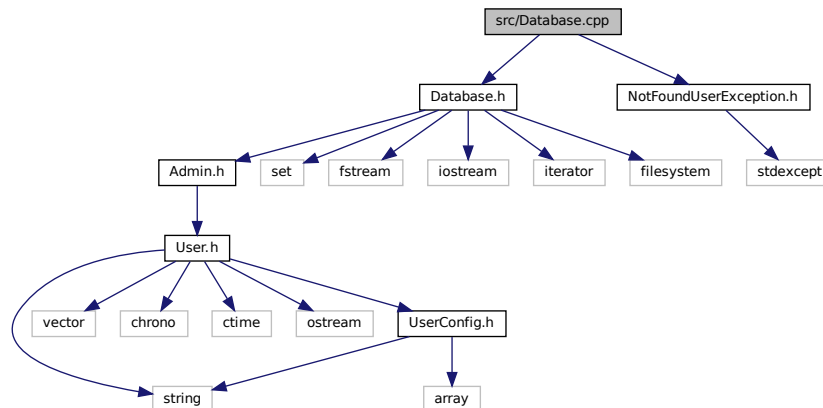
#### Copyright

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## 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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

Version

1.0

Date

2022-11-23

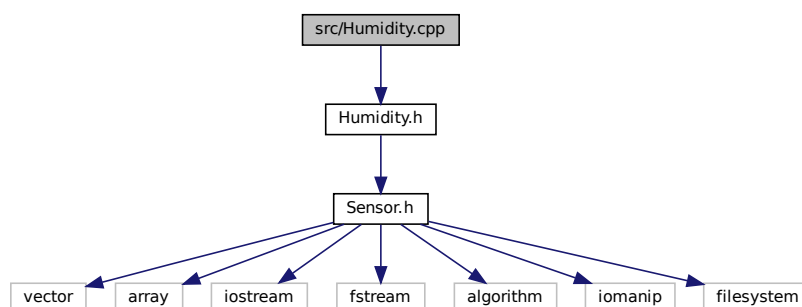
Copyright

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## 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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

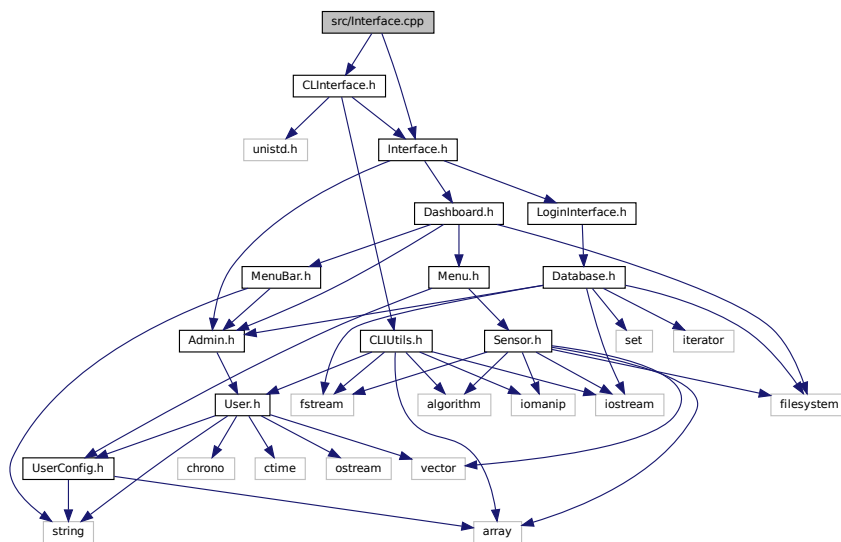
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#### Copyright

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## 5.38 src/Interface.cpp File Reference

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



### 5.38.1 Detailed Description

#### Author

Javier Izquierdo ( [j.izquierdoh.2021@alumnos.urjc.es](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

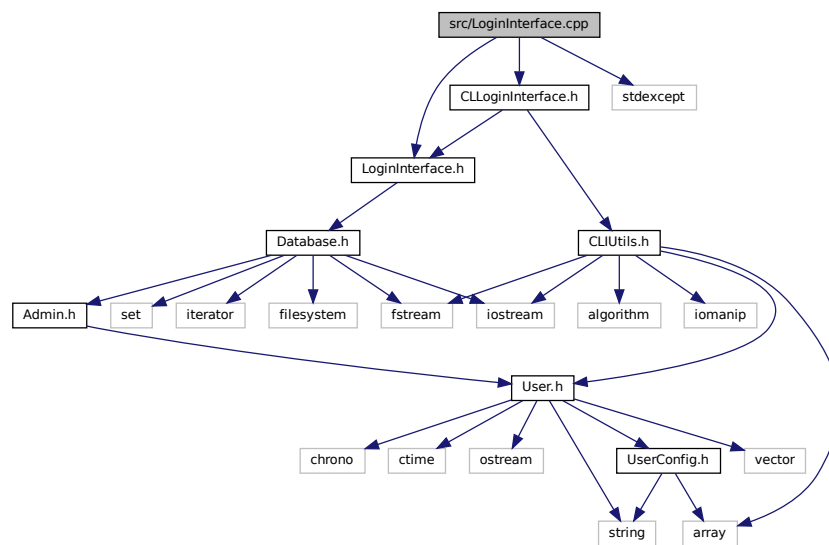
#### Copyright

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## 5.39 src/LoginInterface.cpp File Reference

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

Include dependency graph for LoginInterface.cpp:



### 5.39.1 Detailed Description

**Author**

Javier Izquierdo ( [j.izquierdoh.2021@alumnos.urjc.es](mailto:j.izquierdoh.2021@alumnos.urjc.es))

## Version

1.0

## Date \_\_\_\_\_

2022-11-23

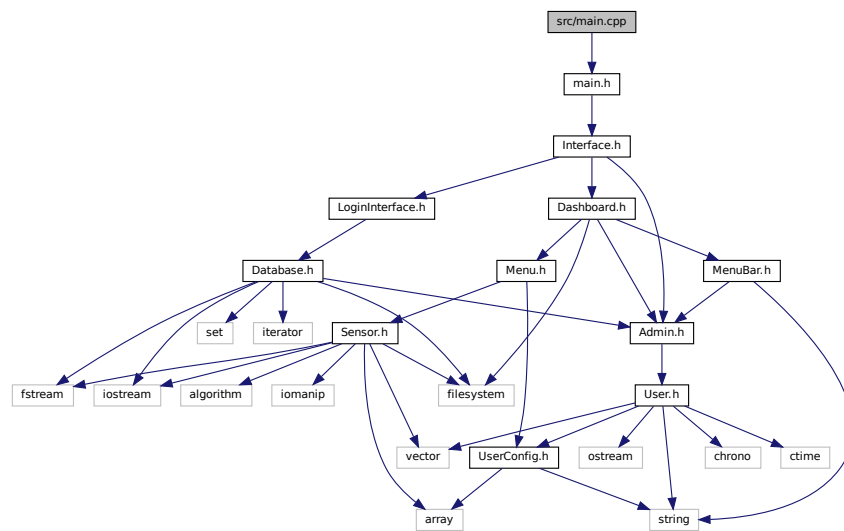
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## 5.40 src/main.cpp File Reference

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

Include dependency graph for main.cpp:



## Functions

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



### 5.40.1 Detailed Description

**Author**

Javier Izquierdo ( [j.izquierdoh.2021@alumnos.urjc.es](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

**Version**

1.0

**Date**

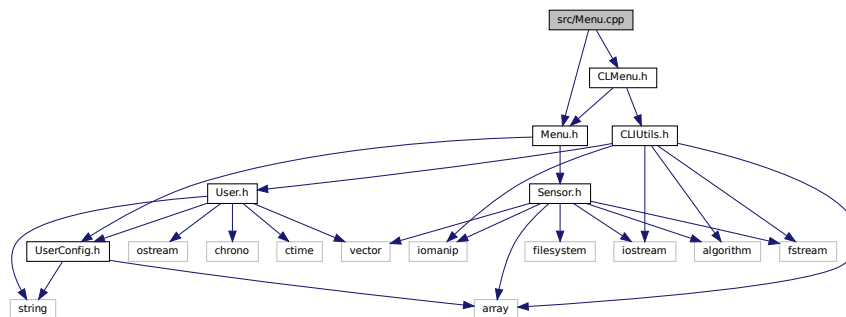
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## 5.41 src/Menu.cpp File Reference

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

**Version**

1.0

**Date**

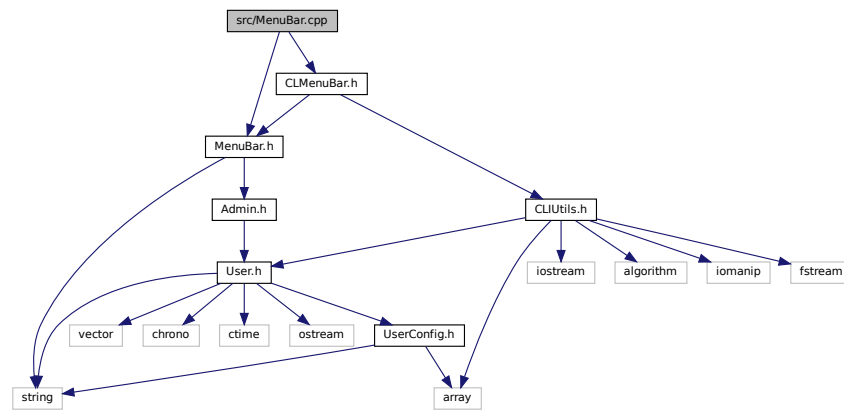
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## 5.42 src/MenuBar.cpp File Reference

```
#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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

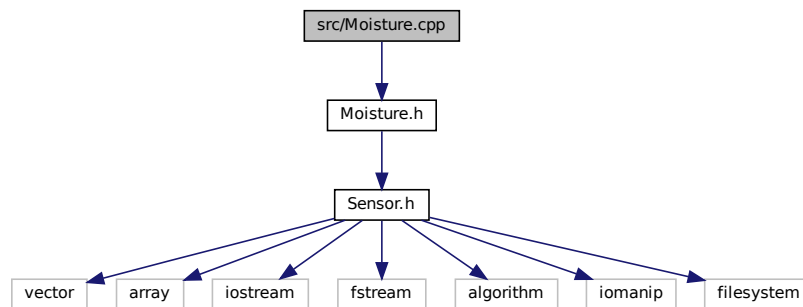
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## 5.43 src/Moisture.cpp File Reference

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

Include dependency graph for Moisture.cpp:



### 5.43.1 Detailed Description

#### Author

Javier Izquierdo ( [j.izquierdoh.2021@alumnos.urjc.es](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

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## 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](mailto:j.izquierdoh.2021@alumnos.urjc.es) )

#### Version

1.0

#### Date

2022-11-23

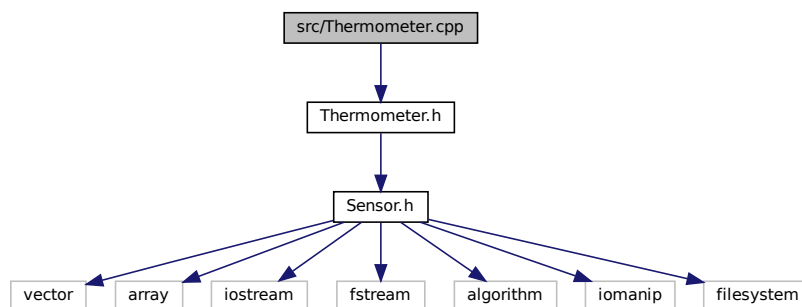
#### Copyright

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## 5.45 src/Thermometer.cpp File Reference

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

Include dependency graph for Thermometer.cpp:



### 5.45.1 Detailed Description

#### Author

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#### Version

1.0

#### Date

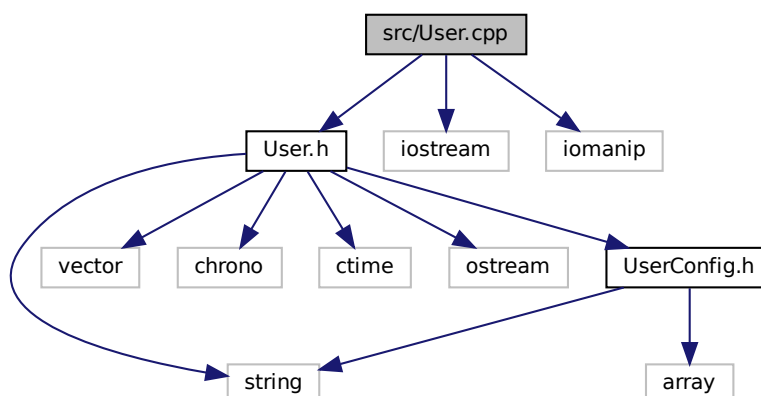
2022-11-23

#### Copyright

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## 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

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**Version**

2.0

**Date**

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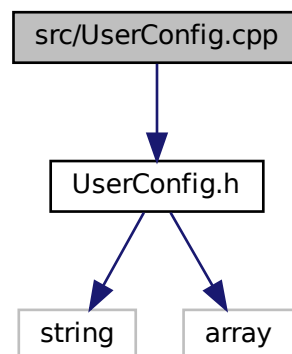
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## 5.47 src/UserConfig.cpp File Reference

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

Include dependency graph for UserConfig.cpp:



### 5.47.1 Detailed Description

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**Version**

0.1

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