

## Practice 4

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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:

include/ <a href="#">Admin.h</a>	
Header file of <a href="#">Admin.cpp</a>	53
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Header file of <a href="#">Menu.cpp</a>	77
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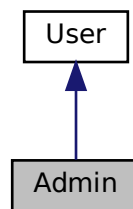
include/Moisture.h	
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## Chapter 4

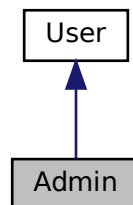
# Class Documentation

### 4.1 Admin Class Reference

Inheritance diagram for Admin:



Collaboration diagram for Admin:



### Public Member Functions

- [Admin](#) (std::string number="00000", std::string nif="000000000", 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

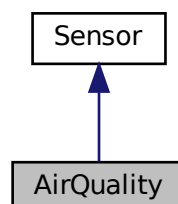
<i>employeeNumber</i>	
<i>NIF</i>	
<i>name</i>	

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

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

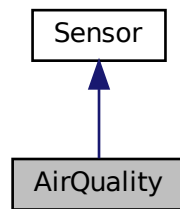
## 4.2 AirQuality Class Reference

Inheritance diagram for AirQuality:





Collaboration diagram for AirQuality:



## Public Member Functions

- `AirQuality` (bool active=false, int valPerMin=1)  
*Create a new Air Quality object.*
- `std::vector< int > requestData ()`  
*Request data from the air quality sensor.*

## 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

### 4.2.2 Member Function Documentation

#### 4.2.2.1 requestData()

```
std::vector< int > AirQuality::requestData ( ) [virtual]
```

Request data from the air quality sensor.

##### Returns

std::vector<int> Data values

##### Note

This function is a placeholder, returns random values

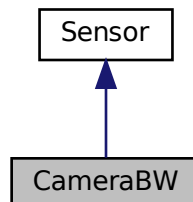
Implements [Sensor](#).

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

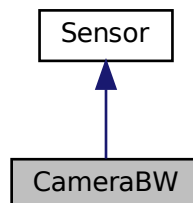
- include/[AirQuality.h](#)
- src/[AirQuality.cpp](#)

## 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.*
- `std::vector< int >` [requestData](#) ()  
*Request data from the bw camera.*

## 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

### 4.3.2 Member Function Documentation

#### 4.3.2.1 requestData()

```
std::vector< int > CameraBW::requestData ( ) [virtual]
```

Request data from the bw camera.

##### Returns

`std::vector<int>` Data values

##### Note

This function is a placeholder, returns random values

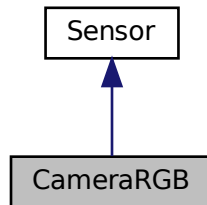
Implements [Sensor](#).

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.*
- `std::vector< int >` [requestData](#) ()  
*Request data from the rgb camera.*

### 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

## 4.4.2 Member Function Documentation

### 4.4.2.1 requestData()

```
std::vector< int > CameraRGB::requestData ( ) [virtual]
```

Request data from the rgb camera.

## Returns

std::vector<int> Data values

## Note

This function is a placeholder, returns random values

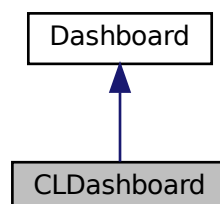
Implements [Sensor](#).

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

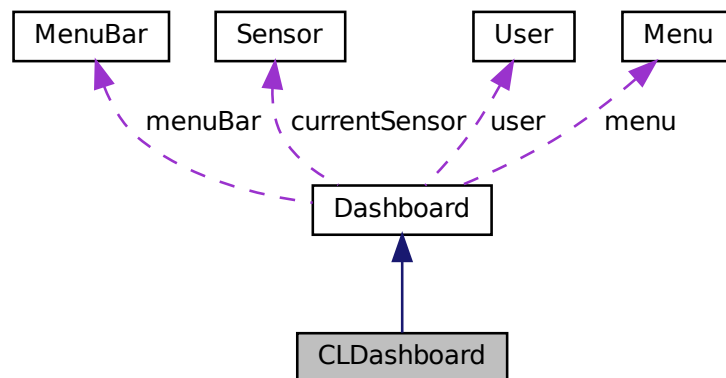
- include/[CameraRGB.h](#)
- src/[CameraRGB.cpp](#)

## 4.5 CLDashboard Class Reference

Inheritance diagram for CLDashboard:



Collaboration diagram for CLDashboard:



## Public Member Functions

- `CLDashboard ()`  
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 ( )
```

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](#).

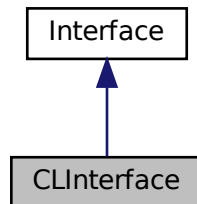
The documentation for this class was generated from the following files:

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

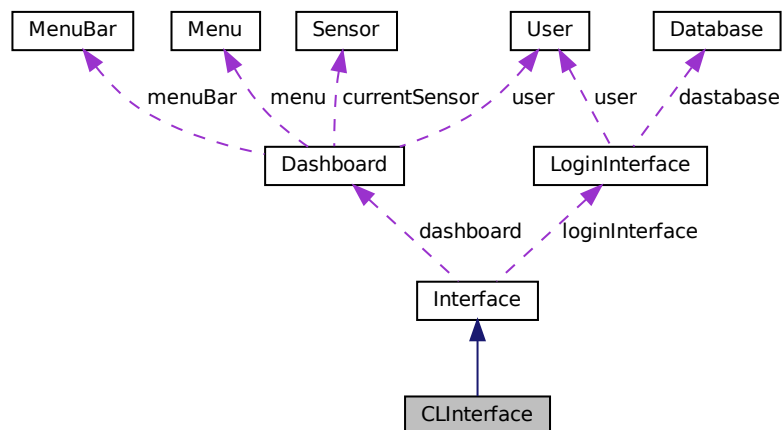


## 4.6 CLInterface Class Reference

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

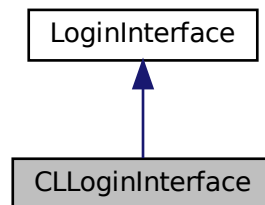
Implements [Interface](#).

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

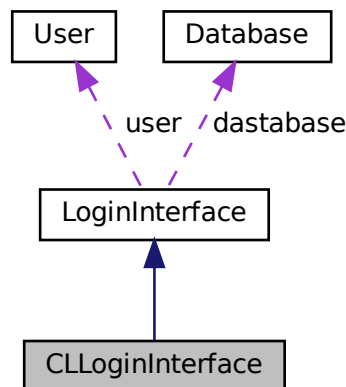
- [include/CLInterface.h](#)
- [src/CLInterface.cpp](#)

## 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:

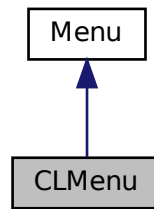
- include/CLLoginInterface.h
- src/CLLoginInterface.cpp

## 4.8 CLMenu Class Reference

Inheritance diagram for CLMenu:



Collaboration diagram for CLMenu:



## Public Member Functions

- void `show` (std::vector< `Sensor` \* >)  
*Shows the menu with six or less smaller sensors displayed in the command line.*
- void `show` (`Sensor` \*sensor)  
*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 * sensor ) [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
------------------------	-----------------------------------

Implements [Menu](#).

#### 4.8.1.3 show() [2/2]

```
void CLMenu::show (
    std::vector< Sensor * > sensors ) [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
----------------	---------------------------------

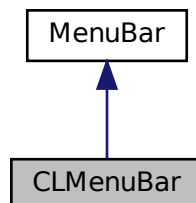
Implements [Menu](#).

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

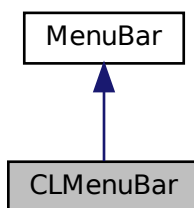
- include/[CLMenu.h](#)
- src/[CLMenu.cpp](#)

## 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](#).

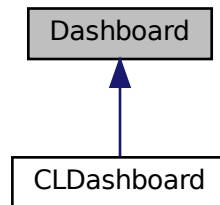
The documentation for this class was generated from the following files:

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

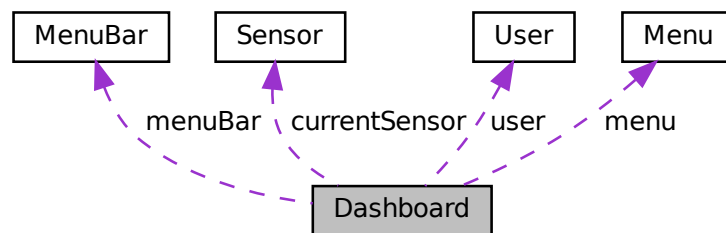


## 4.10 Dashboard Class Reference

Inheritance diagram for Dashboard:



Collaboration diagram for Dashboard:



### Public Member Functions

- 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 **setUser** (User user)  
*Adds the user to the dashboard.*
- 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 `cleanSensor` ()
    - Deletes all the sensors 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` (const std::string type="CLI")
  - Create a new instance of the desired `Dashboard` interface.*

## 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>	<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 `cleanSensor()`

```
void Dashboard::cleanSensor ( )
```

Deletes all the sensors from the dashboard.

##### Note

Only called when exiting the dashboard

#### 4.10.1.8 `Create()`

```
Dashboard * Dashboard::Create (
    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\*

**4.10.1.9 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](#)

**4.10.1.10 exit()**

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

Exits the dashboard and finishes the program.

## See also

[cleanSensor](#)

**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 )
----------	--

#### 4.10.1.13 setUser()

```
void Dashboard::setUser (
    User user )
```

Adds the user to the dashboard.

##### Parameters

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

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 [addUser](#) ([User](#))  
*adds a new user to the database*
- [User](#) [getUser](#) (std::string employeeNumber, std::string NIF)  
*Get the [User](#) object in the database, if not found returns default user.*

#### 4.11.1 Member Function Documentation

##### 4.11.1.1 addUser()

```
void Database::addUser (
    User newUser )
```

adds a new user to the database

#### 4.11.1.2 getUser()

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

Get the [User](#) object in the database, if not found returns default user.

##### Parameters

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

##### Returns

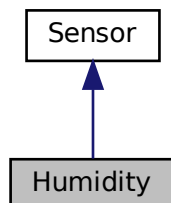
[User](#)

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

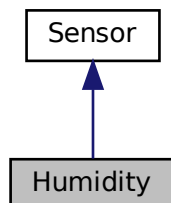
- include/[Database.h](#)
- src/[Database.cpp](#)

## 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.*
- std::vector< int > [requestData](#) ()  
*Request data from the humidity sensor.*

## 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

### 4.12.2 Member Function Documentation

#### 4.12.2.1 requestData()

```
std::vector< int > Humidity::requestData ( ) [virtual]
```

Request data from the humidity sensor.

##### Returns

std::vector<int> Data values

##### Note

This function is a placeholder, returns random values

Implements [Sensor](#).

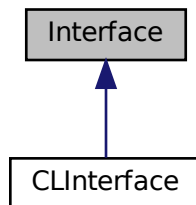
The documentation for this class was generated from the following files:

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

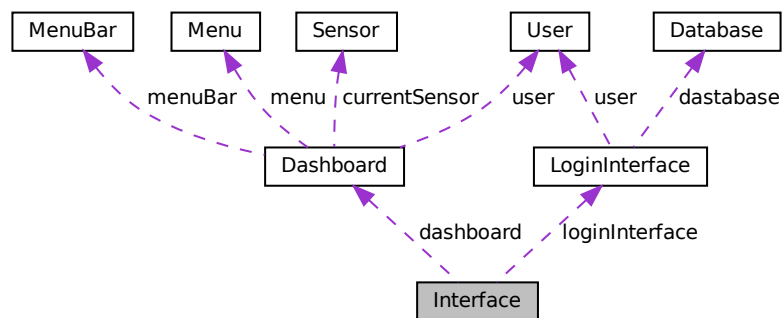


## 4.13 Interface Class Reference

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 withouth 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

### 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

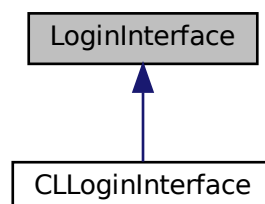
This method is used when the user executes the main with the NIF and employee number

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

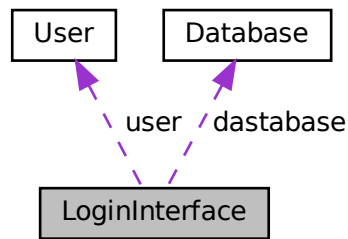
- [include/Interface.h](#)
- [src/Interface.cpp](#)

## 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
- bool **checkUser** ()

*Check if the user data corresponds to a real user and stores the user.*

- **User** **getUser** ()

*Returns the user that has previously logged in.*

## Static Public Member Functions

- static **LoginInterface** \* **Create** (const std::string="CLI")

*Create a new Login interface instance of the type specified.*

## Protected Attributes

- std::string **inputNIF**
- std::string **inputEmployeeNumber**
- **User** **user**
- **Database** **dastabase**

### 4.14.1 Member Function Documentation

#### 4.14.1.1 checkUser()

```
bool LoginInterface::checkUser ( )
```

Check if the user data corresponds to a real user and stores the user.

##### Returns

true = The user exists

false = The user does not exists

#### 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

#### 4.14.1.3 getUser()

```
User LoginInterface::getUser ( )
```

Returns the user that has previously logged in.

##### Returns

User

##### See also

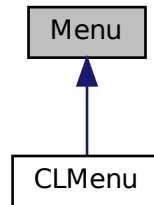
[checkUser\(\)](#)

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](#) \* >)=0
- virtual void **show** ([Sensor](#) \*)=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

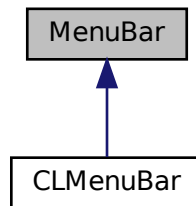
[Menu](#)\* New menu instance

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:



### Public Member Functions

- virtual void **show** ()=0
- void [setUserName](#) (std::string userName)  
*Sets the user name.*
- 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

- std::string **userName**
- 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>	
--------------------	--

**4.16.1.3 setUsername()**

```
void MenuBar::setUserName (
    std::string userName )
```

Sets the user name.

**Parameters**

<i>userName</i>	
-----------------	--

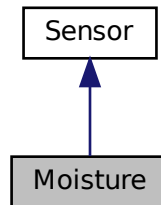
The documentation for this class was generated from the following files:

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

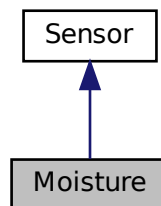


## 4.17 Moisture Class Reference

Inheritance diagram for Moisture:



Collaboration diagram for Moisture:



### Public Member Functions

- [Moisture](#) (bool active=false, int valPerMin=1)  
*Create a new [Moisture](#) object.*
- std::vector< int > [requestData](#) ()  
*Request data from the moisture sensor.*

### 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

## 4.17.2 Member Function Documentation

### 4.17.2.1 requestData()

```
std::vector< int > Moisture::requestData ( ) [virtual]
```

Request data from the moisture sensor.

## Returns

std::vector<int> Data values

## Note

This function is a placeholder, returns random values

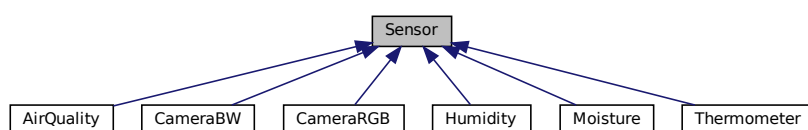
Implements [Sensor](#).

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

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

## 4.18 Sensor Class Reference

Inheritance diagram for Sensor:



## Public Member Functions

- [Sensor](#) (std::string id="0000", std::string type="none", std::string magnitude="-", bool active=true, int valPerMin=1)  
Construct a new [Sensor::Sensor](#) object.
- std::string [getId](#) ()  
Returns the sensor id.
- std::string [getType](#) ()  
Returns the sensor type.
- void [setActive](#) (bool)  
Turns the sensor On/Off.
- bool [isActive](#) ()  
Returns if the sensor is On/Off.
- void [setArea](#) (std::string)  
Set the area of the sensor.
- std::string [getArea](#) ()  
Returns the area of the sensor.
- void [setMagnitude](#) (std::string magnitude)  
Set the sensor data values magnitude.
- std::string [getMagnitude](#) ()  
Returns the sensor magnitude.
- void [setValPerMin](#) (int valPerMin)  
Set the number of values per min.
- int [getValPerMin](#) ()  
Return the number of values per min.
- virtual std::vector< int > [requestData](#) ()=0

## Static Public Member Functions

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

## Protected Member Functions

- void [addNewData](#) (int)
- void [removeOldData](#) (int)

## Protected Attributes

- std::string **id**
- bool **active**
- std::string **type**
- std::string **area**
- std::vector< int > **data**
- std::string **magnitude**
- int **valPerMin**

### 4.18.1 Constructor & Destructor Documentation

#### 4.18.1.1 Sensor()

```
Sensor::Sensor (
    std::string id = "0000",
    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

### 4.18.2 Member Function Documentation

#### 4.18.2.1 Create()

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

Creates an instance of the sensor type.

##### Parameters

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

##### Returns

[Sensor](#)\*

#### 4.18.2.2 getArea()

```
std::string Sensor::getArea ( )
```

Returns the area of the sensor.

##### Returns

std::string Area

#### 4.18.2.3 getId()

```
std::string Sensor::getId ( )
```

Returns the sensor id.

Returns

std::string ID

#### 4.18.2.4 getMagnitude()

```
std::string Sensor::getMagnitude ( )
```

Returns the sensor magnitude.

Returns

std::string Magnitude

#### 4.18.2.5 getType()

```
std::string Sensor::getType ( )
```

Returns the sensor type.

Returns

std::string [Sensor](#) type

#### 4.18.2.6 getValPerMin()

```
int Sensor::getValPerMin ( )
```

Return the number of values per min.

Returns

int Values per minute

#### 4.18.2.7 isActive()

```
bool Sensor::isActive ( )
```

Returns if the sensor is On/Off.

##### Returns

true = ON

false = OFF

#### 4.18.2.8 setActive()

```
void Sensor::setActive (
    bool active )
```

Turns the sensor On/Off.

##### Parameters

<i>active</i>	
---------------	--

#### 4.18.2.9 setArea()

```
void Sensor::setArea (
    std::string area )
```

Set the area of the sensor.

##### Parameters

<i>area</i>	
-------------	--

#### 4.18.2.10 setMagnitude()

```
void Sensor::setMagnitude (
    std::string magnitude )
```

Set the sensor data values magnitude.

##### Parameters

<i>magnitude</i>	
------------------	--

#### 4.18.2.11 setValPerMin()

```
void Sensor::setValPerMin (
    int valPerMin )
```

Set the number of values per min.

##### Parameters

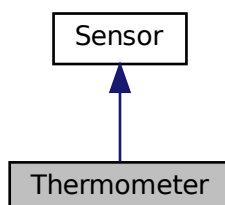
<i>valPerMin</i>	
------------------	--

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

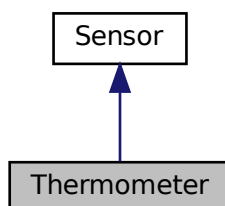
- include/[Sensor.h](#)
- src/[Sensor.cpp](#)

## 4.19 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.*
- std::vector< int > [requestData](#) ()  
*Request data from the thermometer.*

## Additional Inherited Members

### 4.19.1 Constructor & Destructor Documentation

#### 4.19.1.1 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

### 4.19.2 Member Function Documentation

#### 4.19.2.1 requestData()

```
std::vector< int > Thermometer::requestData ( ) [virtual]
```

Request data from the thermometer.

##### Returns

std::vector<int> Data values

##### Note

This function is a placeholder, returns random values

Implements [Sensor](#).

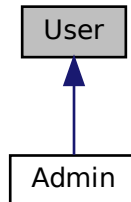
The documentation for this class was generated from the following files:

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



## 4.20 User Class Reference

Inheritance diagram for User:



### Public Member Functions

- **User** (std::string number="00000", std::string nif="00000000", std::string name="default")  
*Create a new **User**.*
- bool **isSameNIF** (std::string)  
*Check if the user has the input NIF.*
- bool **isSameEmployeeNumber** (std::string)  
*Check if the user has the input employee number.*
- std::string **getName** ()  
*Returns the user name.*
- void **addTimestamp** ()  
*Set the timestamp.*
- std::string **getTimestamp** ()  
*Returns the timestamp.*
- bool **hasAdminPermission** ()  
*Returns the user permissions.*
- bool **operator<** (const **User** &) const
- bool **operator==** (const **User** &) const

### Protected Member Functions

- void **setNIF** (std::string)  
*Set the user NIF.*
- void **setEmployeeNumber** (std::string)  
*Set the user employee number.*

### Protected Attributes

- std::string **name**
- std::string **NIF**
- std::string **employeeNumber**
- std::string **lastLogTime**
- bool **adminPermission**

## Friends

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

## 4.20.1 Constructor & Destructor Documentation

### 4.20.1.1 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>	

## 4.20.2 Member Function Documentation

### 4.20.2.1 addTimestamp()

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

Set the timestamp.

### 4.20.2.2 getName()

```
std::string User::getName ( )
```

Returns the user name.

#### Returns

`std::string User name`

#### 4.20.2.3 `getTimestamp()`

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

Returns the timestamp.

##### Returns

std::string Timestamp

#### 4.20.2.4 `hasAdminPermission()`

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

Returns the user permissions.

##### Returns

true = has admin permissions

false = does not have admin permissions

#### 4.20.2.5 `isSameEmployeeNumber()`

```
bool User::isSameEmployeeNumber (
    std::string employeeNumber )
```

Check if the user has the input employee number.

##### Parameters

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

##### Returns

true = is the same employee number

false = is not the same employee number

#### 4.20.2.6 `isSameNIF()`

```
bool User::isSameNIF (
    std::string NIF )
```

Check if the user has the input NIF.

**Parameters**

$N \leftrightarrow$ <i>IF</i>	
----------------------------------	--

**Returns**

true = is the same NIF

false = is not the same NIF

**4.20.2.7 setEmployeeNumber()**

```
void User::setEmployeeNumber (
    std::string employeeNumber ) [protected]
```

Set the user employee number.

**Parameters**

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

**4.20.2.8 setNIF()**

```
void User::setNIF (
    std::string NIF ) [protected]
```

Set the user NIF.

**Parameters**

$N \leftrightarrow$ <i>IF</i>	
----------------------------------	--

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

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

## Chapter 5

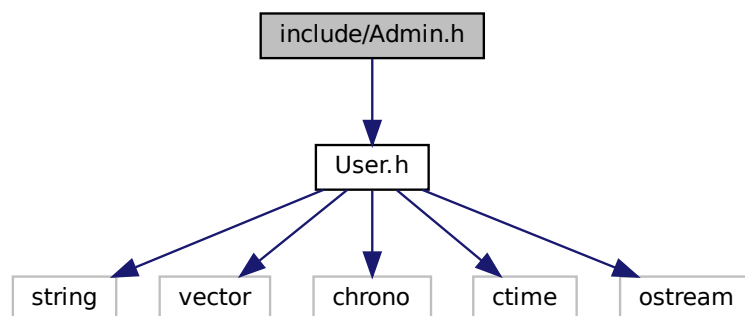
# File Documentation

### 5.1 include/Admin.h File Reference

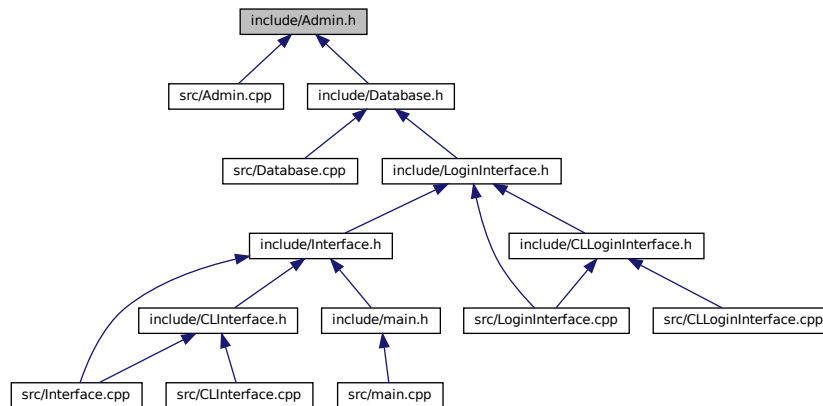
Header file of [Admin.cpp](#).

```
#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

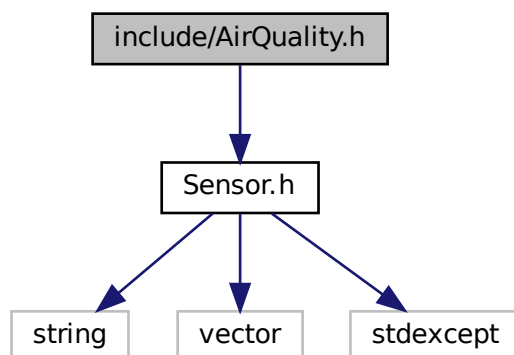
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## 5.2 include/AirQuality.h File Reference

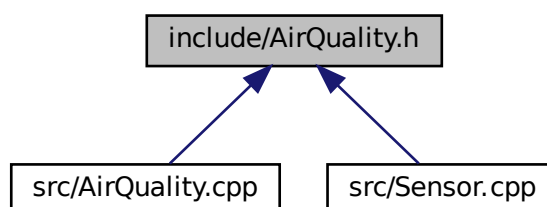
Header file of [AirQuality.cpp](#).

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

Include dependency graph for AirQuality.h:



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



### Classes

- class [AirQuality](#)

#### 5.2.1 Detailed Description

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

**Author**

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

**Version**

1.0

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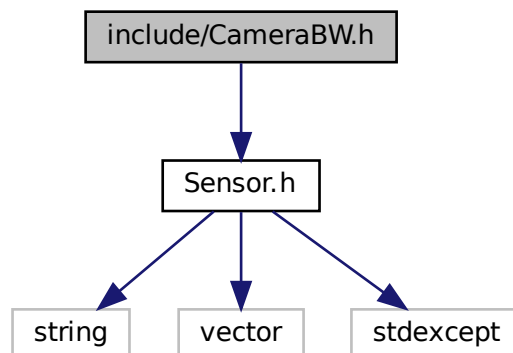
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## 5.3 include/CameraBW.h File Reference

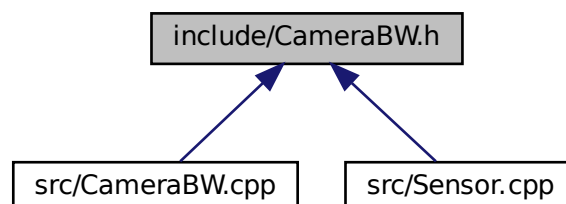
Header file of [CameraBW.cpp](#).

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

Include dependency graph for CameraBW.h:



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





## Classes

- class [CameraBW](#)

### 5.3.1 Detailed Description

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

#### Author

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

#### Version

1.0

#### Date

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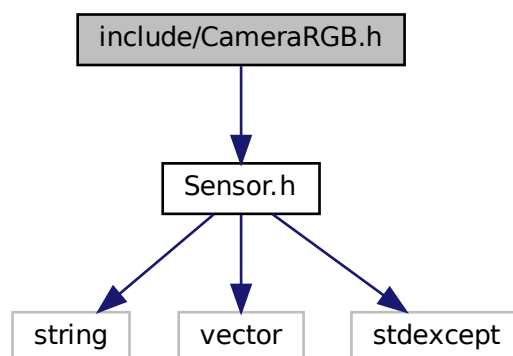
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## 5.4 include/CameraRGB.h File Reference

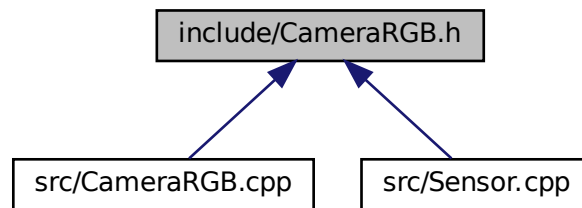
Header file of [CameraRGB.cpp](#).

```
#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

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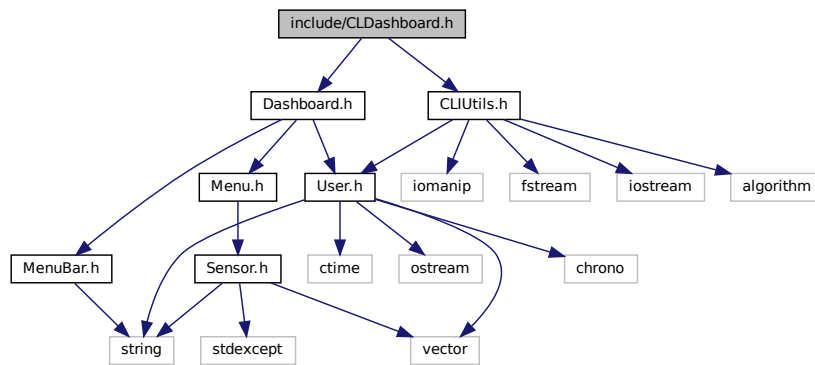
## 5.5 include/CLDashboard.h File Reference

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

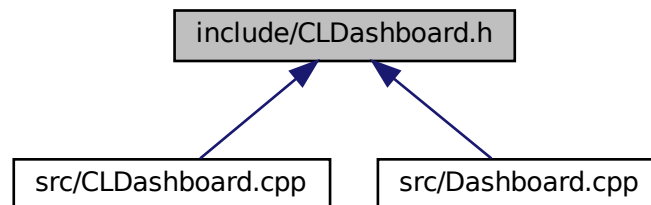
```
#include "Dashboard.h"
```

```
#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

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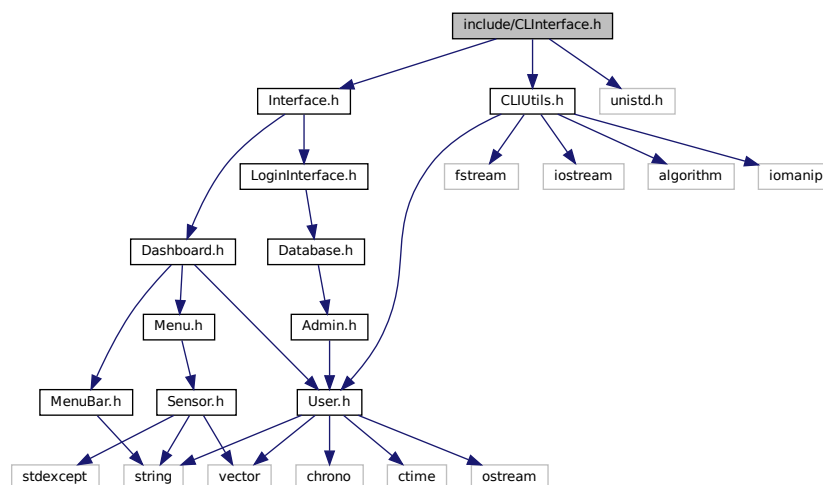
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## 5.6 include/CLInterface.h File Reference

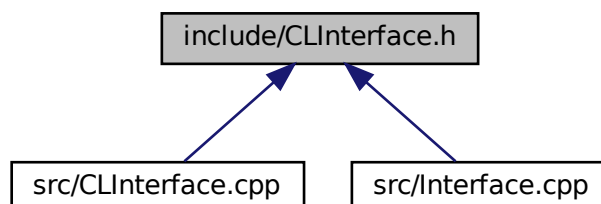
Header file of [CLInterface.cpp](#).

```
#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

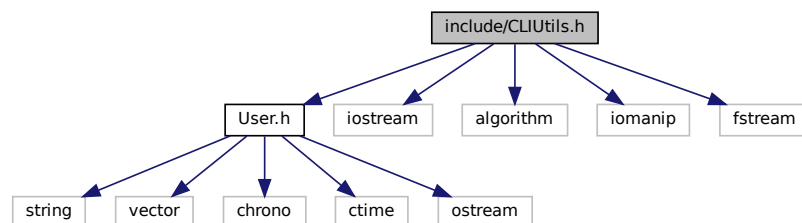
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## 5.7 include/CLIUtils.h File Reference

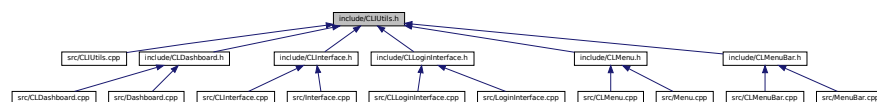
Header file of [CLIUtils.cpp](#).

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

Include 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, const std::string color="none")  
*Print the contents of the file in the center.*
- void **printCenter** (const std::string toPrint, const int padding=0)  
*Print the string in the center.*
- void **printCenter** (const std::string toPrint, const std::string color, const int padding=0)  
*Print the string in the center.*
- void **printRight** (const std::string toPrint, const int padding=0)
- void **printRight** (const std::string toPrint, const std::string color, const int padding=0)
- void **printLeft** (const std::string toPrint, const int padding=0)
- void **printLeft** (const std::string toPrint, const std::string color, const int padding=0)
- void **printColor** (std::string, std::string="none")  
*Print the string to the terminal in the given color.*
- std::string **setColor** (std::string)  
*Set the Color to print.*
- 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, 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() [1/2]

```
void printCenter (
    const std::string toPrint,
    const int padding = 0 )
```

Print the string in the center.

## Parameters

<i>toPrint</i>	
<i>padding</i>	

**5.7.2.2 printCenter()** [2/2]

```
void printCenter (
    const std::string toPrint,
    const std::string color,
    const int padding = 0 )
```

Print the string in the center.

## Parameters

<i>toPrint</i>	
<i>padding</i>	
<i>color</i>	

**5.7.2.3 printCenterFromFile()**

```
void printCenterFromFile (
    const std::string fileName,
    const std::string color = "none" )
```

Print the contents of the file in the center.

## Parameters

<i>fileName</i>	
<i>color</i>	

**5.7.2.4 printColor()**

```
void printColor (
    std::string ,
    std::string = "none" )
```

Print the string to the terminal in the given color.

## Parameters

<i>toPrint</i>	
<i>color</i>	

## 5.7.2.5 setColor()

```
std::string setColor (
    std::string )
```

Set the Color to print.

## Parameters

<i>color</i>	
--------------	--

## Returns

std::string

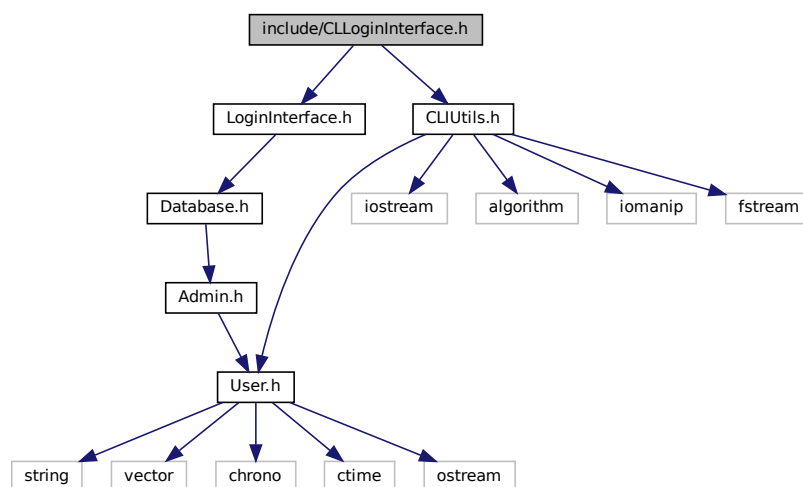
## 5.8 include/CLoginInterface.h File Reference

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

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

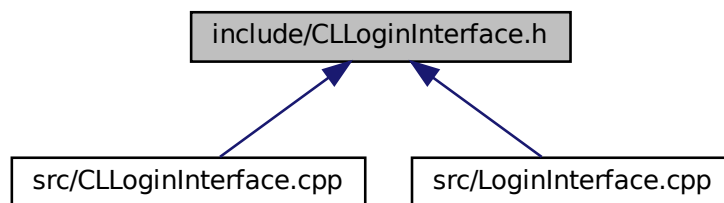
```
#include "CLIUtils.h"
```

Include dependency graph for CLoginInterface.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

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#### Date

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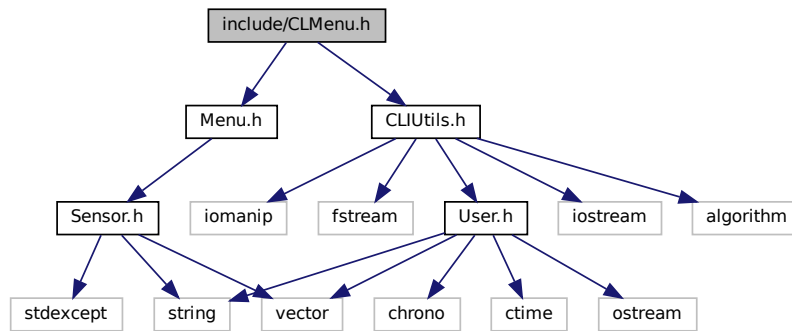
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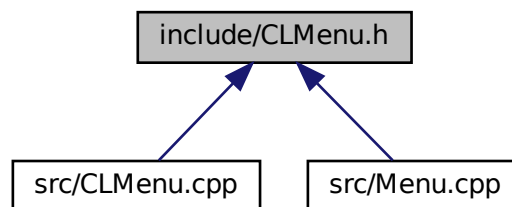
## 5.9 include/CLMenu.h File Reference

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

1.0

## Date

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## Copyright

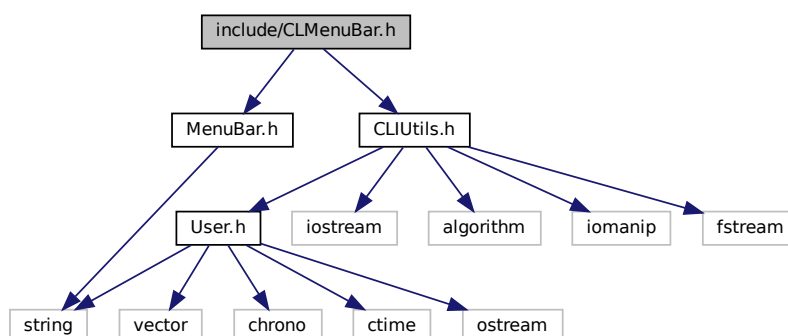
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## 5.10 include/CLMenuBar.h File Reference

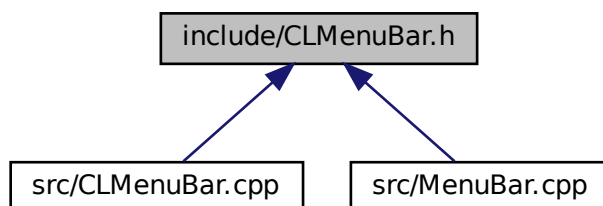
Header file of [CLMenuBar.cpp](#).

```
#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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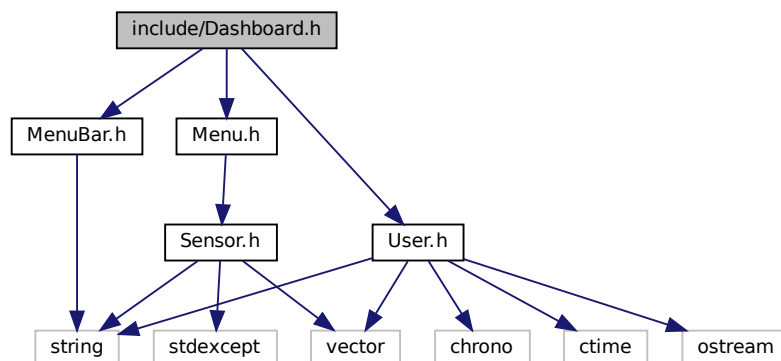
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## 5.11 include/Dashboard.h File Reference

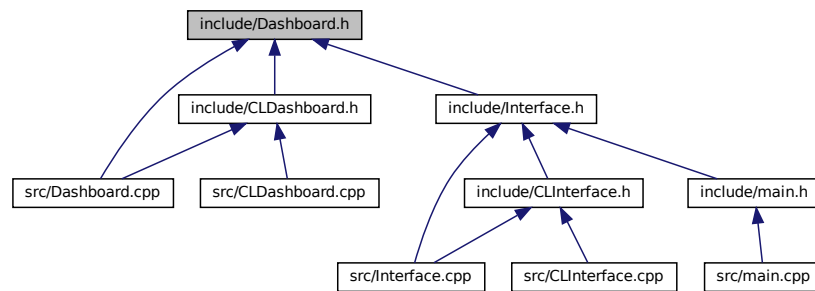
Header file of [Dashboard.cpp](#).

```
#include "User.h"  
#include "MenuBar.h"  
#include "Menu.h"
```

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

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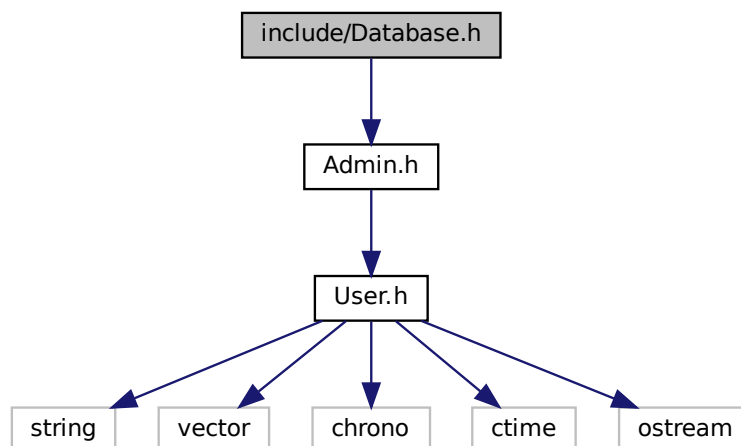
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## 5.12 include/Database.h File Reference

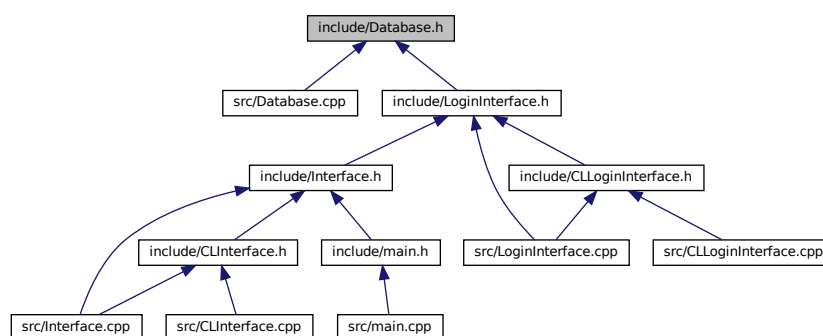
Header file of [Database.cpp](#).

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

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

#### Copyright

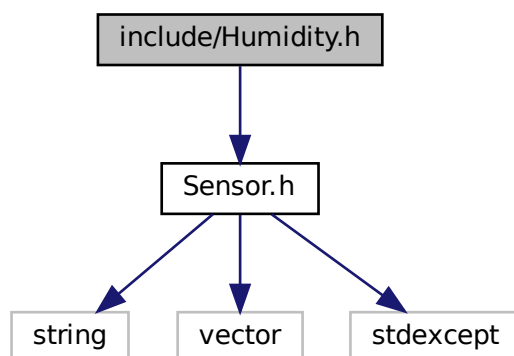
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## 5.13 include/Humidity.h File Reference

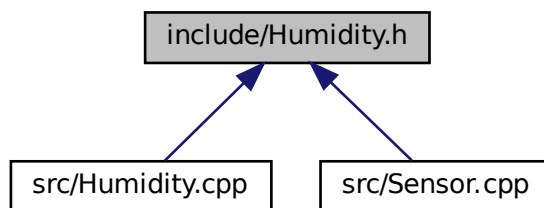
Header file of [Humidity.cpp](#).

```
#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

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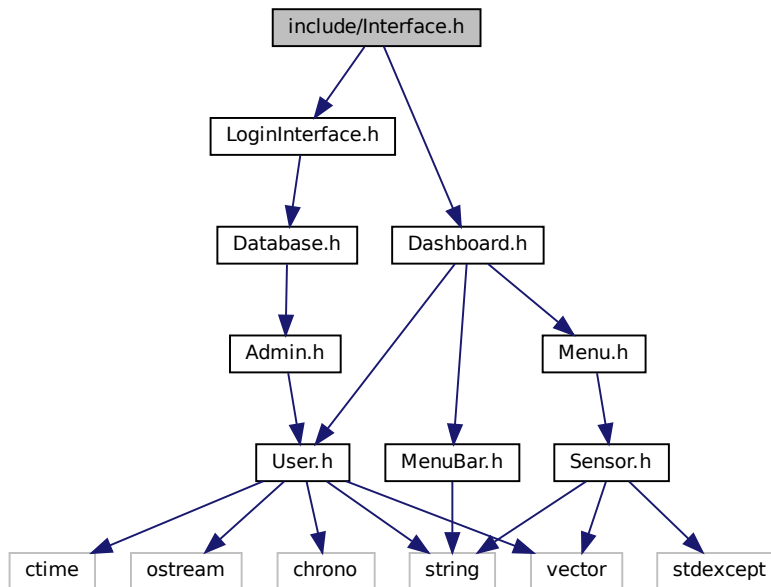
## 5.14 include/Interface.h File Reference

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

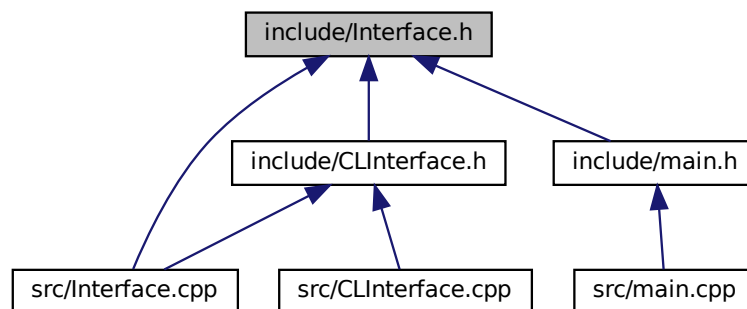
```
#include "LoginInterface.h"
```

```
#include "Dashboard.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

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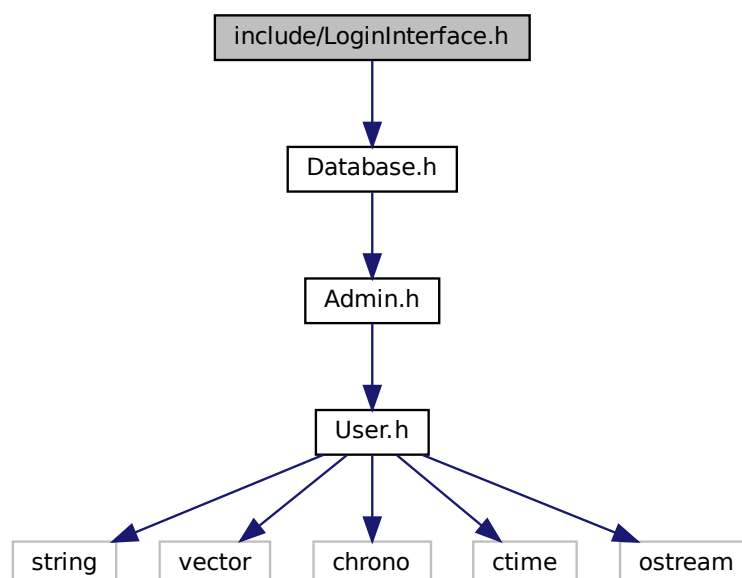
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## 5.15 include/LoginInterface.h File Reference

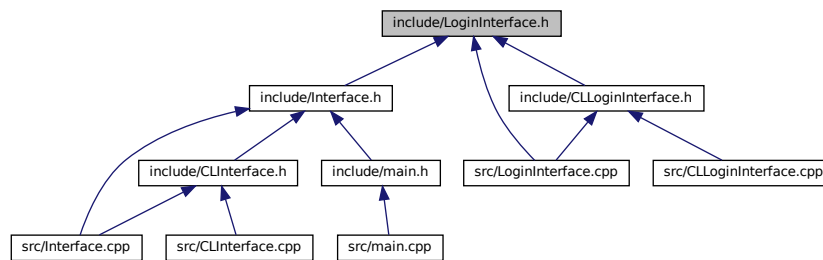
Header file of [LoginInterface.cpp](#).

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

#### Version

1.0

#### Date

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#### Copyright

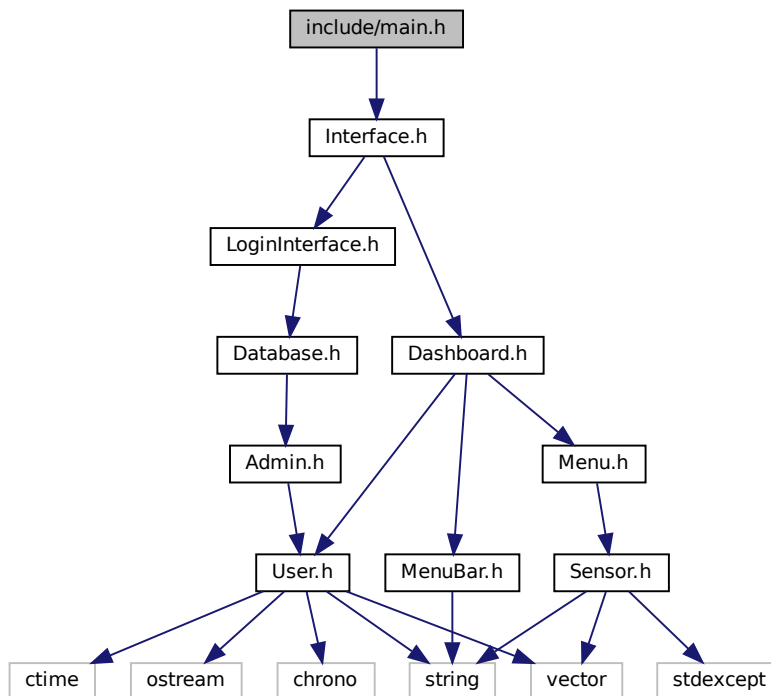
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## 5.16 include/main.h File Reference

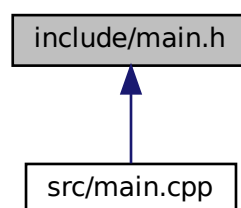
Header file of [main.cpp](#).

```
#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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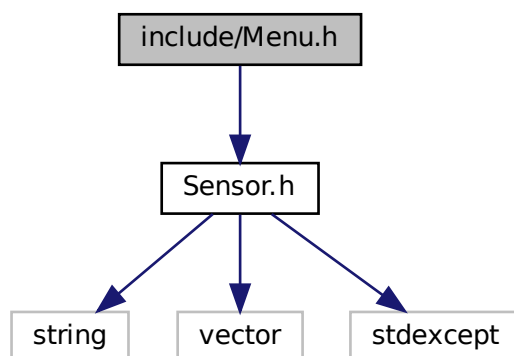
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## 5.17 include/Menu.h File Reference

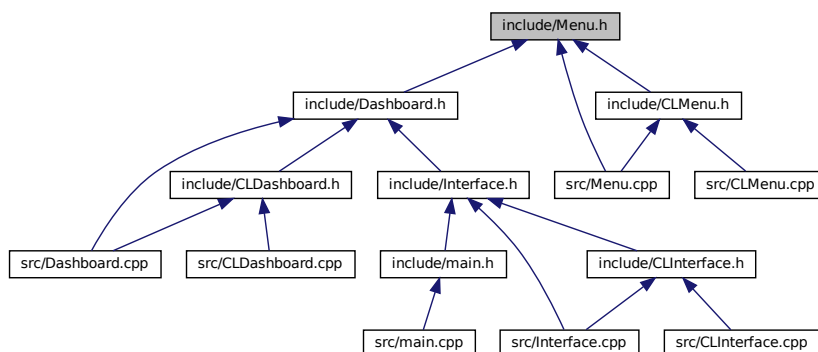
Header file of [Menu.cpp](#).

```
#include "Sensor.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

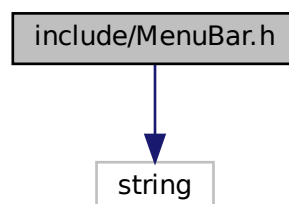
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## 5.18 include/MenuBar.h File Reference

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

```
#include <string>
```

Include dependency graph for MenuBar.h:



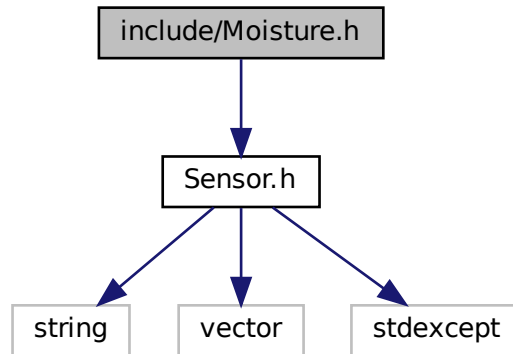


## 5.19 include/Moisture.h File Reference

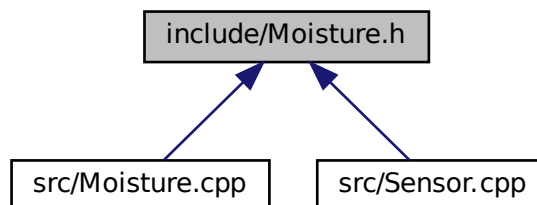
Header file of [Moisture.cpp](#).

```
#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

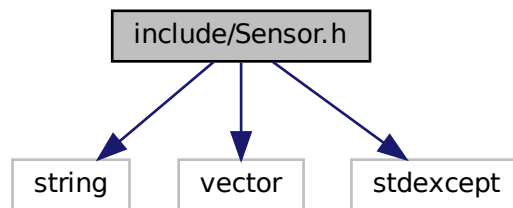
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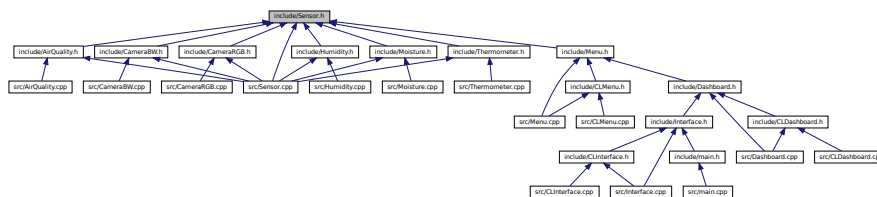
## 5.20 include/Sensor.h File Reference

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

```
#include <string>
#include <vector>
#include <stdexcept>
Include dependency graph for Sensor.h:
```



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



## Classes

- class [Sensor](#)

### 5.20.1 Detailed Description

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

#### Author

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

#### Version

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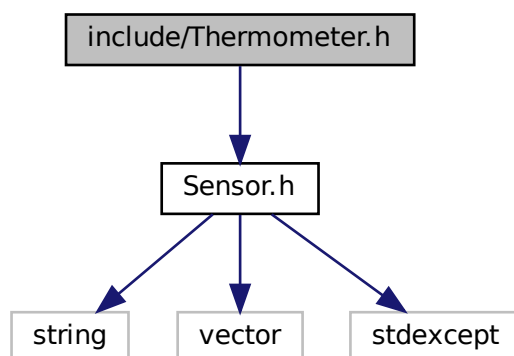
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## 5.21 include/Thermometer.h File Reference

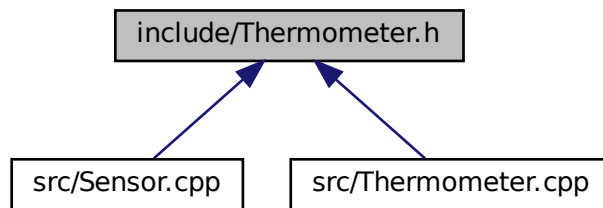
Header file of [Thermometer.cpp](#).

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

Include dependency graph for Thermometer.h:



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



## Classes

- class [Thermometer](#)

### 5.21.1 Detailed Description

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

#### Author

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

#### Version

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#### Date

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**Date**

2022-11-23

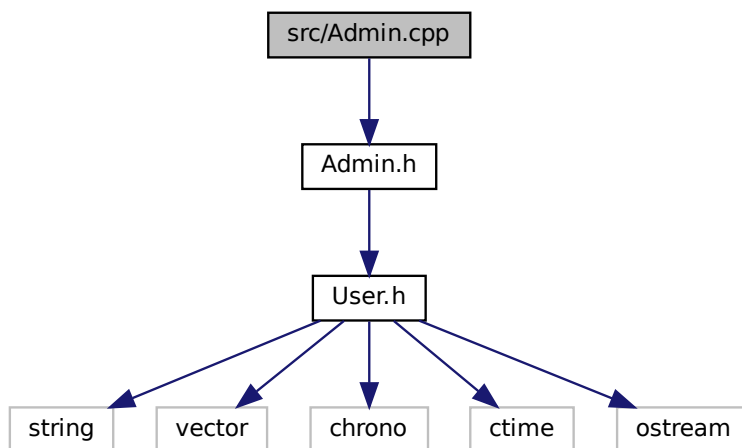
**Copyright**

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## 5.23 src/Admin.cpp File Reference

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

Include dependency graph for Admin.cpp:



### 5.23.1 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

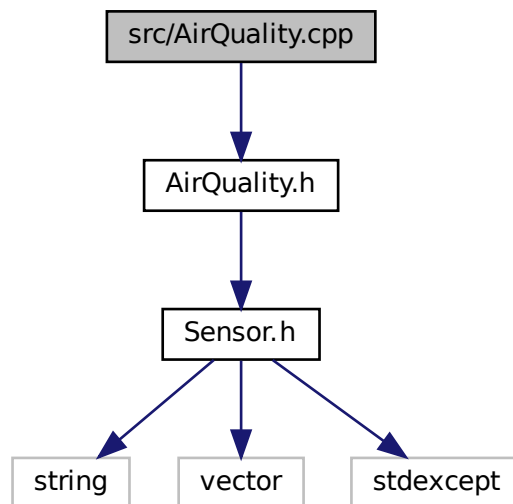
**Copyright**

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## 5.24 src/AirQuality.cpp File Reference

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

Include dependency graph for AirQuality.cpp:



### 5.24.1 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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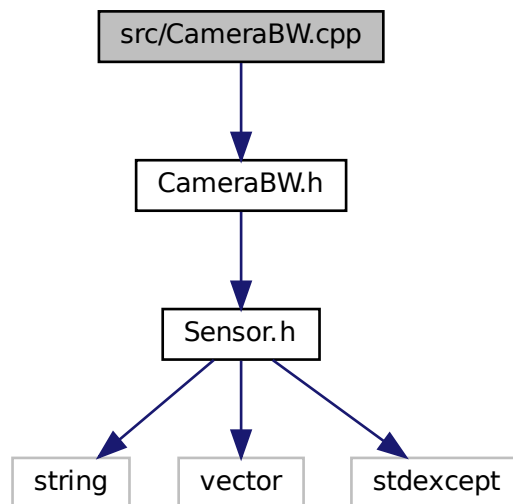
#### Copyright

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## 5.25 src/CameraBW.cpp File Reference

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

Include dependency graph for CameraBW.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

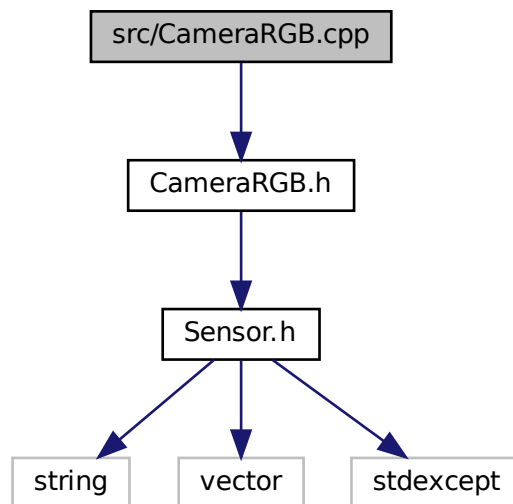
#### Copyright

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## 5.26 src/CameraRGB.cpp File Reference

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

Include dependency graph for CameraRGB.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

#### Copyright

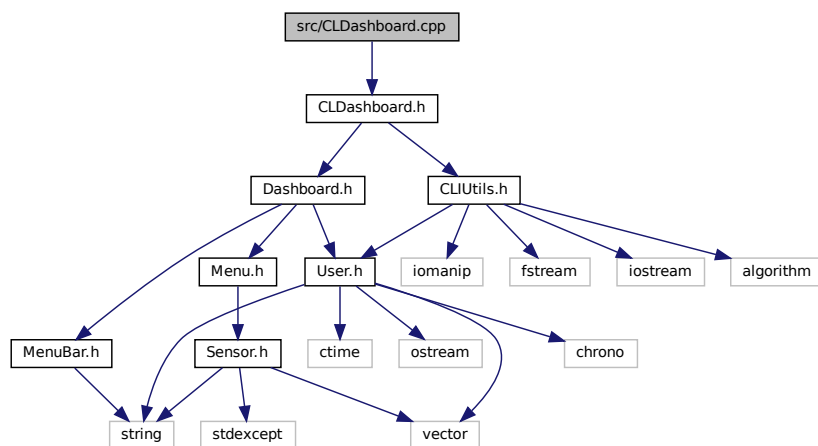
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## 5.27 src/CLDashboard.cpp File Reference

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

Include dependency graph for CLDashboard.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

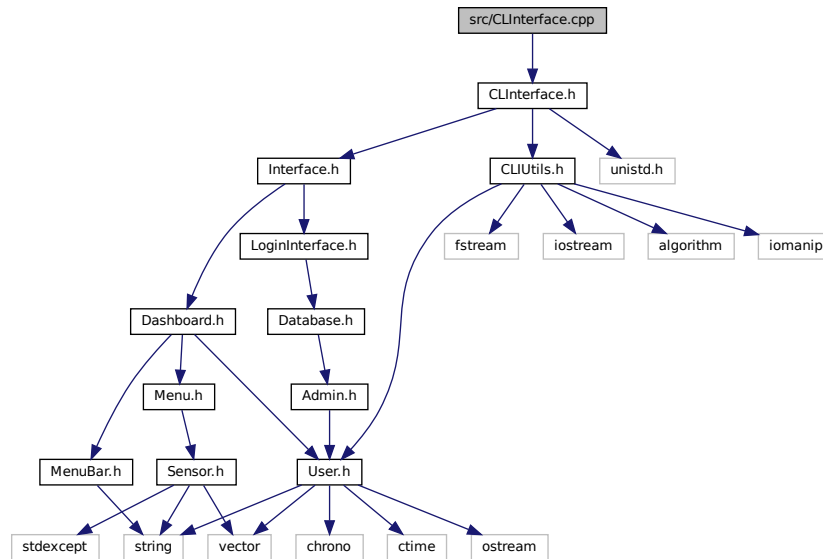
#### Copyright

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## 5.28 src/CLInterface.cpp File Reference

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

Include dependency graph for CLInterface.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

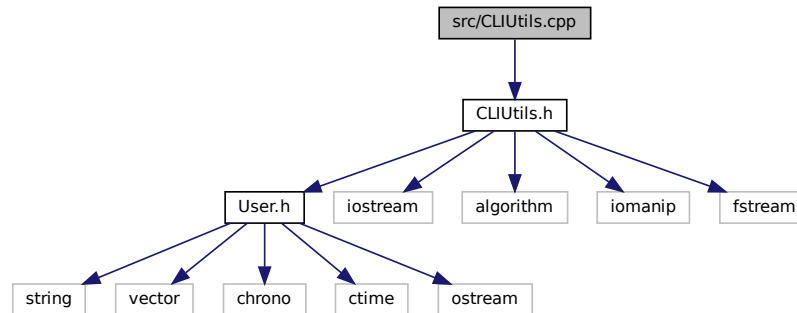
#### Copyright

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## 5.29 src/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::string color)  
*Print the contents of the file in the center.*
- void **printCenter** (const std::string toPrint, const int padding)  
*Print the string in the center.*
- void **printCenter** (const std::string toPrint, const std::string color, const int padding)  
*Print the string in the center.*
- void **printRight** (const std::string toPrint, const int padding)
- void **printRight** (const std::string toPrint, const std::string color, const int padding)
- void **printLeft** (const std::string toPrint, const int padding)
- void **printLeft** (const std::string toPrint, const std::string color, const int padding)
- void **printColor** (std::string toPrint, std::string color)  
*Print the string to the terminal in the given color.*
- std::string **setColor** (std::string color)  
*Set the Color to print.*
- 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, int valPerY, int posX, int posY, int scale)

### Variables

- int **terminalWidth**
- int **terminalHeight**

### 5.29.1 Detailed Description

#### Author

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

#### Version

1.0

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### 5.29.2 Function Documentation

#### 5.29.2.1 `printCenter()` [1/2]

```
void printCenter (
    const std::string toPrint,
    const int padding = 0 )
```

Print the string in the center.

#### Parameters

<i>toPrint</i>	
<i>padding</i>	

#### 5.29.2.2 `printCenter()` [2/2]

```
void printCenter (
    const std::string toPrint,
    const std::string color,
    const int padding = 0 )
```

Print the string in the center.

## Parameters

<i>toPrint</i>	
<i>padding</i>	
<i>color</i>	

**5.29.2.3 printCenterFromFile()**

```
void printCenterFromFile (
    const std::string fileName,
    const std::string color = "none" )
```

Print the contents of the file in the center.

## Parameters

<i>fileName</i>	
<i>color</i>	

**5.29.2.4 printColor()**

```
void printColor (
    std::string ,
    std::string = "none" )
```

Print the string to the terminal in the given color.

## Parameters

<i>toPrint</i>	
<i>color</i>	

**5.29.2.5 setColor()**

```
std::string setColor (
    std::string )
```

Set the Color to print.

## Parameters

<i>color</i>	
--------------	--

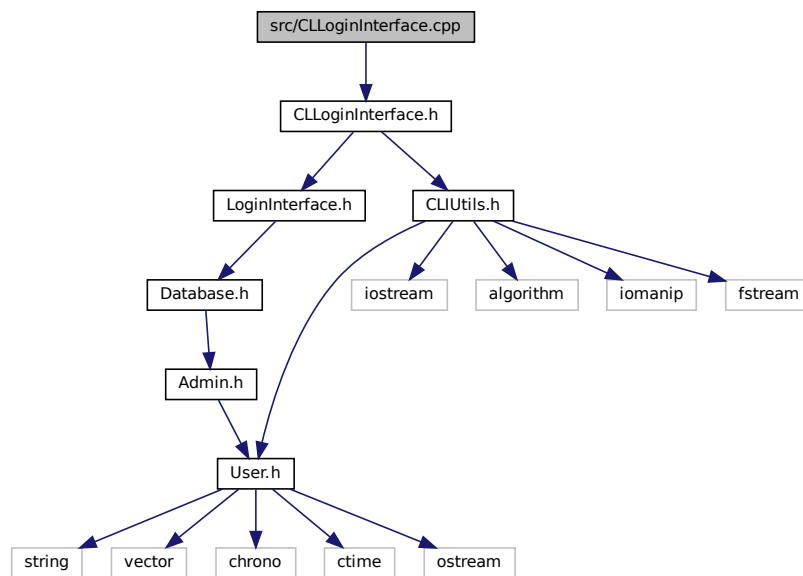
**Returns**

std::string

## 5.30 src/CLLoginInterface.cpp File Reference

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

Include dependency graph for CLLoginInterface.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

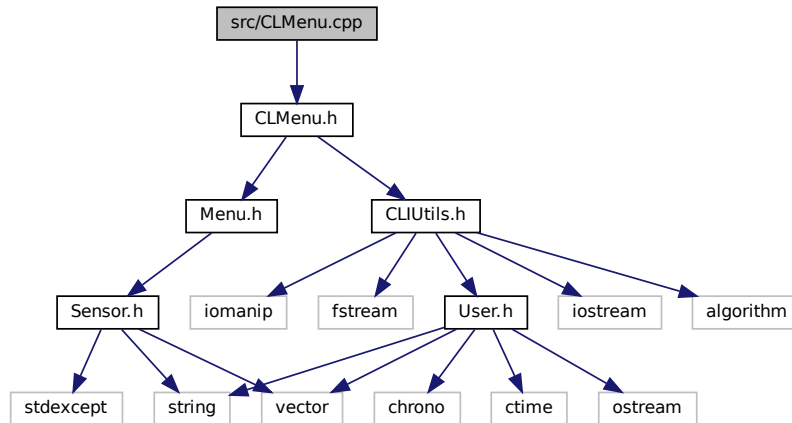
**Copyright**

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## 5.31 src/CLMenu.cpp File Reference

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

Include dependency graph for CLMenu.cpp:



### 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

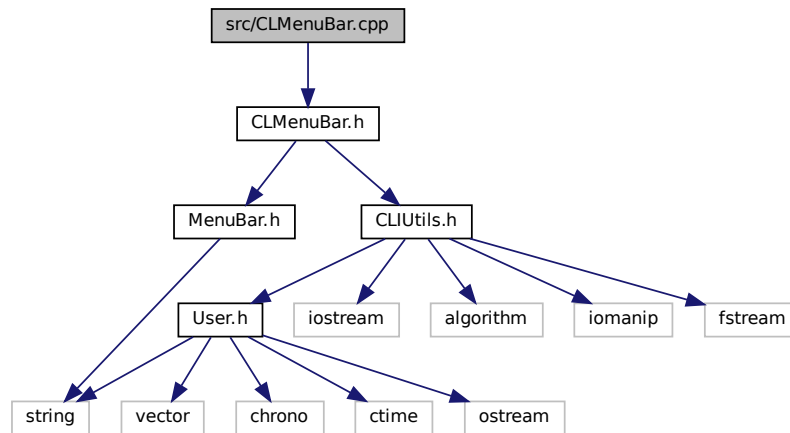
#### Copyright

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## 5.32 src/CLMenuBar.cpp File Reference

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

Include dependency graph for CLMenuBar.cpp:



### 5.32.1 Detailed Description

#### Author

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

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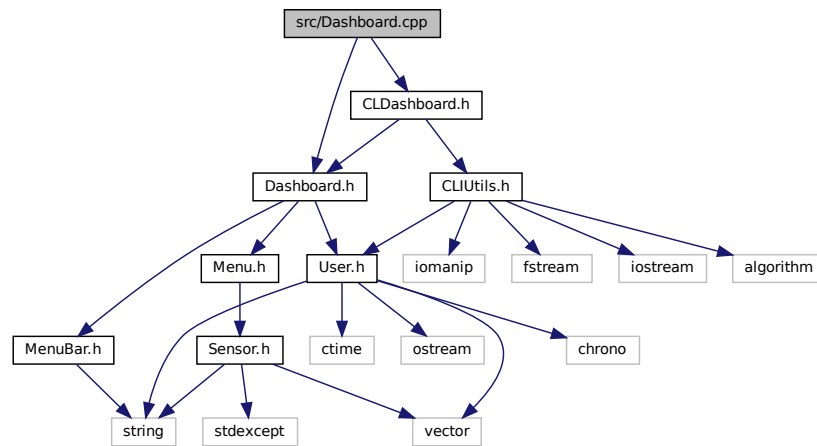
## 5.33 src/Dashboard.cpp File Reference

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

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



Include dependency graph for Dashboard.cpp:



### 5.33.1 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

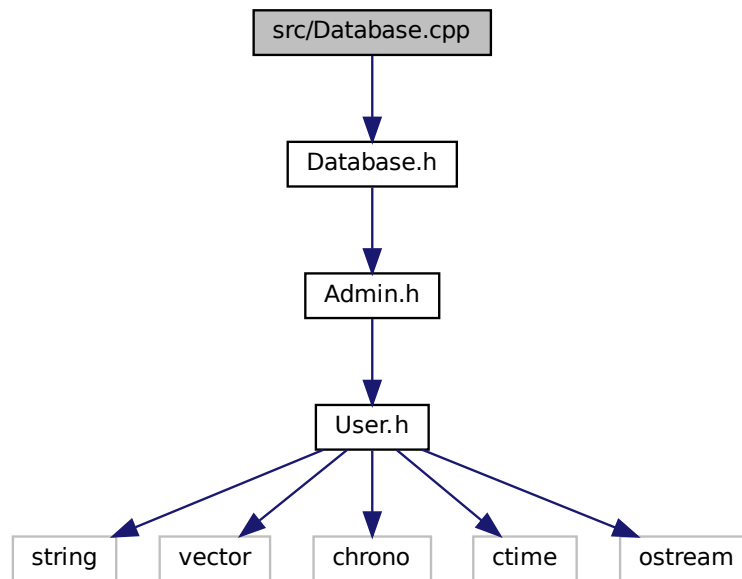
Copyright

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## 5.34 src/Database.cpp File Reference

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

Include dependency graph for Database.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

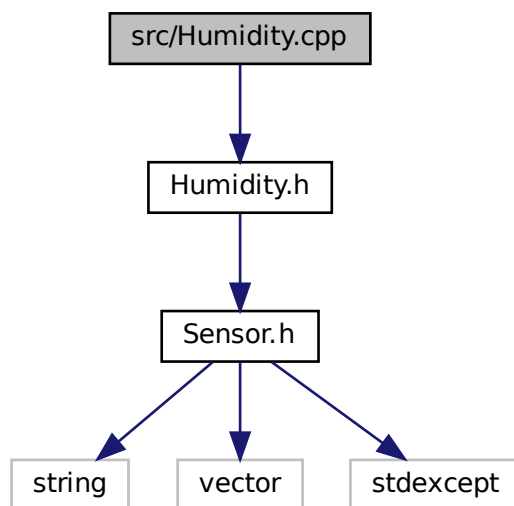
#### Copyright

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## 5.35 src/Humidity.cpp File Reference

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

Include dependency graph for Humidity.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

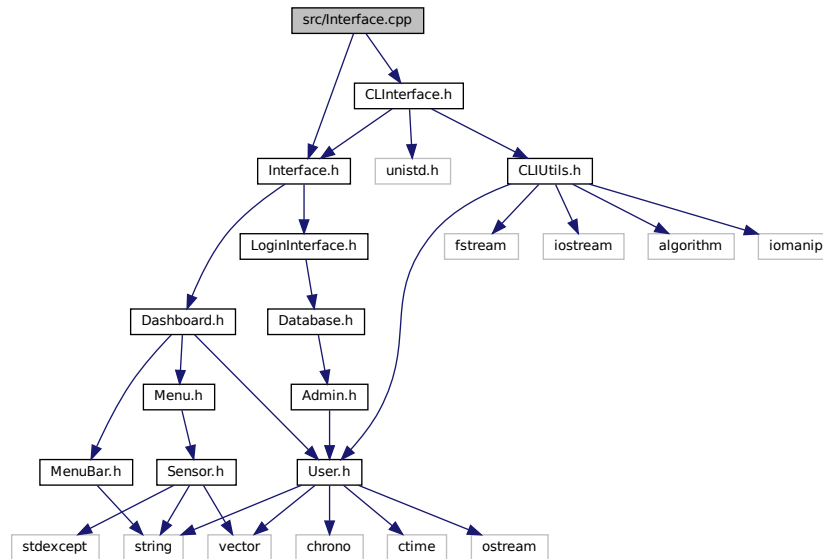
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## 5.36 src/Interface.cpp File Reference

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

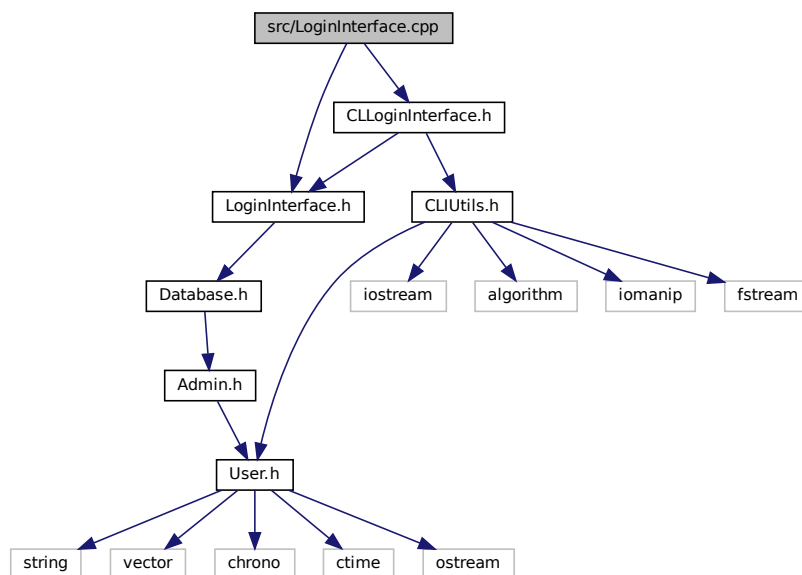
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## 5.37 src/LoginInterface.cpp File Reference

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

2022-11-23

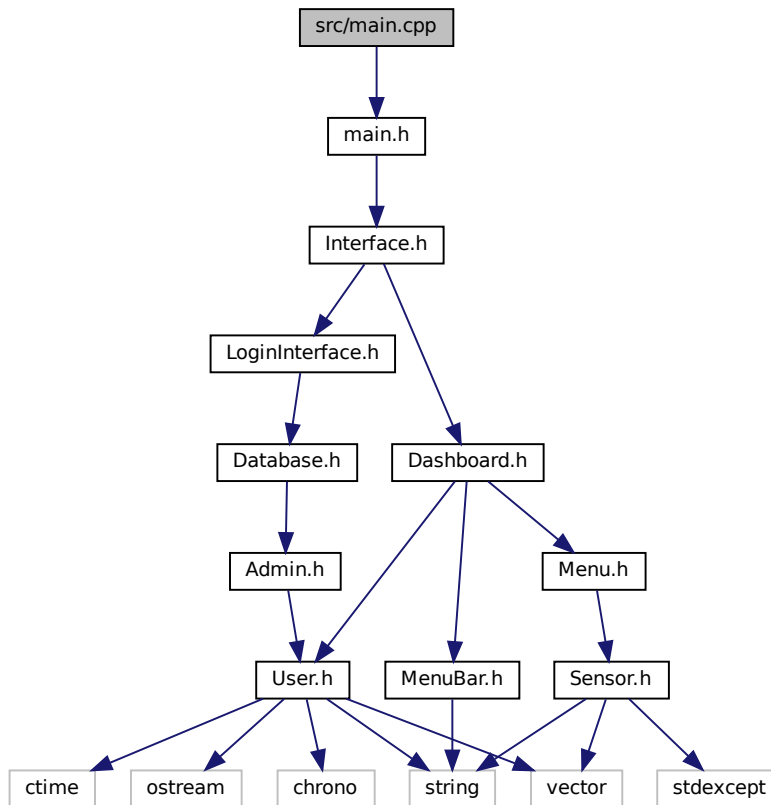
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## 5.38 src/main.cpp File Reference

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

Include dependency graph for main.cpp:



### Functions

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

### 5.38.1 Detailed Description

#### Author

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

#### Version

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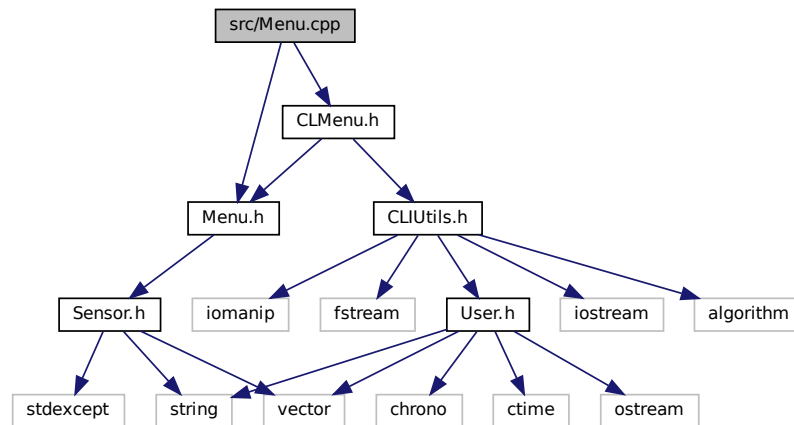
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## 5.39 src/Menu.cpp File Reference

```
#include "Menu.h"
```

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

Include dependency graph for Menu.cpp:



### 5.39.1 Detailed Description

#### Author

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

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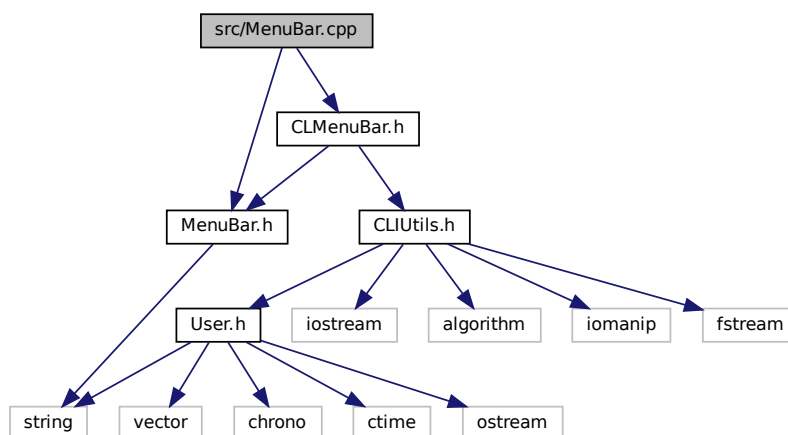
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## 5.40 src/MenuBar.cpp File Reference

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

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

Include dependency graph for MenuBar.cpp:



### 5.40.1 Detailed Description

#### Author

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

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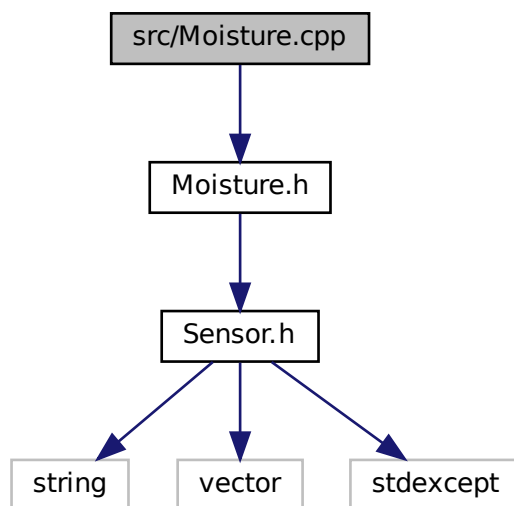
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## 5.41 src/Moisture.cpp File Reference

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

Include dependency graph for Moisture.cpp:



### 5.41.1 Detailed Description

#### Author

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

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#### Date

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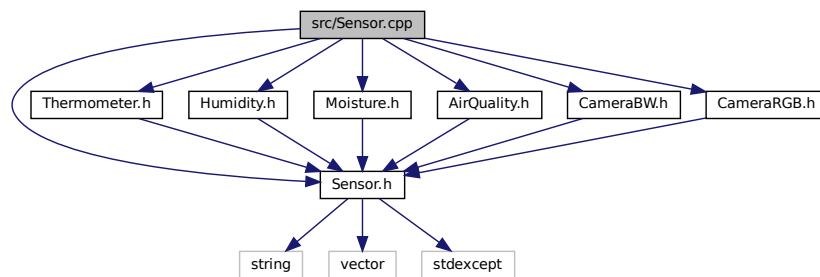
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## 5.42 src/Sensor.cpp File Reference

```
#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:



### 5.42.1 Detailed Description

#### Author

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

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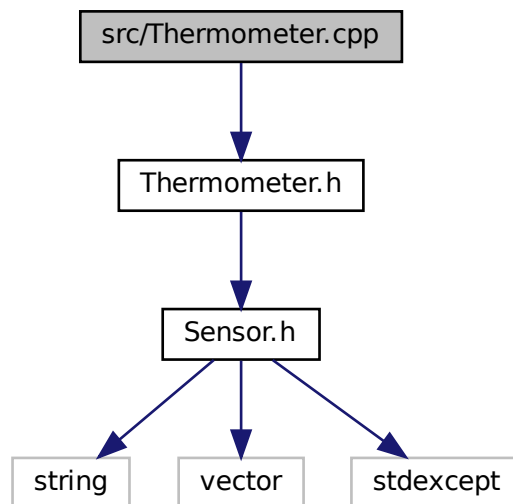
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## 5.43 src/Thermometer.cpp File Reference

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

Include dependency graph for Thermometer.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

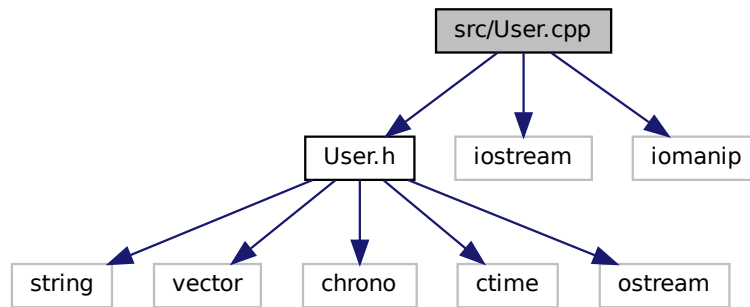
2022-11-23

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## 5.44 src/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)`

#### 5.44.1 Detailed Description

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##### Version

2.0

##### Date

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