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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

Chapter 2

Class Index

2.1 Class List

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

Chapter 3

File Index

3.1 File List

Here is a list of all files with brief descriptions:

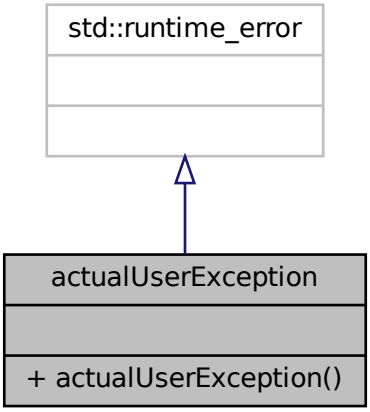
Chapter 4

Class Documentation

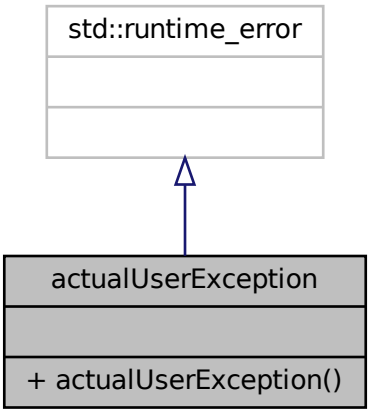
4.1 actualUserException Class Reference

`#include <Exceptions.h>`

Inheritance diagram for actualUserException:



Collaboration diagram for actualUserException:



Public Member Functions

- actualUserException ()

4.1.1 Detailed Description

Definition at line 47 of file Exceptions.h.

4.1.2 Constructor & Destructor Documentation

4.1.2.1 actualUserException()

```
actualUserException::actualUserException ( )  [inline]
```

Definition at line 49 of file Exceptions.h.

```
50     : std::runtime_error ("No puedes borrar el user usado actualmente") {}
```

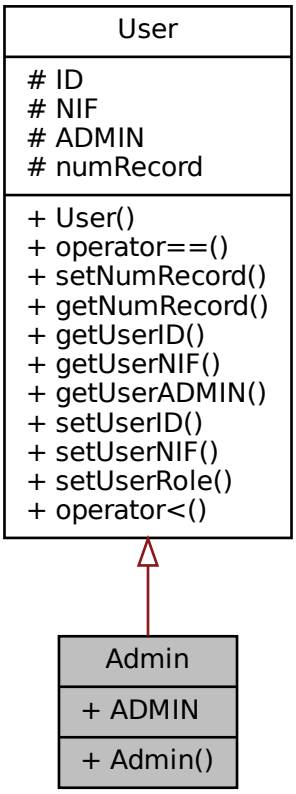
The documentation for this class was generated from the following file:

- include/Exceptions.h

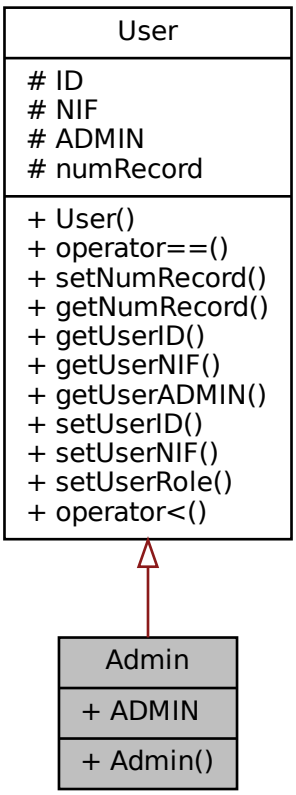
4.2 Admin Class Reference

`#include <Admin.h>`

Inheritance diagram for Admin:



Collaboration diagram for Admin:



Public Member Functions

- Admin ()

Public Attributes

- int ADMIN = 1

Additional Inherited Members

4.2.1 Detailed Description

Definition at line 20 of file Admin.h.

4.2.2 Constructor & Destructor Documentation

4.2.2.1 Admin()

```
Admin::Admin ( )
```

4.2.3 Member Data Documentation

4.2.3.1 ADMIN

```
int Admin::ADMIN = 1
```

Definition at line 23 of file Admin.h.

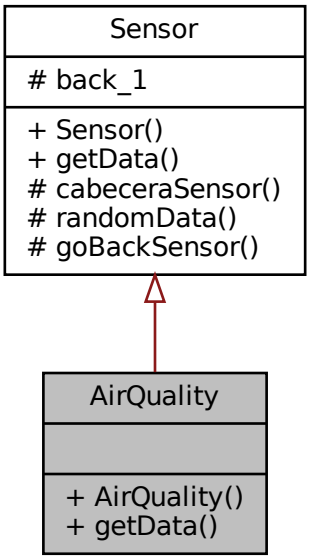
The documentation for this class was generated from the following file:

- include/Admin.h

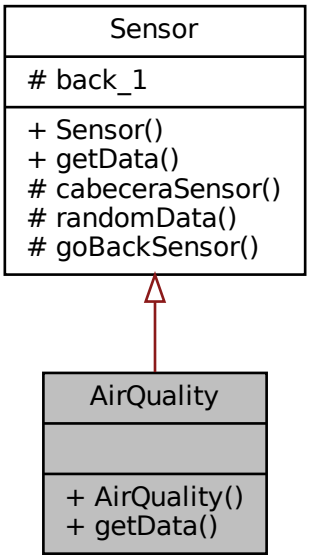
4.3 AirQuality Class Reference

```
#include <AirQuality.h>
```

Inheritance diagram for AirQuality:



Collaboration diagram for AirQuality:



Public Member Functions

- AirQuality ()
- void getData ()

Additional Inherited Members

4.3.1 Detailed Description

Definition at line 20 of file AirQuality.h.

4.3.2 Constructor & Destructor Documentation

4.3.2.1 AirQuality()

```
AirQuality::AirQuality ( )
```

Definition at line 8 of file AirQuality.cpp.

```
8 {}
```

4.3.3 Member Function Documentation

4.3.3.1 getData()

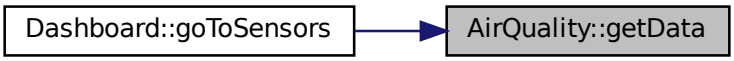
```
void AirQuality::getData ( )
```

Definition at line 11 of file AirQuality.cpp.

```
11                          {
12     while (true) {
13         int random = this->randomData();
14         cout « "\n\t\tAir quality:\t\t" « (random + 30) « " ppm\n" « endl;
15         cout « "\n\t\tPara volver atrás introduzca 0 + ENTER" « endl;
16         cin » this->back_1;
17         switch (this->back_1) {
18
19         case 0:
20             return;
21             break;
22
23         default:
24
25             cout « "Orden incorrecta" « endl;
26             system("sleep 1");
27             this->cabeceraSensor();
28             break;
29         }
30     }
31 }
```

References back_1.

Here is the caller graph for this function:



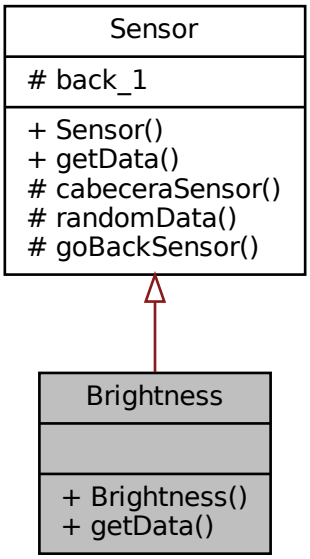
The documentation for this class was generated from the following files:

- include/AirQuality.h
- src/AirQuality.cpp

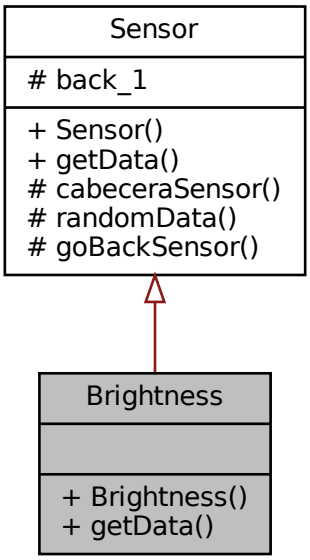
4.4 Brightness Class Reference

```
#include <Brightness.h>
```

Inheritance diagram for Brightness:



Collaboration diagram for Brightness:



Public Member Functions

- Brightness ()
- void getData ()

Additional Inherited Members

4.4.1 Detailed Description

Definition at line 21 of file Brightness.h.

4.4.2 Constructor & Destructor Documentation

4.4.2.1 Brightness()

```
Brightness::Brightness ( )
```

Definition at line 8 of file Brightness.cpp.

```
8 {}
```

4.4.3 Member Function Documentation

4.4.3.1 getData()

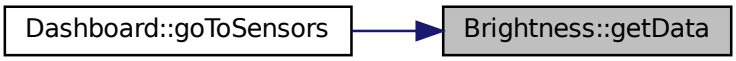
```
void Brightness::getData ( )
```

Definition at line 11 of file Brightness.cpp.

```
11                          {
12     while (true) {
13         int random = this->randomData();
14         cout « "\n\t\tBrightness:\t\t" « (random + 10) « " lmen/m^2\n" « endl;
15         cout « "\n\t\tPara volver atrás introduzca 0 + ENTER" « endl;
16         cin » this->back_1;
17         switch (this->back_1) {
18
19         case 0:
20             return;
21             break;
22
23         default:
24
25             cout « "Orden incorrecta" « endl;
26             system("sleep 1");
27             this->cabeceraSensor();
28             break;
29         }
30     }
31 }
```

References back_1.

Here is the caller graph for this function:



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

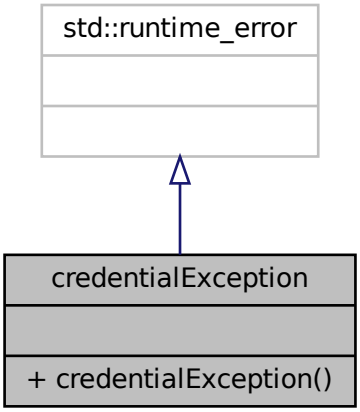
- include/Brightness.h
- src/Brightness.cpp

4.5 credentialException Class Reference

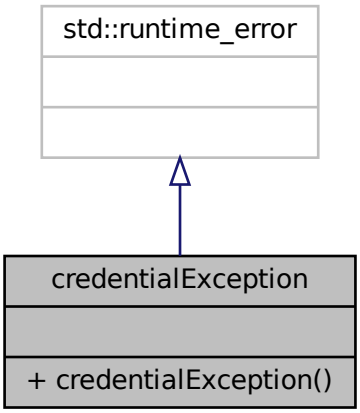
If the ID or NIF are incorrect, the exception will be thrown.

`#include <Exceptions.h>`

Inheritance diagram for credentialException:



Collaboration diagram for credentialException:



Public Member Functions

- credentialException ()

4.5.1 Detailed Description

If the ID or NIF are incorrect, the exception will be thrown.

Definition at line 31 of file Exceptions.h.

4.5.2 Constructor & Destructor Documentation

4.5.2.1 credentialException()

```
credentialException::credentialException ( )  [inline]
```

Definition at line 33 of file Exceptions.h.

```
34     : std::runtime_error ("El usuario y/o password son incorrectos") {}
```

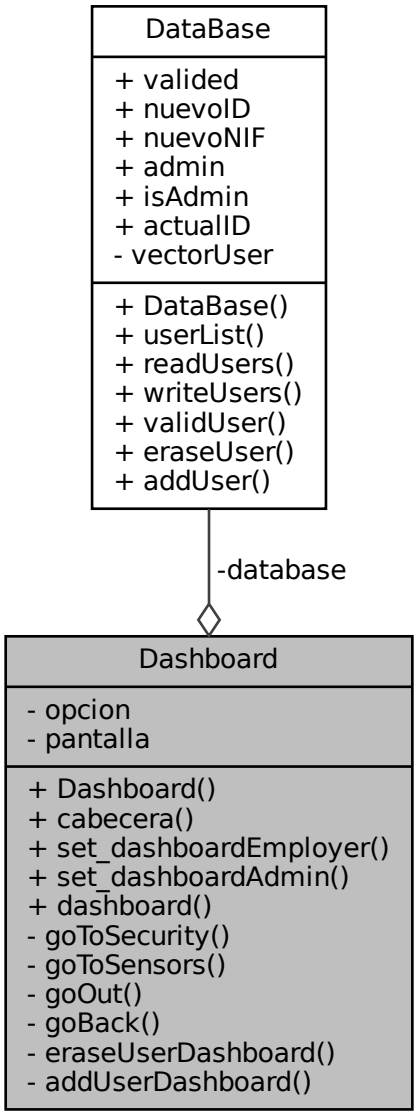
The documentation for this class was generated from the following file:

- include/Exceptions.h

4.6 Dashboard Class Reference

`#include <Dashboard.h>`

Collaboration diagram for Dashboard:



Public Member Functions

- Dashboard ()
- void cabecera ()

  Principal header with the name of the business.
- void set_dashboardEmployer ()

Set the menu for the employers.

- void set_dashboardAdmin ()

  Set the menu for the Admins.

- void dashboard (DataBase *, bool)

Private Member Functions

- void goToSecurity ()

  Menu with options for the security.

- void goToSensors ()

  menu that shows the different sensors. For each instruction a sensor is shown

- void goOut ()

  Function to exit the program when the option is selected.

- void goBack ()
- void eraseUserDashboard ()

  Method that allow the admin to erase the users.

- void addUserDashboard ()

  Function that allows the admin to add new users.

Private Attributes

- int opcion
- int pantalla
- DataBase * database

4.6.1 Detailed Description

Definition at line 19 of file Dashboard.h.

4.6.2 Constructor & Destructor Documentation

4.6.2.1 Dashboard()

```
Dashboard::Dashboard ( )
```

Definition at line 27 of file Dashboard.cpp.

```
27 {}
```

4.6.3 Member Function Documentation

4.6.3.1 addUserDashboard()

```
void Dashboard::addUserDashboard ( )  [private]
```

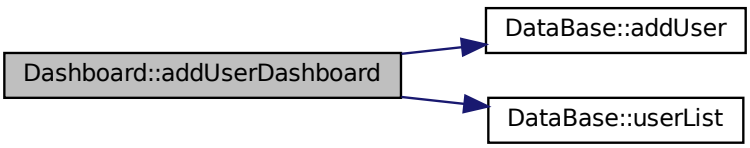
Function that allows the admin to add new users.

Definition at line 263 of file Dashboard.cpp.

```
263                                {
264     while (true) {
265         cabecera();
266         database->userList();
267         cout «
      "\n--------------------------------------------------------------------------------------------------------\n"
      « endl;
268         cout « "Si desea añadir un usuario introduzca 1, para salir introduzca 0" « endl;
269         cout « "»> ";
270         cin » opcion;
271         try {
272             switch (opcion)
273             {
274             case 1:
275                 cout « "Introduzca ID del nuevo usuario" « endl;
276                 cout « "»> ";
277                 cin » database->nuevoID;
278                 cout « database->nuevoID « endl;
279                 cout « "Introduzca NIF del nuevo usuario" « endl;
280                 cout « "»> ";
281                 cin » database->nuevoNIF;
282                 cout « database->nuevoNIF « endl;
283                 cout « "¿El usuario es adiministrador? (introduzaca 0 para NO, 1 para SI" « endl;
284                 cout « "»> ";
285                 cin » database->admin;
286                 database->addUser();
287                 break;
288             case 0:
289                 return;
290             default:
291                 throw instructionException();
292             }
293         } catch (instructionException &except) {
294             cout « "Exception: " « except.what() « endl;
295             system("sleep 2");
296         }
297
298     }
299 }
```

References DataBase::addUser(), DataBase::admin, database, DataBase::nuevoID, DataBase::nuevoNIF, opcion, and DataBase::userList().

Here is the call graph for this function:



4.6.3.2 cabecera()

```
void Dashboard::cabecera ( )
```

Principal header with the name of the business.

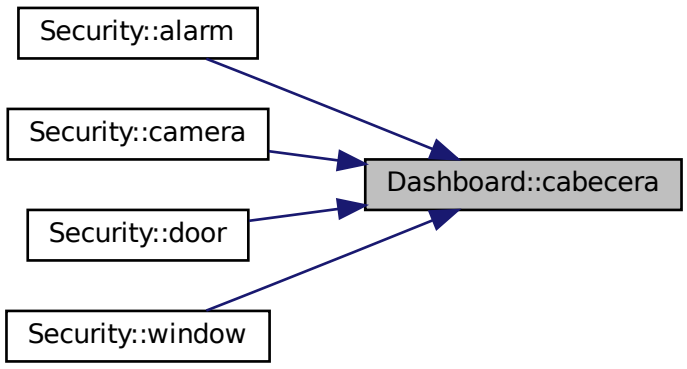
Definition at line 41 of file Dashboard.cpp.

```
41                          {
42     system("clear");
43     cout « "\x1b[32m
          \n"
44 "          / /                          ||   / /                                                                  \n"
45 "         / /          // ( )  ___       ||  / /  ___      ___      ___      __      ___      ___      \n"
46 "        / / //   / / // / / //   ) )    || / / //___) ) //   ) ) //   ) ) //   ) ) //   ) ) ((   ) )  \n"
47 "       / / //   / / // / / //   / /     ||/ / //       ((___/ / //   / / //   / / //   / /   \\ \\    \n"
48 " ((___/ / ((___( ( // / / ((___/ /      |  / ((____     //__   ((___( ( //   / / ((___/ / //   ) )    \n"
49 "                                                                                                      \n"
50 "                           //    / /                                                                 \n"
51 "              ___         //___ / / ( )      ( )  ___      ___                                        \n"
52 "           //___) )     / ___   / / /      / / //   ) ) ((   ) )                                     \n"

53 "          //           //    / / / /     / / //   / /   \\ \\                                          \n"

54 "         ((____       //    / / / / ((  / / ((___/ / //   ) )    \x1b[0m                              \n\n"
55 "-------------------------------------------------------------------------------------------------------- \n"
       « endl;
56
57 };
```

Here is the caller graph for this function:



4.6.3.3 dashboard()

```
void Dashboard::dashboard (
             DataBase * base,
             bool isAdmin )
```

Definition at line 301 of file Dashboard.cpp.

```
301                                                 {
302     database = base;
303     if (isAdmin) {
304         set_dashboardAdmin();
```

```
305     } else {
306         set_dashboardEmployer();
307     }
308 }
```

References database.

Here is the caller graph for this function:

4.6.3.4 eraseUserDashboard()

```
void Dashboard::eraseUserDashboard ( )  [private]
```

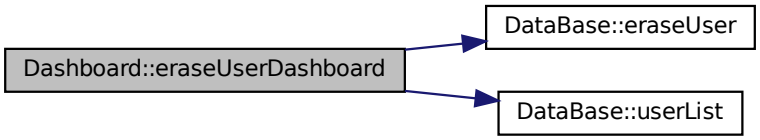
Method that allow the admin to erase the users.

Definition at line 234 of file Dashboard.cpp.

```
234                                     {
235     while (true) {
236         int opcion;
237         cabecera();
238         database->userList();
239         cout «
      "\n-------------------------------------------------------------------------------------------------------\n"
      « endl;
240         cout « "\nIntroduzca el ID del usuario que desa borrar o introduzca 0 para volver" « endl;
241         cout « database->actualID « endl;
242         cout « "»> ";
243         cin » opcion;
244         try {
245             switch (opcion) {
246             case 0:
247                 return;
248             default:
249                 if (database->actualID == opcion) {
250                     throw actualUserException();
251                     break;
252                 } else {
253                     database->eraseUser(opcion);
254                 }
255             }
256         } catch  (actualUserException &except) {
257             cout « "Exception: " « except.what() « endl;
258             system("sleep 2");
259         }
260     }
261 }
```

References DataBase::actualID, database, DataBase::eraseUser(), opcion, and DataBase::userList().

Here is the call graph for this function:



4.6.3.5 goBack()

```
void Dashboard::goBack ( )  [private]
```

4.6.3.6 goOut()

```
void Dashboard::goOut ( )  [private]
```

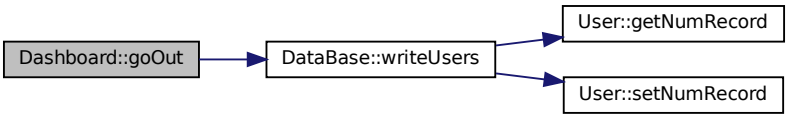
Function to exit the program when the option is selected.

Definition at line 227 of file Dashboard.cpp.

```
227                     {
228     system("clear");
229     cout « "\x1b[41mSaliendo del sistema...\x1b[0m" « endl;
230     database->writeUsers();
231     exit(0);
232 }
```

References database, and DataBase::writeUsers().

Here is the call graph for this function:



4.6.3.7 goToSecurity()

```
void Dashboard::goToSecurity ( )  [private]
```

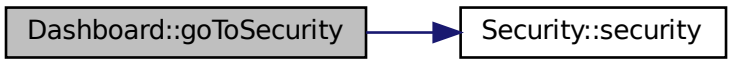
Menu with options for the security.

Definition at line 187 of file Dashboard.cpp.

```
187                         {
188     while (true) {
189         // Heading and options
190         cabecera();
191         cout « "\t\tOPCIONES DISPONIBLES\n\t\t-Puertas\t==> 1\n\t\t-Ventanas\t==> 2\n\t\t-Camaras\t==>
       3\n\t\t-Alarma\t\t==> 4\n\t\t-Exit\t\t==> 0" « endl;
192         cout «
       "\n--------------------------------------------------------------------------------------------------------\n"
       « endl;
193         cout « "Seleccione una opcion escribiendo el número correspondiente.\n" « endl;
194         cout « "»> ";
195         cin » opcion;
196         try {
197             switch (opcion) {
198             case 0:
199                 return;
200             case 1:
201                 cabecera();
202                 s.security("puertas");
203                 break;
204             case 2:
205                 cabecera();
206                 s.security("ventanas");
207                 break;
208             case 3:
209                 cabecera();
210                 s.security("camaras");
211                 break;
212             case 4:
213                 cabecera();
214                 s.security("alarma");
215                 break;
216             default:
217                 throw instructionException();
218             }
219         } catch (instructionException &except) {
220             cout « "Exception: " « except.what() « endl;
221             system("sleep 2");
222         }
223     }
224 };
```

References opcion, s, and Security::security().

Here is the call graph for this function:



4.6.3.8 goToSensors()

```
void Dashboard::goToSensors ( )  [private]
```

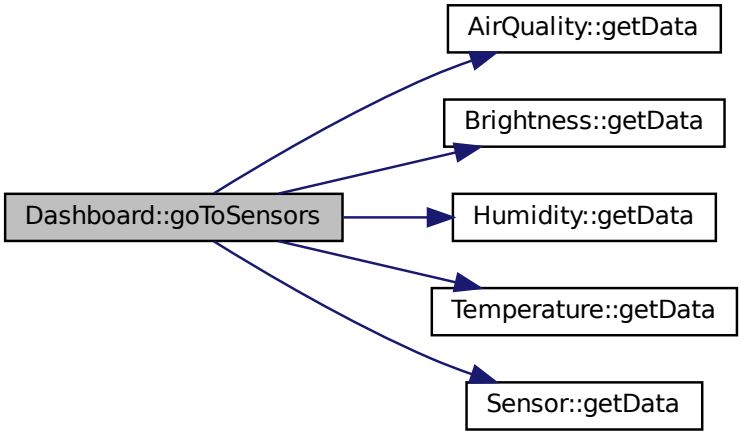
menu that shows the different sensors. For each instruction a sensor is shown

Definition at line 133 of file Dashboard.cpp.

```
133                          {
134     while (true) {
135         // Heading and options
136         cabecera();
137         cout « "\t\tOPCIONES DISPONIBLES\n\t\t-Humidity\t==> 1 \n\t\t-Brightness\t==> 2 \n\t\t-Air
       Quality\t==> 3 \n\t\t-Temperature\t==> 4 \n\t\t-RBG cam\t==> 5 \n\t\t-Termal cam\t==> 6
       \n\t\t-Exit\t\t==> 0" « endl;
138         cout «
       "\n--------------------------------------------------------------------------------------------------------\n"
       « endl;
139         cout « "Seleccione una opcion escribiendo el número correspondiente.\n" « endl;
140         cout « "»> ";
141         cin » opcion;
142         try {
143             switch (opcion) {
144             case 0:
145             return;
146 
147             case 1:
148                 cabecera();
149                 hum.getData();
150                 break;
151 
152             case 2:
153                 cabecera();
154                 brigh.getData();
155                 break;
156 
157             case 3:
158                 cabecera();
159                 airq.getData();
160                 break;
161 
162             case 4:
163                 cabecera();
164                 temp.getData();
165                 break;
166 
167             case 5:
168                 cabecera();
169                 sen.getData(opcion);
170                 break;
171 
172             case 6:
173                 cabecera();
174                 sen.getData(opcion);
175                 break;
176             default:
177                 throw instructionException();
178             }
179         } catch (instructionException &except) {
180             cout « "Exception: " « except.what() « endl;
181             system("sleep 2");
182         }
183     }
184 };
```

References airq, brigh, AirQuality::getData(), Brightness::getData(), Humidity::getData(), Temperature::getData(), Sensor::getData(), hum, opcion, sen, and temp.

Here is the call graph for this function:



4.6.3.9 set_dashboardAdmin()

```
void Dashboard::set_dashboardAdmin ( )
```

Set the menu for the Admins.

Definition at line 93 of file Dashboard.cpp.

```
93                                      {
94
95     while (true) {
96         cabecera();
97         cout « "\t\tOPCIONES DISPONIBLES\n\t\t-Sensores\t==> 1\n\t\t-Seguridad\t==> 2\n\t\t-Add
       Users\t==> 3\n\t\t-Erase Users\t==> 4\n\t\t-Cerrar Sesión\t==> 5\n\t\t-Exit\t\t==> 0\n\t\t" « endl;
98
99         cout «
       "--------------------------------------------------------------------------------------------------\n"
       « endl;
100         cout « "Seleccione una opcion escribiendo el número correspondiente.\n" « endl;
101         cout « "»> ";
102         cin » opcion;
103         try {
104         switch (opcion) {
105         case 0:
106             goOut();
107             break;
108         case 1:
109             goToSensors();
110             break;
111         case 2:
112             goToSecurity();
113             break;
114         case 3:
115             addUserDashboard();
116             break;
117         case 4:
118             eraseUserDashboard();
119             break;
120         case 5:
121             return;
122         default:
123                 throw instructionException();
124             }
```

```
125         } catch (instructionException &except) {
126             cout « "Exception: " « except.what() « endl;
127             system("sleep 2");
128         }
129     }
130 };
```

References opcion.

4.6.3.10 set_dashboardEmployer()

```
void Dashboard::set_dashboardEmployer ( )
```

Set the menu for the employers.

Definition at line 61 of file Dashboard.cpp.

```
61                                      {
62     while (true) {
63         cabecera();
64         cout « "\t\tOPCIONES DISPONIBLES\n\t\t-Sensores\t==> 1\n\t\t-Seguridad\t==> 2\n\t\t-Cerrar
       Sesión\t==> 3\n\t\t-Exit\t\t==> 0\n\t\t" « endl;
65
66         cout «
       "--------------------------------------------------------------------------------------------------------\n"
       « endl;
67         cout « "Seleccione una opcion escribiendo el número correspondiente.\n" « endl;
68         cout « "»> ";
69         cin » opcion;
70         try {
71         switch (opcion) {
72         case 0:
73             goOut();
74             break;
75         case 1:
76             goToSensors();
77             break;
78         case 2:
79             goToSecurity();
80             break;
81         case 3:
82             return;
83         default:
84                 throw instructionException();
85             }
86         } catch (instructionException &except) {
87             cout « "Exception: " « except.what() « endl;
88             system("sleep 2");
89         }
90     }
91 };
```

References opcion.

4.6.4 Member Data Documentation

4.6.4.1 database

```
DataBase* Dashboard::database  [private]
```

Definition at line 78 of file Dashboard.h.

4.6.4.2 opcion

```
int Dashboard::opcion  [private]
```

Definition at line 76 of file Dashboard.h.

4.6.4.3 pantalla

```
int Dashboard::pantalla  [private]
```

Definition at line 77 of file Dashboard.h.

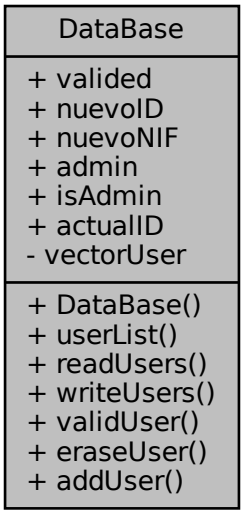
The documentation for this class was generated from the following files:

- include/Dashboard.h
- src/Dashboard.cpp

4.7 DataBase Class Reference

```
#include <DataBase.h>
```

Collaboration diagram for DataBase:



Public Member Functions

- DataBase ()

  Construct a new Data Base object.
- void userList ()

  list of the current usersd
- void readUsers ()

  Method to read the current users from the file users.dat.
- void writeUsers ()

  Methot used for write in the file users.dat the users at the end of the program.
- bool validUser (int, int)

  Validates the users credentials that are stored in the database.
- void eraseUser (int)

  method to erase users
- void addUser ()

  Method to add new users.

Public Attributes

- bool valided

  bool to return the
- int nuevoID
- int nuevoNIF
- int admin
- bool isAdmin
- int actualID

  User that is used to login.

Private Attributes

- std::set< User > vectorUser

  Users storage.

4.7.1 Detailed Description

Definition at line 22 of file DataBase.h.

4.7.2 Constructor & Destructor Documentation

4.7.2.1 DataBase()

```
DataBase::DataBase ( )
```

Construct a new Data Base object.

Definition at line 25 of file DataBase.cpp.

```
25                      {
26     /*User* user1 = new User(1111, 12345678, 0);
27     User* user2 = new User(2222, 23456789, 0);
28     User* user3 = new User(3333, 34567890, 0);
29     User* user4 = new User(1212, 12121212, 1);
30     vectorUser.insert(*user1);
31     vectorUser.insert(*user2);
32     vectorUser.insert(*user3);
33     vectorUser.insert(*user4);*/
34
35 }
```

4.7.3 Member Function Documentation

4.7.3.1 addUser()

```
void DataBase::addUser ( )
```

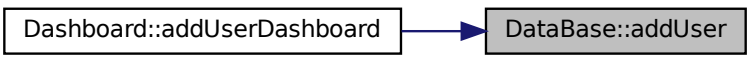
Method to add new users.

Definition at line 73 of file DataBase.cpp.

```
73                          {
74
75     for (User u : vectorUser) {
76
77         if (u.getUserID() == nuevoID || u.getUserNIF() == nuevoNIF) {
78
79             cout « "ID o NIF ya existentes" « endl;
80             break;
81         } else {
82             vectorUser.insert(User(nuevoNIF, nuevoID, admin));
83         }
84     }
85 }
```

References admin, nuevoID, and nuevoNIF.

Here is the caller graph for this function:



4.7.3.2 eraseUser()

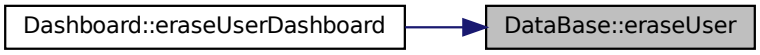
```
void DataBase::eraseUser (
            int posicion )
```

method to erase users

Definition at line 63 of file DataBase.cpp.

```
63                                      {
64
65     for (User u : vectorUser) {
66         if (posicion == u.getUserID() ) {
67             vectorUser.erase(u);
68             break;
69         }
70     }
71 }
```

Here is the caller graph for this function:



4.7.3.3 readUsers()

```
void DataBase::readUsers ( )
```

Method to read the current users from the file users.dat.

Definition at line 88 of file DataBase.cpp.

```
88                          {
89     ifstream inUsersFile ("./resources/users.dat", ios::in | ios::binary);
90
91
92     if (!inUsersFile) { // file couldn't be opened
93         cerr « "File could not be opened" « endl;
94         exit (1);
95     }
96
97     User user;
98
99     inUsersFile.read (reinterpret_cast <char *>(&user), sizeof (User));
100
101     while (inUsersFile && !inUsersFile.eof()) {
102         if (user.getNumRecord() != 0) {
103             vectorUser.insert (user);
104         }
105         inUsersFile.read (reinterpret_cast <char *>(&user), sizeof (User));
106     }
107
108 }
```

References User::getNumRecord().

Here is the call graph for this function:

Here is the caller graph for this function:

4.7.3.4 userList()

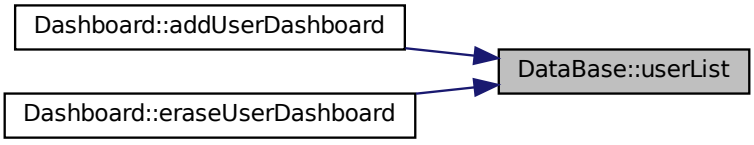
```
void DataBase::userList ( )
```

list of the current usersd

Definition at line 139 of file DataBase.cpp.

```
139                         {
140     int posicion = 1;
141     for (User u : vectorUser) {
142         cout « "\t" « posicion « " -\t" « u.getUserID() « "\t" « u.getUserNIF() « endl;
143         posicion += 1;
144     }
145 }
```

Here is the caller graph for this function:



4.7.3.5 validUser()

```
bool DataBase::validUser (
            int id,
            int nif )
```

Validates the users credentials that are stored in the database.

Returns

true

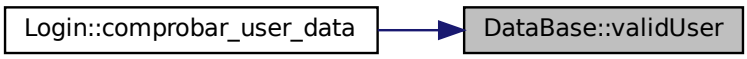
false

Definition at line 39 of file DataBase.cpp.

```
39                                          {
40
41     /*  For each user in the list the atributes ID and NIF are compared whit
42         the ones introducted by the user from the login*/
43     for (User u : vectorUser) {
44
45         if (u.getUserID() == id && u.getUserNIF() == nif) {
46             // when the correct user is found the loop is over
47             valided = true;
48             if (u.getUserADMIN() == 1) {
49                 isAdmin = true;
50             } else {
51                 isAdmin = false;
52             }
53
54
55             break;
56         } else {
57             valided = false;
58         }
59     }
60     return valided;
61 }
```

References valided.

Here is the caller graph for this function:



4.7.3.6 writeUsers()

```
void DataBase::writeUsers ( )
```

Methot used for write in the file users.dat the users at the end of the program.

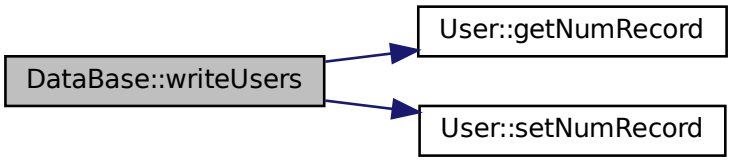
Definition at line 111 of file DataBase.cpp.

```
111                             {
112     int numRecord = 1;
```

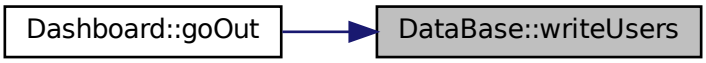
```
113
114     fstream outUsersFile ("./resources/users.dat", ios::out | ios::binary | ios::trunc);
115
116
117     if (!outUsersFile) { // file couldn't be opened
118         cerr « "File could not be opened" « endl;
119         exit (1);
120     }
121
122
123     for (User u : vectorUser) {
124
125
126         User user(u.getUserNIF(), u.getUserID(), u.getUserADMIN());
127         user.setNumRecord (numRecord);
128
129         outUsersFile.seekp ((user.getNumRecord() - 1 ) *
130         sizeof (User));
131
132         outUsersFile.write (reinterpret_cast <const char *> (&user),
133         sizeof (User));
134         numRecord++;
135     }
136
137 }
```

References User::getNumRecord(), and User::setNumRecord().

Here is the call graph for this function:



Here is the caller graph for this function:



4.7.4 Member Data Documentation

4.7.4.1 actualID

`int DataBase::actualID`

User that is used to login.

Definition at line 89 of file DataBase.h.

4.7.4.2 admin

```
int DataBase::admin
```

Definition at line 82 of file DataBase.h.

4.7.4.3 isAdmin

```
bool DataBase::isAdmin
```

Definition at line 83 of file DataBase.h.

4.7.4.4 nuevoID

```
int DataBase::nuevoID
```

Definition at line 80 of file DataBase.h.

4.7.4.5 nuevoNIF

```
int DataBase::nuevoNIF
```

Definition at line 81 of file DataBase.h.

4.7.4.6 valided

```
bool DataBase::valided
```

bool to return the

Definition at line 64 of file DataBase.h.

4.7.4.7 vectorUser

```
std::set<User> DataBase::vectorUser  [private]
```

Users storage.

Definition at line 96 of file DataBase.h.

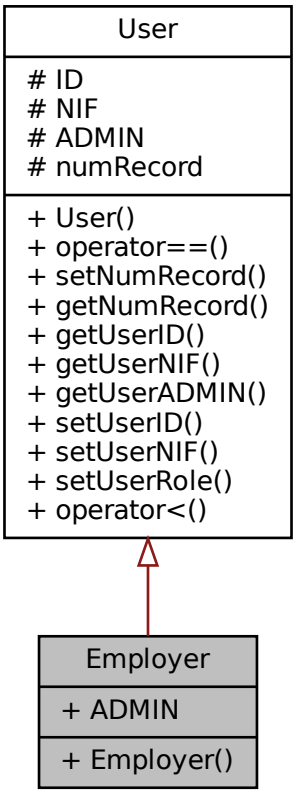
The documentation for this class was generated from the following files:

- include/DataBase.h
- src/DataBase.cpp

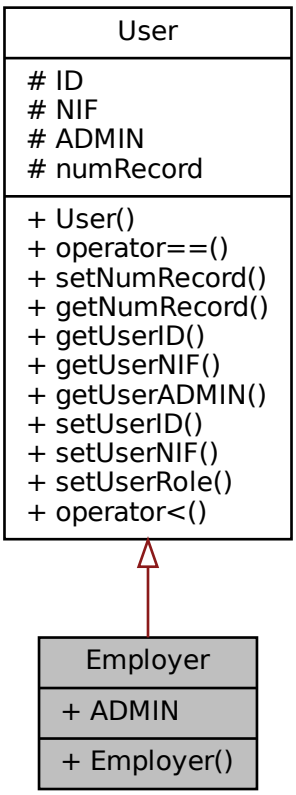
4.8 Employer Class Reference

`#include <Employer.h>`

Inheritance diagram for Employer:



Collaboration diagram for Employer:



Public Member Functions

- Employer ()

Public Attributes

- int ADMIN = 0

Additional Inherited Members

4.8.1 Detailed Description

Definition at line 20 of file Employer.h.

4.8.2 Constructor & Destructor Documentation

4.8.2.1 Employer()

```
Employer::Employer ( )
```

4.8.3 Member Data Documentation

4.8.3.1 ADMIN

```
int Employer::ADMIN = 0
```

Definition at line 23 of file Employer.h.

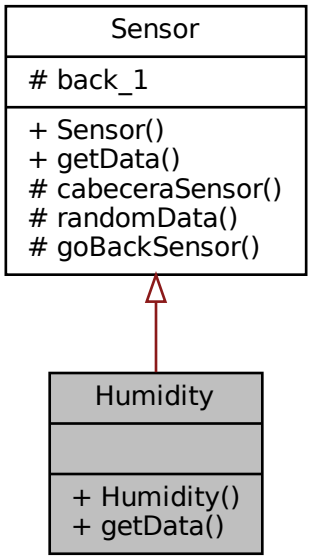
The documentation for this class was generated from the following file:

- include/Employer.h

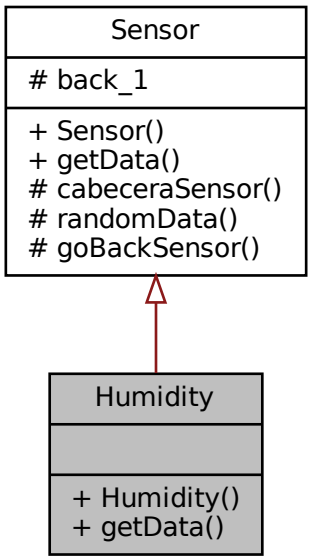
4.9 Humidity Class Reference

```
#include <Humidity.h>
```

Inheritance diagram for Humidity:



Collaboration diagram for Humidity:



Public Member Functions

- Humidity ()

  Construct a new Humidity object.
- void getData ()

  Get the Data object.

Additional Inherited Members

4.9.1 Detailed Description

Definition at line 23 of file Humidity.h.

4.9.2 Constructor & Destructor Documentation

4.9.2.1 Humidity()

```
Humidity::Humidity ( )
```

Construct a new Humidity object.

Definition at line 8 of file Humidity.cpp.

```
8 {}
```

4.9.3 Member Function Documentation

4.9.3.1 getData()

```
void Humidity::getData ( )
```

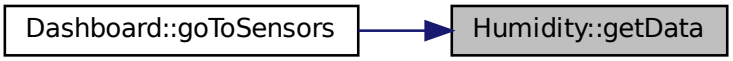
Get the Data object.

Definition at line 11 of file Humidity.cpp.

```
11                          {
12     while (true) {
13         int random = this->randomData();
14         cout « "\n\t\tHumidity:\t\t" « (random + 30) « " g/m3\n" « endl;
15         cout « "\n\t\tPara volver atrás introduzca 0 + ENTER" « endl;
16         cin » this->back_1;
17         switch (this->back_1) {
18 
19         case 0:
20             return;
21             break;
22 
23         default:
24 
25             cout « "Orden incorrecta" « endl;
26             system("sleep 1");
27             this->cabeceraSensor();
28             break;
29         }
30     }
31 }
```

References back_1.

Here is the caller graph for this function:



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

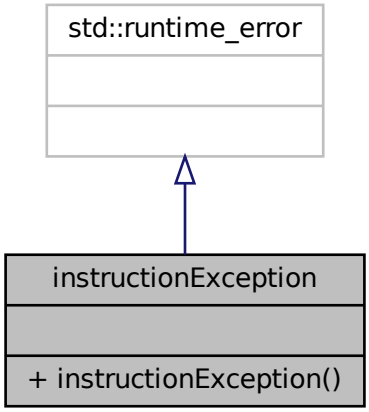
- include/Humidity.h
- src/Humidity.cpp

4.10 instructionException Class Reference

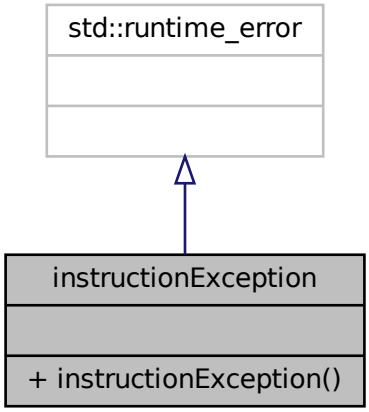
If the instruction of the menu is wrong, the exception appears.

`#include <Exceptions.h>`

Inheritance diagram for instructionException:



Collaboration diagram for instructionException:



Public Member Functions

- instructionException ()

4.10.1 Detailed Description

If the instruction of the menu is wrong, the exception appears.

Definition at line 41 of file Exceptions.h.

4.10.2 Constructor & Destructor Documentation

4.10.2.1 instructionException()

```
instructionException::instructionException ( )  [inline]
```

Definition at line 43 of file Exceptions.h.

```
44     : std::runtime_error ("Instrucción incorrecta") {}
```

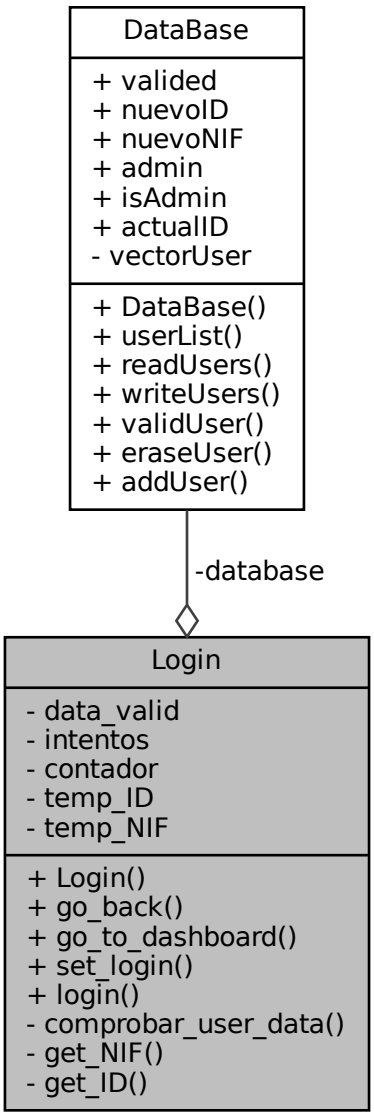
The documentation for this class was generated from the following file:

- include/Exceptions.h

4.11 Login Class Reference

```
#include <Login.h>
```

Collaboration diagram for Login:



Public Member Functions

- Login ()
- void go_back ()
- bool go_to_dashboard ()
- void set_login ()
- void login (DataBase ∗)

Private Member Functions

- void comprobar_user_data ()

method that calls a database function which verify the credentials If the function return a false, a mesage is printed to show the user that is wrong At the third wrong try the program finishes with a 'access denied' error

- void get_NIF ()

  Method to get the ID.
- void get_ID ()

  Method to get the NIF.

Private Attributes

- DataBase * database

  Variable of the data base type wich save a pointer.
- bool data_valid
- int intentos
- int contador
- int temp_ID
- int temp_NIF

4.11.1 Detailed Description

Definition at line 17 of file Login.h.

4.11.2 Constructor & Destructor Documentation

4.11.2.1 Login()

```
Login::Login ( )
```

Definition at line 24 of file Login.cpp.

```
24 {} // Login constructor
```

4.11.3 Member Function Documentation

4.11.3.1 comprobar_user_data()

```
void Login::comprobar_user_data ( )  [private]
```

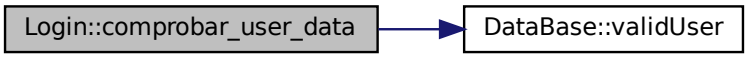
method that calls a database function which verify the credentials If the function return a false, a mesage is printed to show the user that is wrong At the third wrong try the program finishes with a 'access denied' error

Definition at line 78 of file Login.cpp.

```
78                                  {
79
80     try {
81     data_valid = database->validUser(temp_ID, temp_NIF);
82         if (!data_valid) {
83             throw credentialException();
84         }
85     }
86     catch (credentialException &except) {
87         cout « "\n\n\tException: "« except.what() « endl;
88         contador++;
89         system("sleep 1.5");
90         if (contador != 3) {
91             system("clear");
92         } else {
93             // at the third try the program finish and denied the access
94             cout « "\u001b[31m\n\t\t\tAccess denied.\u001b[0m\n" « endl;
95             go_back();
96         }
97     }
98 };
```

References contador, data_valid, database, temp_ID, temp_NIF, and DataBase::validUser().

Here is the call graph for this function:



4.11.3.2 get_ID()

```
void Login::get_ID ( )  [private]
```

Method to get the NIF.

Definition at line 39 of file Login.cpp.

```
39                      {
40     string id;
41     cout « "\n\tID: ";
42     cin » id;
43     try {
44         temp_ID = stoi(id);
45     }
46     catch (std::invalid_argument) {
47         cout « "Exception: chars and string are invalid" « endl;
48     }
49     catch (std::out_of_range) {
50         cout « "Exception: ID lenght out of range" « endl;
51         system("sleep 1");
52     };
53 };
```

References temp_ID.

4.11.3.3 get_NIF()

```
void Login::get_NIF ( )  [private]
```

Method to get the ID.

Definition at line 55 of file Login.cpp.

```
55                      {
56     string nif;
57     cout « "\n\tNIF: ";
58     cin » nif;
59     try {
60         temp_NIF = stoi(nif);
61     }
62     catch (std::invalid_argument) {
63         cout « "Exception: chars and string are invalid" « endl;
64         system("sleep 1");
65     }
66     catch (std::out_of_range) {
67         cout « "Exception: NIF lenght out of range" « endl;
68         system("sleep 1");
69 
70     }
71 };
```

References temp_NIF.

4.11.3.4 go_back()

```
void Login::go_back ( )
```

Definition at line 109 of file Login.cpp.

```
109                     {
110     exit(0);
111 };
```

4.11.3.5 go_to_dashboard()

```
bool Login::go_to_dashboard ( )
```

Definition at line 100 of file Login.cpp.

```
100                              {
101 
102     system("sleep 1");
103     if (database->isAdmin) {
104         return true;
105     }
106     return false;
107 };
```

References database, and DataBase::isAdmin.

Here is the caller graph for this function:

4.11.3.6 login()

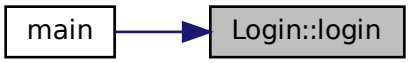
```
void Login::login (
            DataBase * data )
```

Definition at line 141 of file Login.cpp.

```
141                                 {
142     database = data;
143     system("clear");
144     set_login();
145     go_to_dashboard();
146
147 }
```

References database.

Here is the caller graph for this function:



4.11.3.7 set_login()

```
void Login::set_login ( )
```

Definition at line 115 of file Login.cpp.

```
115                         {
116     while (true) {
117         // Title
118         cout « "\t\t\t----------------" « endl;
119         cout « "\t\t\t\x1b[47m\x1b[30mLOGIN DE USUARIO\x1b[0m" « endl;
120         cout « "\t\t\t----------------" « endl;
121
122         // The credentials are asked and are validated
123         get_ID();
124         get_NIF();
125
126         comprobar_user_data();
127
128
129         // If the credentials are correct the user goes to the dashboard
130         if (data_valid == true) {
131             database->actualID = temp_ID;
132             cout « database->actualID « endl;
133             cout « "\u001b[32m\n\n\t\t\tBienvenido al sistema\u001b[0m" « endl;
134             contador = 0;
135             return;
136         }
137     }
138 };
```

References DataBase::actualID, contador, data_valid, database, and temp_ID.

4.11.4 Member Data Documentation

4.11.4.1 contador

```
int Login::contador  [private]
```

Definition at line 53 of file Login.h.

4.11.4.2 data_valid

```
bool Login::data_valid  [private]
```

Definition at line 51 of file Login.h.

4.11.4.3 database

```
DataBase* Login::database  [private]
```

Variable of the data base type wich save a pointer.

Definition at line 49 of file Login.h.

4.11.4.4 intentos

```
int Login::intentos  [private]
```

Definition at line 52 of file Login.h.

4.11.4.5 temp_ID

```
int Login::temp_ID  [private]
```

Definition at line 54 of file Login.h.

4.11.4.6 temp_NIF

```
int Login::temp_NIF  [private]
```

Definition at line 55 of file Login.h.

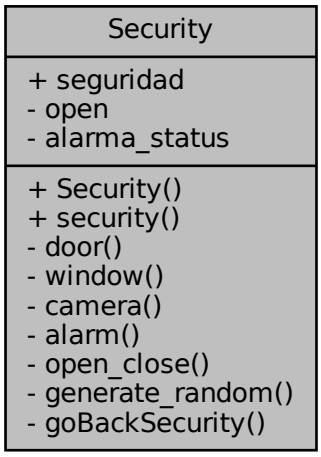
The documentation for this class was generated from the following files:

- include/Login.h
- src/Login.cpp

4.12 Security Class Reference

`#include <Security.h>`

Collaboration diagram for Security:



Public Member Functions

- Security ()
- void security (string)

  Depend on the instruction, the security class shows a different menu.

Public Attributes

- string seguridad

Private Member Functions

- void door ()
- void window ()
- void camera ()
- void alarm ()
- void open_close ()
- int generate_random ()

  Generate a random value and depend on it in some methods is used to generate a true or false value.
- void goBackSecurity ()

Private Attributes

- string open
- string alarma_status

4.12.1 Detailed Description

Definition at line 17 of file Security.h.

4.12.2 Constructor & Destructor Documentation

4.12.2.1 Security()

```
Security::Security ( )
```

Definition at line 24 of file Security.cpp.

```
24 {}
```

4.12.3 Member Function Documentation

4.12.3.1 alarm()

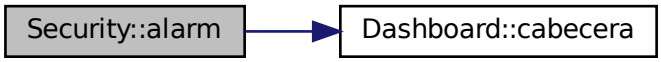
```
void Security::alarm ( )  [private]
```

Definition at line 118 of file Security.cpp.

```
118                 {
119     while (true) {
120         cout « "\n\tAlarma: " « alarm_status « "\n\n" « endl;
121         cout « "Para encender introduzca 1, para apagar introduzca 2, para salir 0\n" « endl;
122         cout « "»> ";
123         cin » entrada;
124         switch (entrada) {
125 
126         case 0:
127             return;
128 
129         case 1:
130             alarm_status = "encendido";
131             db.cabecera();
132             break;
133 
134         case 2:
135             alarm_status = "apagado";
136             db.cabecera();
137             break;
138         default:
139             cout « "Orden incorrecta" « endl;
140             system("sleep 1");
141             db.cabecera();
142             break;
143         }
144     }
145 }
```

References alarm_status, Dashboard::cabecera(), db, and entrada.

Here is the call graph for this function:



4.12.3.2 camera()

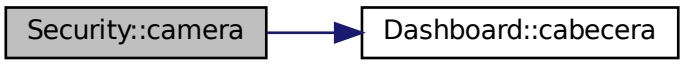
```
void Security::camera ( )  [private]
```

Definition at line 100 of file Security.cpp.

```
100                     {
101     while (true) {
102         cout « "Imagina que hay una camara" « endl;
103         cout « "\n\t\tPara volver atrás introduzca 0 + ENTER" « endl;
104         cin » back;
105         switch (back) {
106         case 0:
107             return;
108             break;
109         default:
110             cout « "Orden incorrecta" « endl;
111             system("sleep 1");
112             db.cabecera();
113             break;
114         }
115     }
116 }
```

References back, Dashboard::cabecera(), and db.

Here is the call graph for this function:



4.12.3.3 door()

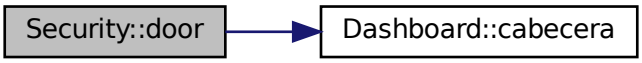
```
void Security::door ( )  [private]
```

Definition at line 42 of file Security.cpp.

```
42                      {
43     while (true) {
44         open_close();
45         cout « "Puerta: 01\tLocalización: Huerto\tEstado: " « open « endl;
46         open_close();
47         cout « "Puerta: 02\tLocalización: Almacen\tEstado: " « open « endl;
48         open_close();
49         cout « "Puerta: 03\tLocalización: Despacho\tEstado: " « open « endl;
50         cout « "\n\t\tPara volver atrás introduzca 0 + ENTER" « endl;
51         cout « "»> ";
52         cin » back;
53 
54         // If an order different of 0 is inserted, the door menu is restarted.
55         switch (back) {
56 
57         case 0:
58             return;
59             break;
60 
61         default:
62 
63             cout « "Orden incorrecta" « endl;
64             system("sleep 1");
65             db.cabecera();
66             break;
67         }
68     }
69 }
```

References back, Dashboard::cabecera(), db, and open.

Here is the call graph for this function:



4.12.3.4 generate_random()

```
int Security::generate_random ( )  [private]
```

Generate a random value and depend on it in some methods is used to generate a true or false value.

Returns

int

Definition at line 148 of file Security.cpp.

```
148                                {
149     srand(time(NULL));
150     return rand()%10;
151 }
```

4.12.3.5 goBackSecurity()

```
void Security::goBackSecurity ( )  [private]
```

4.12.3.6 open_close()

```
void Security::open_close ( )  [private]
```

Definition at line 154 of file Security.cpp.

```
154                             {
155     int random = generate_random();
156     if (random >= 0 && random <= 4) {
157         open = "close";
158     } else {
159         open = "open";
160     }
161 }
```

References open.

4.12.3.7 security()

```
void Security::security (
              string seguridad )
```

Depend on the instruction, the security class shows a different menu.

Parameters

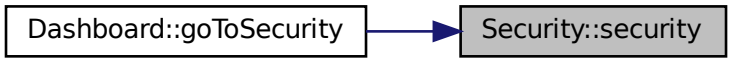
string	seguridad, depending on it's "value" the class shows a different menu

Definition at line 29 of file Security.cpp.

```
29                                          {
30     if (seguridad == "puertas") {
31         door();
32     } else if (seguridad == "ventanas") {
33         window();
34     } else if (seguridad == "camaras") {
35         camera();
36     } else if (seguridad == "alarma") {
37         alarm();
38     }
39 }
```

References seguridad.

Here is the caller graph for this function:



4.12.3.8 window()

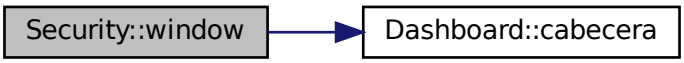
```
void Security::window ( )  [private]
```

Definition at line 72 of file Security.cpp.

```
72                      {
73     while (true) {
74         open_close();
75         cout « "Ventana: 01\tLocalización: Huerto\tEstado: " « open « endl;
76         open_close();
77         cout « "Ventana: 02\tLocalización: Almacen\tEstado: " « open « endl;
78         open_close();
79         cout « "Ventana: 03\tLocalización: Despacho\tEstado: " « open « endl;
80         cout « "\n\t\tPara volver atrás introduzca 0 + ENTER" « endl;
81         cin » back;
82         // if an order different of 0 the programm restart
83         switch (back) {
84 
85         case 0:
86             return;
87             break;
88 
89         default:
90 
91             cout « "Orden incorrecta" « endl;
92             system("sleep 1");
93             db.cabecera();
94             break;
95         }
96     }
97 }
```

References back, Dashboard::cabecera(), db, and open.

Here is the call graph for this function:



4.12.4 Member Data Documentation

4.12.4.1 alarma_status

```
string Security::alarma_status  [private]
```

Definition at line 49 of file Security.h.

4.12.4.2 open

```
string Security::open  [private]
```

Definition at line 48 of file Security.h.

4.12.4.3 seguridad

```
string Security::seguridad
```

Definition at line 20 of file Security.h.

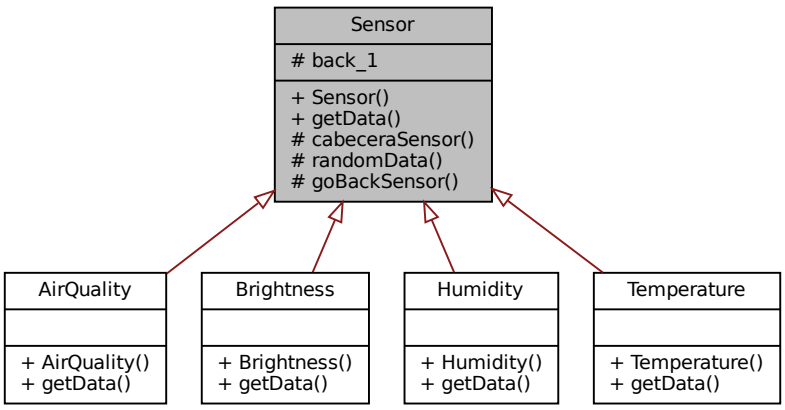
The documentation for this class was generated from the following files:

- include/Security.h
- src/Security.cpp

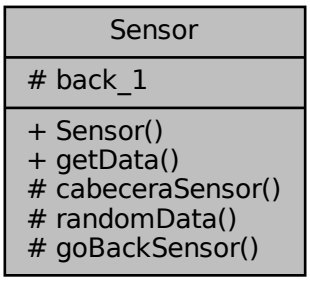
4.13 Sensor Class Reference

```
#include <Sensor.h>
```

Inheritance diagram for Sensor:



Collaboration diagram for Sensor:



Public Member Functions

- Sensor ()
- void getData (int)

  Get the Data of the object.

Protected Member Functions

- void cabeceraSensor ()

  Heading used in all the sensors.
- int randomData ()

  Method that generate a random number which is used to show a value for each sensor.
- void goBackSensor ()

Protected Attributes

- int back_1

4.13.1 Detailed Description

Definition at line 18 of file Sensor.h.

4.13.2 Constructor & Destructor Documentation

4.13.2.1 Sensor()

```
Sensor::Sensor ( )
```

Definition at line 15 of file Sensor.cpp.

```
15 {}
```

4.13.3 Member Function Documentation

4.13.3.1 cabeceraSensor()

```
void Sensor::cabeceraSensor ( )  [protected]
```

Heading used in all the sensors.

Definition at line 72 of file Sensor.cpp.

```
72                              {
73     system("clear");
74     cout « "\x1b[32m
          \n"
75 "          / /                              ||   / /                                                                  \n"
76 "         / /          // ( )  ___           ||  / /  ___       ___       ___       __       ___       ___          \n"
77 "        / / //   / / // / / //   ) )        || / / //___) ) //   ) ) //   ) ) //   ) ) //   ) ) ((   ) )        \n"
78 "       / / //   / / // / / //   / /         ||/ / //       ((___/ / //   / / //   / / //   / /   \\ \\           \n"
79 " ((___/ / ((___( ( // / / ((___/ /          |  / ((____      //__   ((___( ( //   / / ((___/ / //   ) )          \n"
80 "                                                                                                                  \n"
81 "                            //    / /                                                                           \n"
82 "              ___          //___ / / ( )      ( )  ___       ___                                                 \n"
83 "           //___) )      / ___   / / /      / / //   ) ) ((   ) )                                               \n"

84 "          //           //    / / / /      / / //   / /   \\ \\                                                    \n"

85 "         ((____       //    / / / / ((  / / ((___/ / //   ) )    \x1b[0m                                        \n\n"
86 "-------------------------------------------------------------------------------------------------------------- \n"
       « endl;
87
88 }
```

4.13.3.2 getData()

```
void Sensor::getData (
              int opcion )
```

Get the Data of the object.

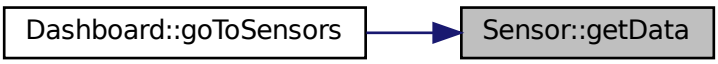
Definition at line 28 of file Sensor.cpp.

```
28                                  {
29
30     if (opcion == 5) {
31         while (true) {
32             cout « "\n\t\tRGB camera:\t\t*imagen*\n" « endl;
33             cout « "\n\t\tPara volver atrás introduzca 0 + ENTER" « endl;
34             cin » back_1;
35             switch (back_1) {
36
37             case 0:
38                 return;
39                 break;
40
41             default:
42
43                 cout « "Orden incorrecta" « endl;
44                 system("sleep 1");
45                 cabeceraSensor();
46                 break;
47             }
48         }
49     }  else if (opcion == 6) {
50         while (true) {
51             cout « "\n\t\tTermal camera:\t\t*imagen*\n" « endl;
52             cout « "\n\t\tPara volver atrás introduzca 0 + ENTER" « endl;
53             cin » back_1;
54             switch (back_1) {
55
```

```
56              case 0:
57                  return;
58                  break;
59
60              default:
61
62                  cout « "Orden incorrecta" « endl;
63                  system("sleep 1");
64                  cabeceraSensor();
65                  break;
66              }
67          }
68      }
69 }
```

References back_1, and opcion.

Here is the caller graph for this function:



4.13.3.3 goBackSensor()

```
void Sensor::goBackSensor ( )  [protected]
```

4.13.3.4 randomData()

```
int Sensor::randomData ( )  [protected]
```

Method that generate a random number which is used to show a value for each sensor.

Returns

int

Definition at line 21 of file Sensor.cpp.

```
21                          {
22      srand(time(NULL));
23      return rand()%10;
24 }
```

4.13.4 Member Data Documentation

4.13.4.1 back_1

```
int Sensor::back_1  [protected]
```

Definition at line 35 of file Sensor.h.

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

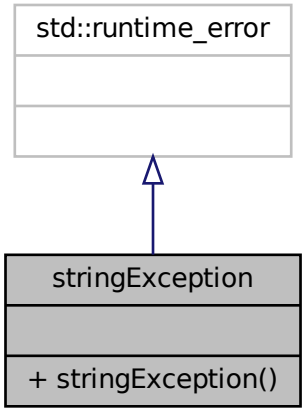
- include/Sensor.h
- src/Sensor.cpp

4.14 stringException Class Reference

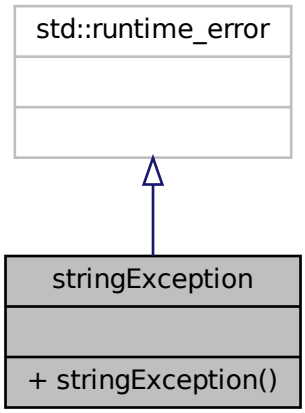
If a string is introduced when an int is needed an exception will be thrown.

```
#include <Exceptions.h>
```

Inheritance diagram for stringException:



Collaboration diagram for stringException:



Public Member Functions

- stringException ()

4.14.1 Detailed Description

If a string is introduced when an int is needed an exception will be thrown.

Definition at line 21 of file Exceptions.h.

4.14.2 Constructor & Destructor Documentation

4.14.2.1 stringException()

```
stringException::stringException ( )  [inline]
```

Definition at line 23 of file Exceptions.h.

```
24     : std::runtime_error ("No se admiten letras o palabras, introduzca de nuevo") {}
```

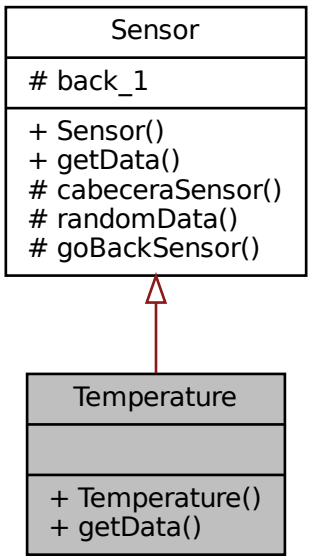
The documentation for this class was generated from the following file:

- include/Exceptions.h

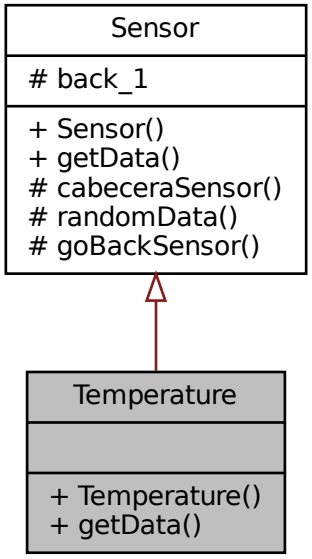
4.15 Temperature Class Reference

`#include <Temperature.h>`

Inheritance diagram for Temperature:



Collaboration diagram for Temperature:



Public Member Functions

- Temperature ()

  Construct a new Temperature object.
- void getData ()

  Get the object data.

Additional Inherited Members

4.15.1 Detailed Description

Definition at line 20 of file Temperature.h.

4.15.2 Constructor & Destructor Documentation

4.15.2.1 Temperature()

```
Temperature::Temperature ( )
```

Construct a new Temperature object.

Definition at line 8 of file Temperature.cpp.

```
8 {}
```

4.15.3 Member Function Documentation

4.15.3.1 getData()

```
void Temperature::getData ( )
```

Get the object data.

Definition at line 11 of file Temperature.cpp.

```
11                          {
12     while (true) {
13         int random = this->randomData();
14         cout « "\n\t\tTemperature:\t\t" « (random + 20) « " °C\n" « endl;
15         cout « "\n\t\tPara volver atrás introduzca 0 + ENTER" « endl;
16         cin » this->back_1;
17         switch (this->back_1) {
18 
19         case 0:
20             return;
21             break;
22 
23         default:
24 
25             cout « "Orden incorrecta" « endl;
26             system("sleep 1");
27             this->cabeceraSensor();
```

```
28             break;
29         }
30     }
31
32 }
```

References back_1.

Here is the caller graph for this function:

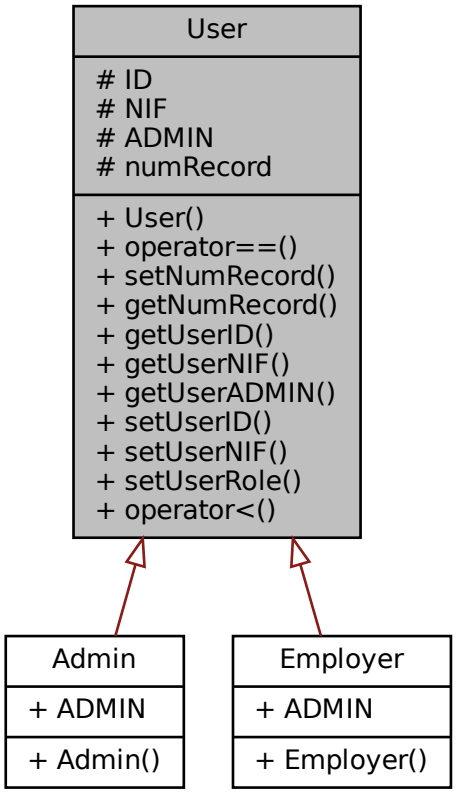
The documentation for this class was generated from the following files:

- include/Temperature.h
- src/Temperature.cpp

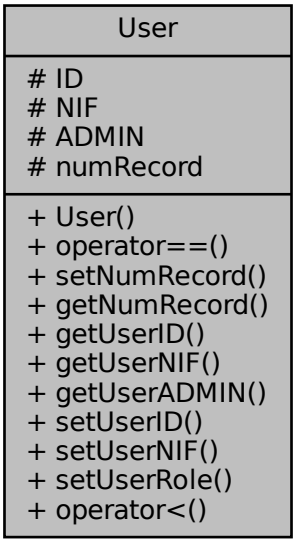
4.16 User Class Reference

`#include <User.h>`

Inheritance diagram for User:



Collaboration diagram for User:



Public Member Functions

- User (int=0, int=0, int=0)

  Construct a new User object.
- bool operator== (const User &) const
- void setNumRecord (int)
- int getNumRecord () const
- int getUserID () const

  Get the User ID.
- int getUserNIF () const

  Get the User NIF.
- int getUserADMIN () const

  Get the User ADMIN.
- void setUserID (int)
- void setUserNIF (int)
- void setUserRole (int)
- bool operator< (const User &) const

  overloading of the operator < to compare users

Protected Attributes

- int ID

  User atributes.
- int NIF
- int ADMIN
- int numRecord

4.16.1 Detailed Description

Definition at line 14 of file User.h.

4.16.2 Constructor & Destructor Documentation

4.16.2.1 User()

```
User::User (
            int id = 0,
            int nif = 0,
            int admin = 0 )
```

Construct a new User object.

Parameters

int	the first is the ID
int	the second is the NIF
int	the third is the role of the user

Definition at line 18 of file User.cpp.

```
18                                      { // Constructor
19     setUserID (id);
20     setUserNIF (nif);
21     setUserRole (admin);
22 }
```

References admin.

4.16.3 Member Function Documentation

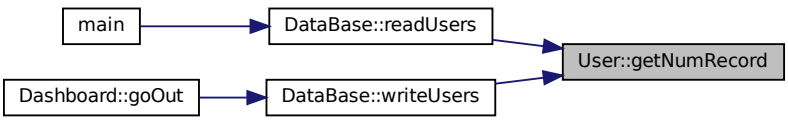
4.16.3.1 getNumRecord()

```
int User::getNumRecord ( ) const
```

Definition at line 62 of file User.cpp.

```
62                                  {
63         return numRecord;
64 }
```

Here is the caller graph for this function:



4.16.3.2 getUserADMIN()

```
int User::getUserADMIN ( ) const
```

Get the User ADMIN.

Returns

int

Definition at line 26 of file User.cpp.

```
26                                  {
27     return ADMIN;
28 }
```

References ADMIN.

4.16.3.3 getUserID()

```
int User::getUserID ( ) const
```

Get the User ID.

Returns

int

Definition at line 30 of file User.cpp.

```
30                                  {
31     return ID;
32 }
```

References ID.

4.16.3.4 getUserNIF()

```
int User::getUserNIF ( ) const
```

Get the User NIF.

Returns

int

Definition at line 34 of file User.cpp.

```
34                                  {
35     return NIF;
36 }
```

References NIF.

4.16.3.5 operator<()

```
bool User::operator< (
            const User & user ) const
```

overloading of the operator < to compare users

Returns

true

false

Definition at line 51 of file User.cpp.

```
51                                          {
52     return ID < user.ID;
53 }
```

References ID, and ID.

4.16.3.6 operator==()

```
bool User::operator== (
            const User & user ) const
```

Definition at line 55 of file User.cpp.

```
55                                           {
56     if (ID == user.ID && NIF == user.NIF) {
57         return true;
58     }
59     return false;
60 }
```

References ID, ID, NIF, and NIF.

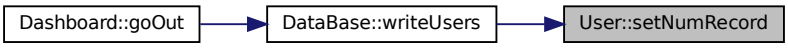
4.16.3.7 setNumRecord()

```
void User::setNumRecord (
            int record )
```

Definition at line 66 of file User.cpp.

```
66                                  {
67         numRecord = record;
68 }
```

Here is the caller graph for this function:



4.16.3.8 setUserID()

```
void User::setUserID (
            int myId )
```

Definition at line 46 of file User.cpp.

```
46                                {
47   NIF = myId;
48 }
```

References NIF.

4.16.3.9 setUserNIF()

```
void User::setUserNIF (
            int myNif )
```

Definition at line 42 of file User.cpp.

```
42                                {
43   ID = myNif;
44 }
```

References ID.

4.16.3.10 setUserRole()

```
void User::setUserRole (
            int myRole )
```

Definition at line 38 of file User.cpp.

```
38                                  {
39   ADMIN = myRole;
40 }
```

References ADMIN.

4.16.4 Member Data Documentation

4.16.4.1 ADMIN

```
int User::ADMIN  [protected]
```

Definition at line 76 of file User.h.

4.16.4.2 ID

```
int User::ID  [protected]
```

User atributes.

Definition at line 74 of file User.h.

4.16.4.3 NIF

```
int User::NIF  [protected]
```

Definition at line 75 of file User.h.

4.16.4.4 numRecord

```
int User::numRecord  [protected]
```

Definition at line 77 of file User.h.

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

- include/User.h
- src/User.cpp

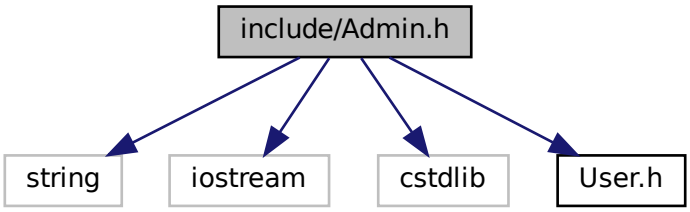
Chapter 5

File Documentation

5.1 include/Admin.h File Reference

```
#include <string>
#include <iostream>
#include <cstdlib>
#include "User.h"
```

Include dependency graph for Admin.h:



Classes

- class Admin

5.1.1 Detailed Description

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-08

Copyright

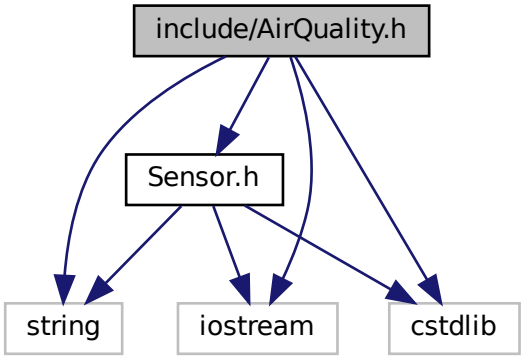
Copyright (c) 2022

5.2 include/AirQuality.h File Reference

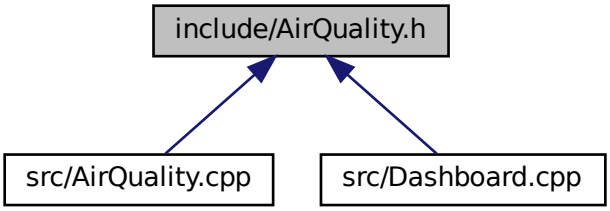
Air Quality sensor.

```
#include <string>
#include <iostream>
#include <cstdlib>
#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

Air Quality sensor.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

2022-11-30

Copyright

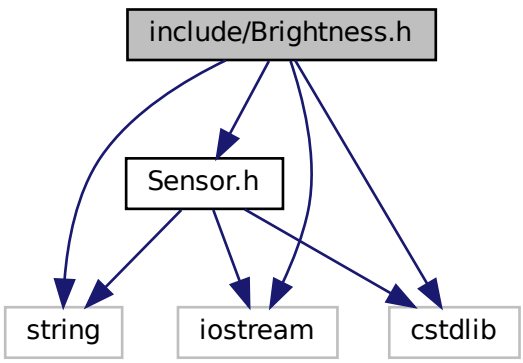
Copyright (c) 2022

5.3 include/Brightness.h File Reference

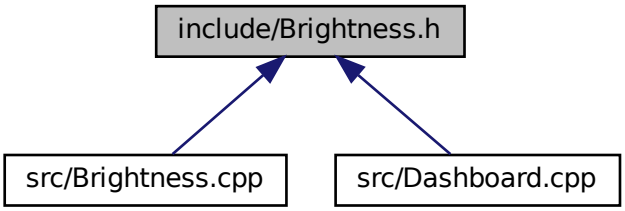
Luminosity sensor.

```
#include <string>
#include <iostream>
#include <cstdlib>
#include "Sensor.h"
```

Include dependency graph for Brightness.h:



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



Classes

- class Brightness

5.3.1 Detailed Description

Luminosity sensor.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

2022-11-30

Copyright

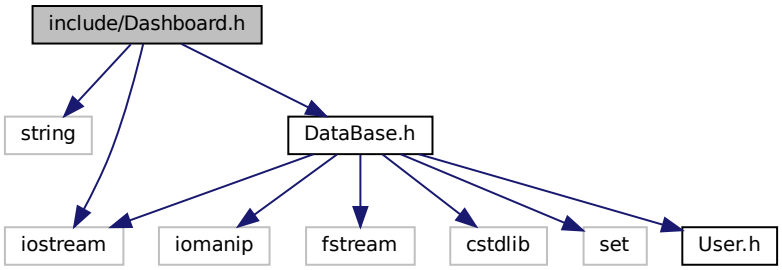
Copyright (c) 2022

5.4 include/Dashboard.h File Reference

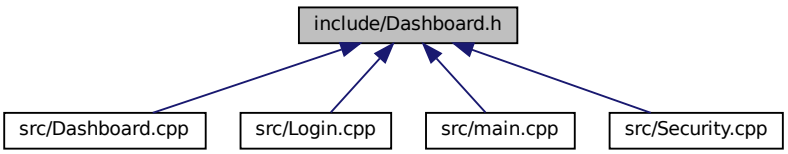
main menu

```
#include <string>
#include <iostream>
#include "DataBase.h"
```

Include dependency graph for Dashboard.h:



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



Classes

- class Dashboard

5.4.1 Detailed Description

main menu

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

3

Date

2022-11-30

Copyright

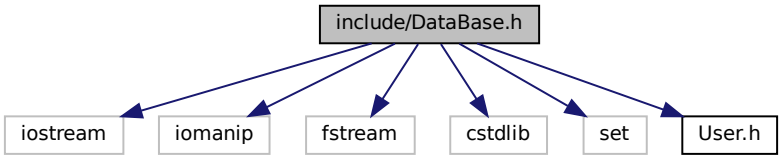
Copyright (c) 2022

5.5 include/DataBase.h File Reference

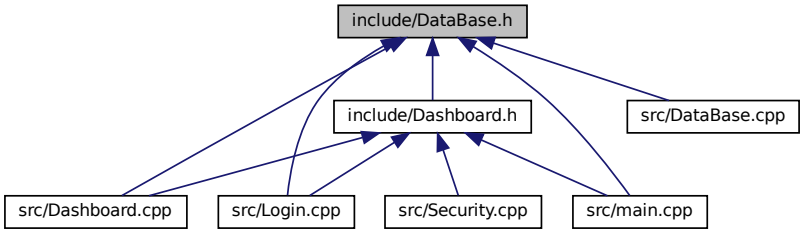
DataBase implementation and validate users's methods.

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

Include dependency graph for DataBase.h:



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



Classes

- class DataBase

5.5.1 Detailed Description

DataBase implementation and validate users's methods.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

3.0

Date

2022-11-30

Copyright

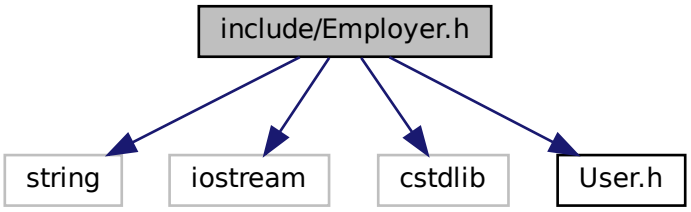
Copyright (c) 2022

5.6 include/Employer.h File Reference

Object employer.

```
#include <string>
#include <iostream>
#include <cstdlib>
#include "User.h"
```

Include dependency graph for Employer.h:



Classes

- class Employer

5.6.1 Detailed Description

Object employer.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-08

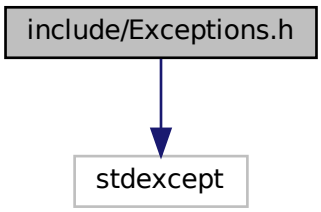
Copyright

Copyright (c) 2022

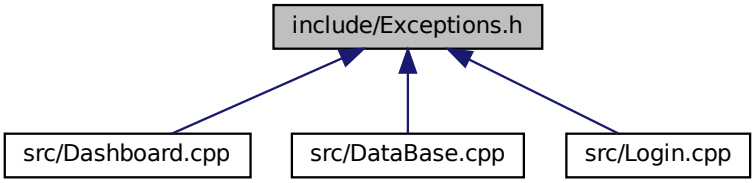
5.7 include/Exceptions.h File Reference

Exception that may ocurr in the interface.

`#include <stdexcept>`
Include dependency graph for Exceptions.h:



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



Classes

- class stringException

  If a string is introduced when an int is needed an exception will be thrown.
- class credentialException

  If the ID or NIF are incorrect, the exception will be thrown.
- class instructionException

  If the instruction of the menu is wrong, the exception appears.
- class actualUserException

5.7.1 Detailed Description

Exception that may ocurr in the interface.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

2022-12-18

Copyright

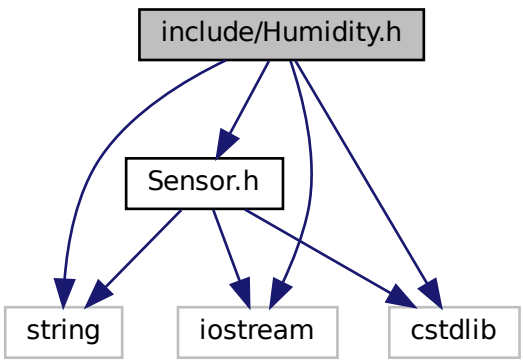
Copyright (c) 2022

5.8 include/Humidity.h File Reference

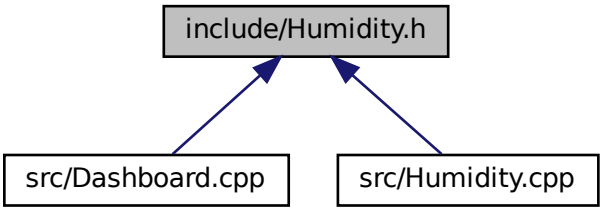
Humidity sensor.

```
#include <string>
#include <iostream>
#include <cstdlib>
#include "Sensor.h"
```

Include dependency graph for Humidity.h:



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



Classes

- class Humidity

5.8.1 Detailed Description

Humidity sensor.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

2022-11-30

Copyright

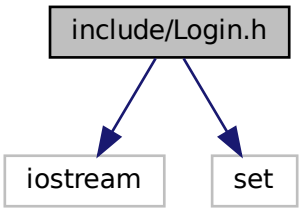
Copyright (c) 2022

5.9 include/Login.h File Reference

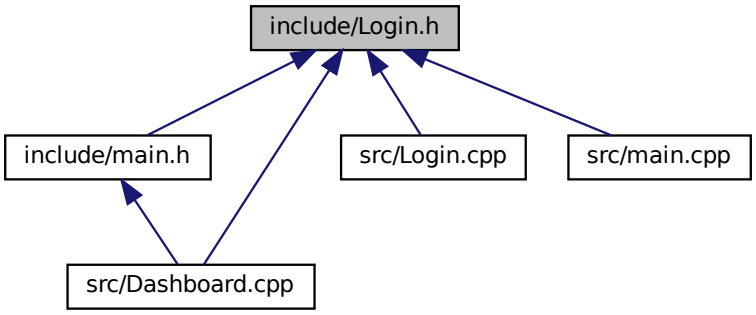
Login interface.

```
#include <iostream>
#include <set>
```

Include dependency graph for Login.h:



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



Classes

- class Login

5.9.1 Detailed Description

Login interface.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

2022-11-30

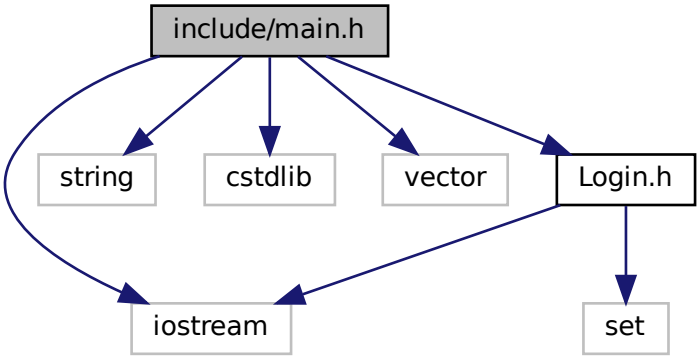
Copyright

5.10 include/main.h File Reference

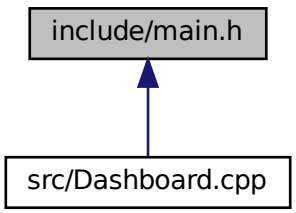
Main program.

```
#include <iostream>
#include <string>
#include <cstdlib>
#include <vector>
#include "Login.h"
```

Include dependency graph for main.h:



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



Variables

- Login l
- Dashboard d

5.10.1 Detailed Description

Main program.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

2

Date

2022-11-30

Copyright

Copyright (c) 2022

5.10.2 Variable Documentation

5.10.2.1 d

```
Dashboard d
```

Definition at line 22 of file main.h.

5.10.2.2 l

```
Login l
```

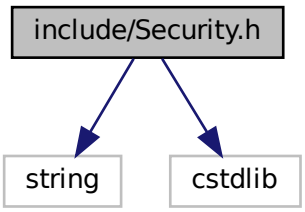
Definition at line 21 of file main.h.

5.11 include/Security.h File Reference

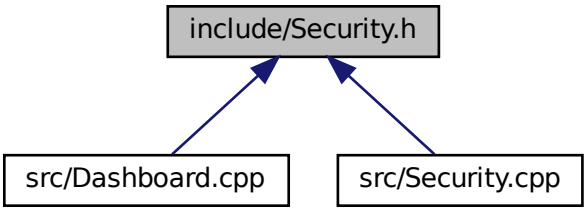
Security methods.

```
#include <string>
#include <cstdlib>
```

Include dependency graph for Security.h:



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



Classes

- class Security

5.11.1 Detailed Description

Security methods.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

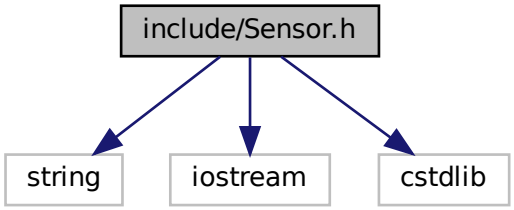
2022-11-30

Copyright

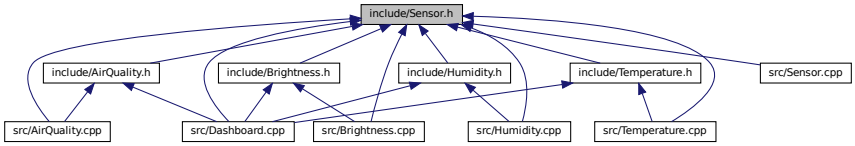
5.12 include/Sensor.h File Reference

```
#include <string>
#include <iostream>
#include <cstdlib>
```

Include dependency graph for Sensor.h:



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



Classes

- class Sensor

5.12.1 Detailed Description

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

2022-11-30

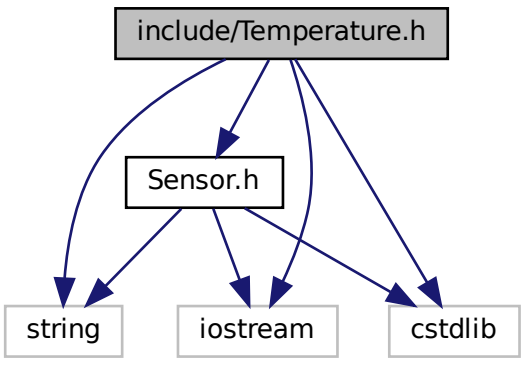
Copyright

5.13 include/Temperature.h File Reference

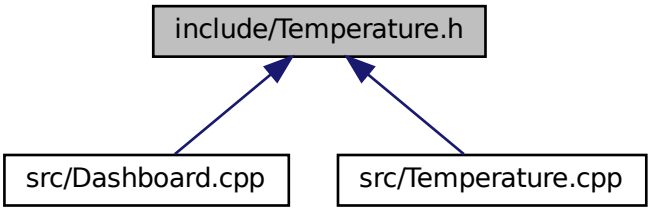
Temperature sensor.

```
#include <string>
#include <iostream>
#include <cstdlib>
#include "Sensor.h"
```

Include dependency graph for Temperature.h:



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



Classes

- class Temperature

5.13.1 Detailed Description

Temperature sensor.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

2022-11-30

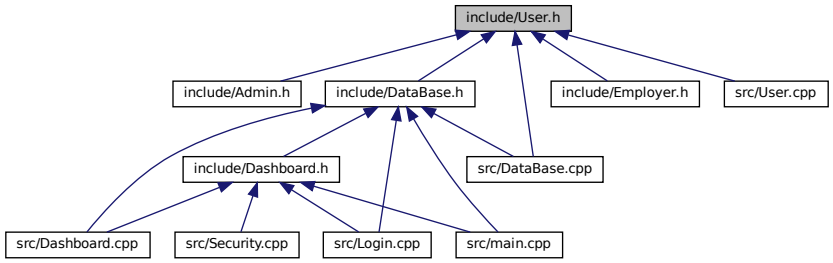
Copyright

Copyright (c) 2022

5.14 include/User.h File Reference

User object's file.

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



Classes

- class User

5.14.1 Detailed Description

User object's file.

Author

Iker Peral del Pino (i.peral.2021@alumnos.urjc.es)

Version

0.1

Date

2022-11-30

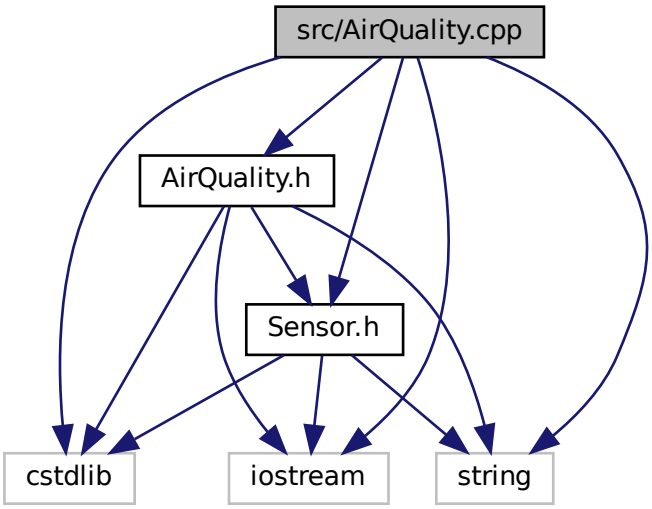
Copyright

Copyright (c) 2022

5.15 src/AirQuality.cpp File Reference

```
#include <iostream>
#include <string>
#include <cstdlib>
#include "Sensor.h"
#include "AirQuality.h"
```

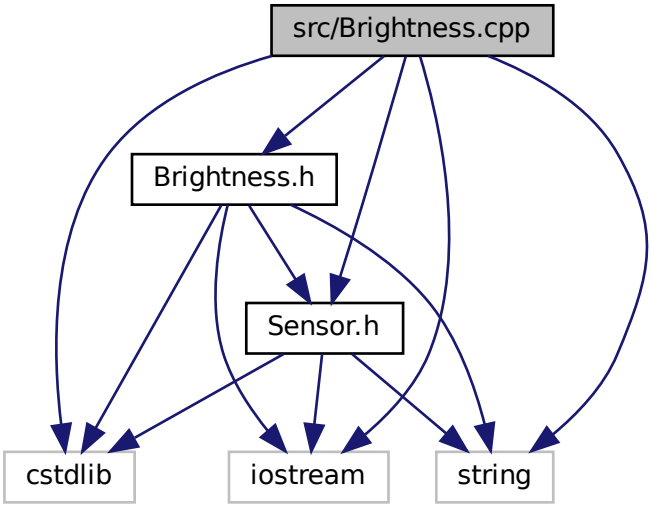
Include dependency graph for AirQuality.cpp:



5.16 src/Brightness.cpp File Reference

```
#include <iostream>
#include <string>
#include <cstdlib>
#include "Sensor.h"
#include "Brightness.h"
```

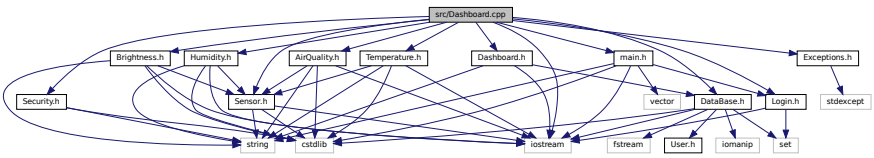
Include dependency graph for Brightness.cpp:



5.17 src/Dashboard.cpp File Reference

```
#include <iostream>
#include "Temperature.h"
#include "Humidity.h"
#include "Brightness.h"
#include "AirQuality.h"
#include "Security.h"
#include "Sensor.h"
#include "DataBase.h"
#include "Dashboard.h"
#include "main.h"
#include "Login.h"
#include "Exceptions.h"
```

Include dependency graph for Dashboard.cpp:



Variables

- int opcion
- Security s
- Sensor sen
- Temperature temp
- Brightness brigh
- Humidity hum
- AirQuality airq
- DataBase * database

5.17.1 Variable Documentation

5.17.1.1 airq

```
AirQuality airq
```

Definition at line 36 of file Dashboard.cpp.

5.17.1.2 brigh

```
Brightness brigh
```

Definition at line 34 of file Dashboard.cpp.

5.17.1.3 database

```
DataBase* database
```

Definition at line 38 of file Dashboard.cpp.

5.17.1.4 hum

```
Humidity hum
```

Definition at line 35 of file Dashboard.cpp.

5.17.1.5 opcion

```
int opcion
```

Definition at line 24 of file Dashboard.cpp.

5.17.1.6 s

```
Security s
```

Definition at line 31 of file Dashboard.cpp.

5.17.1.7 sen

```
Sensor sen
```

Definition at line 32 of file Dashboard.cpp.

5.17.1.8 temp

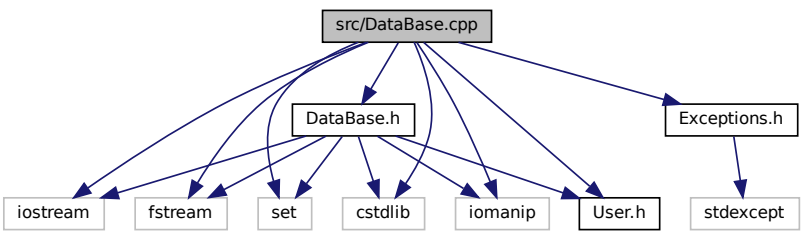
```
Temperature temp
```

Definition at line 33 of file Dashboard.cpp.

5.18 src/DataBase.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <set>
#include <cstdlib>
#include <iomanip>
#include "DataBase.h"
#include "User.h"
#include "Exceptions.h"
```

Include dependency graph for DataBase.cpp:



Variables

- bool valided
- int nuevoID
- int nuevoNIF
- int admin

5.18.1 Variable Documentation

5.18.1.1 admin

```
int admin
```

Definition at line 22 of file DataBase.cpp.

5.18.1.2 nuevoID

```
int nuevoID
```

Definition at line 20 of file DataBase.cpp.

5.18.1.3 nuevoNIF

```
int nuevoNIF
```

Definition at line 21 of file DataBase.cpp.

5.18.1.4 valided

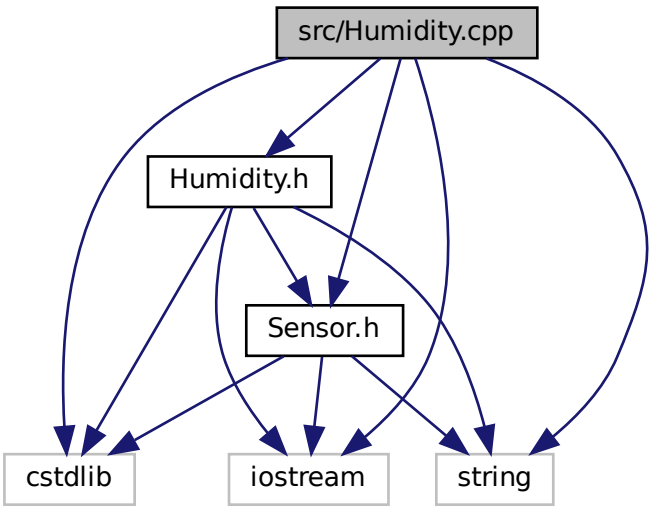
```
bool valided
```

Definition at line 19 of file DataBase.cpp.

5.19 src/Humidity.cpp File Reference

```
#include <iostream>
#include <string>
#include <cstdlib>
#include "Sensor.h"
#include "Humidity.h"
```

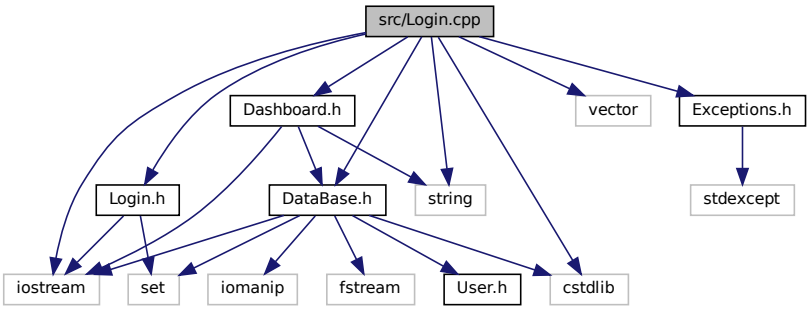
Include dependency graph for Humidity.cpp:



5.20 src/Login.cpp File Reference

```
#include <iostream>
#include <string>
#include <cstdlib>
#include <vector>
#include "Dashboard.h"
#include "DataBase.h"
#include "Login.h"
#include "Exceptions.h"
```

Include dependency graph for Login.cpp:



Variables

- int temp_ID
- int temp_NIF
- bool data_valid = false
- int contador = 0
- int intentos = 3

5.20.1 Variable Documentation

5.20.1.1 contador

```
int contador = 0
```

Definition at line 33 of file Login.cpp.

5.20.1.2 data_valid

```
bool data_valid = false
```

Definition at line 30 of file Login.cpp.

5.20.1.3 intentos

```
int intentos = 3
```

Definition at line 34 of file Login.cpp.

5.20.1.4 temp_ID

```
int temp_ID
```

Definition at line 27 of file Login.cpp.

5.20.1.5 temp_NIF

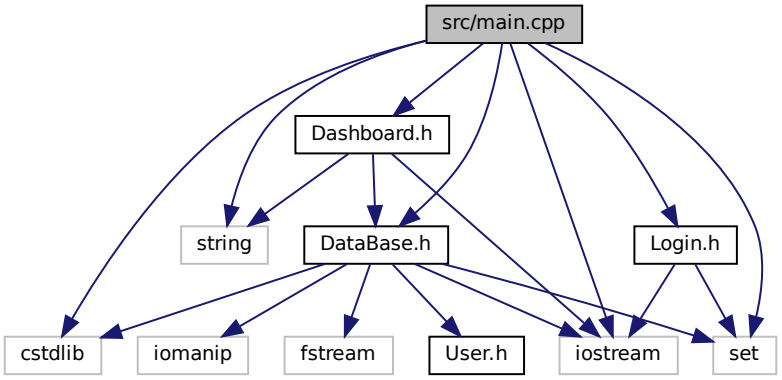
```
int temp_NIF
```

Definition at line 28 of file Login.cpp.

5.21 src/main.cpp File Reference

```
#include <iostream>
#include <string>
#include <cstdlib>
#include <set>
#include "DataBase.h"
#include "Login.h"
#include "Dashboard.h"
```

Include dependency graph for main.cpp:



Functions

- int main ()

5.21.1 Function Documentation

5.21.1.1 main()

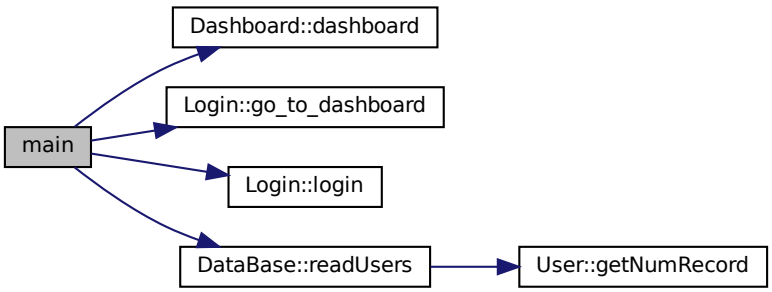
```
int main ( )
```

Definition at line 19 of file main.cpp.

```
19           {
20     DataBase* ptrbase;
21     try {
22         ptrbase = new DataBase();
23     } catch (bad_alloc &except) {
24     cerr « "Exception!: " « except.what() « endl;
25     }
26
27     ptrbase->readUsers();
28     // a login and a dashboard objects are created
29     Login l;
30     Dashboard d;
31     while (true) {
32
33         system("clear"); // used in lots of functions to clear the screen
34         l.login(ptrbase); // initialize the login screen
35         d.dashboard(ptrbase, l.go_to_dashboard());
36     }
37     return 0;
38 }
```

References d, Dashboard::dashboard(), Login::go_to_dashboard(), l, Login::login(), and DataBase::readUsers().

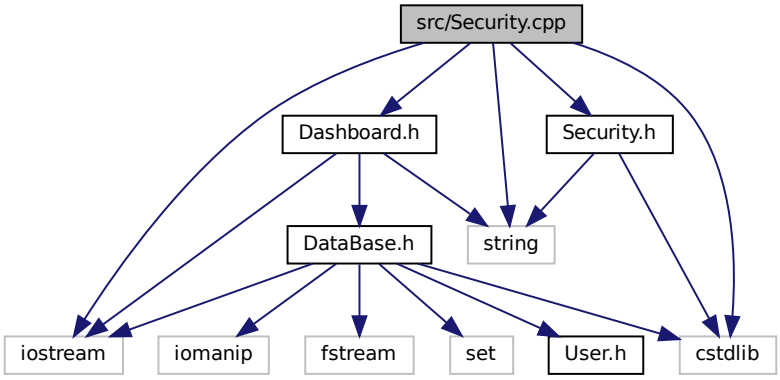
Here is the call graph for this function:



5.22 src/Security.cpp File Reference

```
#include <iostream>
#include <string>
#include <cstdlib>
#include "Security.h"
#include "Dashboard.h"
```

Include dependency graph for Security.cpp:



Variables

- string seguridad
- string open
- string alarm_status = "encendido"
- int entrada
- int back
- Dashboard db

5.22.1 Variable Documentation

5.22.1.1 alarm_status

```
string alarm_status = "encendido"
```

Definition at line 19 of file Security.cpp.

5.22.1.2 back

```
int back
```

Definition at line 22 of file Security.cpp.

5.22.1.3 db

```
Dashboard db
```

Definition at line 26 of file Security.cpp.

5.22.1.4 entrada

```
int entrada
```

Definition at line 20 of file Security.cpp.

5.22.1.5 open

```
string open
```

Definition at line 18 of file Security.cpp.

5.22.1.6 seguridad

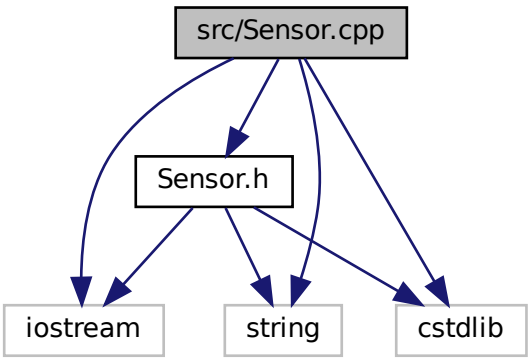
```
string seguridad
```

Definition at line 17 of file Security.cpp.

5.23 src/Sensor.cpp File Reference

```
#include <iostream>
#include <string>
#include <cstdlib>
#include "Sensor.h"
```

Include dependency graph for Sensor.cpp:



Variables

- int back_1

5.23.1 Variable Documentation

5.23.1.1 back_1

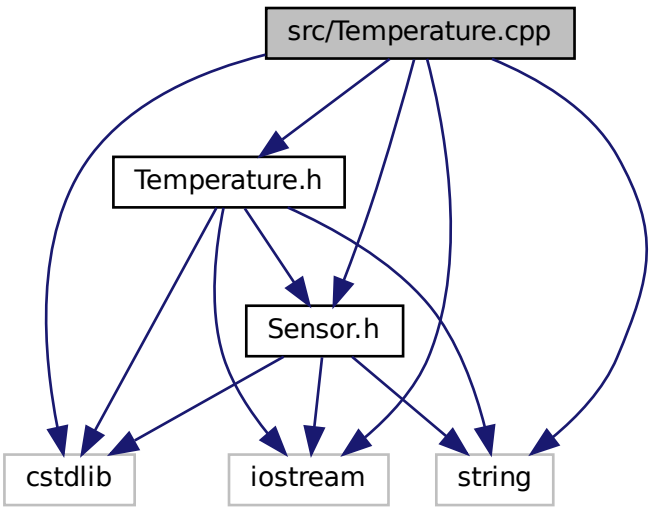
```
int back_1
```

Definition at line 18 of file Sensor.cpp.

5.24 src/Temperature.cpp File Reference

```
#include <iostream>
#include <string>
#include <cstdlib>
#include "Sensor.h"
#include "Temperature.h"
```

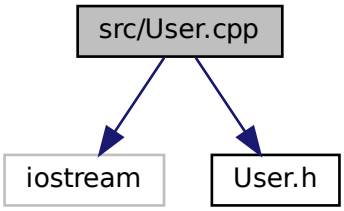
Include dependency graph for Temperature.cpp:



5.25 src/User.cpp File Reference

```
#include <iostream>
#include "User.h"
```

Include dependency graph for User.cpp:



Variables

- int ID
- int NIF
- int ADMIN

5.25.1 Variable Documentation

5.25.1.1 ADMIN

```
int ADMIN
```

Definition at line 16 of file User.cpp.

5.25.1.2 ID

```
int ID
```

Definition at line 14 of file User.cpp.

5.25.1.3 NIF

```
int NIF
```

Definition at line 15 of file User.cpp.

Index