library-system

Generated by Doxygen 1.9.4

1 Hierarchical Index	1
1.1 Class Hierarchy	1
2 Class Index	3
2.1 Class List	3
3 File Index	5
3.1 File List	5
4 Class Documentation	7
4.1 admin Class Reference	7
4.1.1 Constructor & Destructor Documentation	7
4.1.1.1 admin()	7
4.1.2 Member Function Documentation	7
4.1.2.1 editBook()	7
4.1.2.2 editLibrary()	8
4.1.2.3 editUser()	8
4.1.2.4 login()	8
4.2 book Class Reference	9
4.2.1 Detailed Description	9
4.2.2 Constructor & Destructor Documentation	9
4.2.2.1 book() [1/2]	9
4.2.2.2 book() [2/2]	9
4.2.3 Member Function Documentation	10
4.2.3.1 borrow()	10
4.2.3.2 isExpired()	10
4.2.3.3 returnBook()	10
4.2.4 Friends And Related Function Documentation	10
4.2.4.1 borrowReturnMenu	10
4.2.4.2 openLibrary	11
4.2.4.3 operator<<	11
4.2.4.4 saveLibrary	11
4.3 date Class Reference	11
4.3.1 Detailed Description	12
4.3.2 Constructor & Destructor Documentation	12
4.3.2.1 date() [1/2]	12
4.3.2.2 date() [2/2]	12
4.3.2.3 ∼date()	12
4.3.3 Member Function Documentation	13
4.3.3.1 display()	13
4.3.3.2 displayDay()	13
4.3.3.3 displayMonth()	13
4.3.3.4 displayYear()	13

4.3.3.5 isFuture()	. 13
4.3.3.6 isLeapYear()	. 13
4.3.3.7 isPast()	. 13
4.3.3.8 isToday()	. 14
4.3.3.9 isValid()	. 14
4.3.4 Friends And Related Function Documentation	. 14
4.3.4.1 operator+	. 14
4.3.4.2 operator++	. 14
4.3.4.3 operator- [1/2]	. 14
4.3.4.4 operator- [2/2]	. 14
4.3.4.5 operator	. 15
4.3.4.6 operator <<	. 15
4.3.4.7 operator>>	. 15
4.4 error Class Reference	. 15
4.4.1 Detailed Description	. 15
4.4.2 Constructor & Destructor Documentation	. 16
4.4.2.1 error() [1/2]	. 16
4.4.2.2 error() [2/2]	. 16
4.5 library Class Reference	. 16
4.5.1 Detailed Description	. 17
4.5.2 Constructor & Destructor Documentation	. 17
4.5.2.1 library()	. 17
4.5.3 Member Function Documentation	. 17
4.5.3.1 addBook() [1/2]	. 17
4.5.3.2 addBook() [2/2]	. 17
4.5.3.3 addUser() [1/2]	. 17
4.5.3.4 addUser() [2/2]	. 18
4.5.3.5 libraryInfo()	. 18
4.5.3.6 searchBook()	. 18
4.5.3.7 searchUser()	. 18
4.5.3.8 showAllBooks()	. 19
4.5.3.9 showAllUsers()	. 19
4.5.3.10 showBook()	. 19
4.5.3.11 showUser()	. 19
4.5.4 Friends And Related Function Documentation	. 20
4.5.4.1 borrowReturnMenu	. 20
4.5.4.2 openLibrary	. 20
4.5.4.3 saveLibrary	. 20
4.6 user Class Reference	. 20
4.6.1 Detailed Description	. 21
4.6.2 Constructor & Destructor Documentation	. 21
4.6.2.1 user() [1/2]	. 21

4.6.2.2 user() [2/2]	21
4.6.3 Member Function Documentation	21
4.6.3.1 showUserWithID()	21
4.6.3.2 userCounter()	22
4.6.4 Friends And Related Function Documentation	22
4.6.4.1 openLibrary	22
4.6.4.2 operator <<	22
4.6.4.3 saveLibrary	22
5 File Documentation	23
5.1 functions.cpp File Reference	23
5.1.1 Detailed Description	
5.1.2 Function Documentation	
5.1.2.1 aboutApp()	24
5.1.2.2 adminPanel()	24
5.1.2.3 borrowReturnMenu()	24
5.1.2.4 currentDate()	24
5.1.2.5 displayBookMenu()	24
5.1.2.6 displayUserMenu()	
5.1.2.7 gap()	25
5.1.2.8 menu()	25
5.1.2.9 openLibrary()	25
5.1.2.10 operator+()	26
5.1.2.11 operator++()	26
5.1.2.12 operator-() [1/2]	26
5.1.2.13 operator-() [2/2]	26
5.1.2.14 operator()	26
5.1.2.15 operator<<() [1/3]	26
5.1.2.16 operator<<() [2/3]	27
5.1.2.17 operator <<() [3/3]	27
5.1.2.18 operator>>()	27
5.1.2.19 saveLibrary()	27
5.1.2.20 welcome()	27
5.2 functions.h File Reference	27
5.2.1 Detailed Description	28
5.2.2 Function Documentation	28
5.2.2.1 aboutApp()	28
5.2.2.2 adminPanel()	29
5.2.2.3 borrowReturnMenu()	29
5.2.2.4 currentDate()	29
5.2.2.5 displayBookMenu()	29
5.2.2.6 displayUserMenu()	29

	5.2.2.7 gap()	
	5.2.2.8 menu()	
	5.2.2.9 openLibrary()	
	5.2.2.10 operator<<() [1/2]	
	5.2.2.11 operator<<() [2/2]	
	5.2.2.12 saveLibrary()	
	5.2.2.13 welcome()	
5.3 functions	s.h	
5.4 library-sy	system.cpp File Reference	3
5.4.1 D	Detailed Description	
Index		3

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

book	 								 														S
date	 																						11
error																							
library .																							
user	 																						20
admin								 					 										. 7

2 Hierarchical Index

Chapter 2

Class Index

2.1 Class List

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

admin														 						 					
book .														 						 					9
date .																				 					- 1
error .																				 					1
library														 						 					- 10
user																									2

4 Class Index

Chapter 3

File Index

3.1 File List

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

tunctions.cpp										
Library system	 	 	 	 	 	 				 . 23
functions.h										
Library system	 	 	 	 	 	 				 . 27
library-system.cpp										
Library system	 	 	 	 	 	 		 		. 33

6 File Index

Chapter 4

Class Documentation

4.1 admin Class Reference

Inheritance diagram for admin:



Public Member Functions

- admin ()
- bool login (std::string &login, std::string &psw)
- void editBook (library &I, long int bID)
- void editUser (library &I, long int uID)
- void editLibrary (library &I)

4.1.1 Constructor & Destructor Documentation

4.1.1.1 admin()

```
admin::admin ()
```

Default admin constructor name = "Jan"; lastName = "Kowalski"; username = "admin"; password = "zaq1@WSX";

4.1.2 Member Function Documentation

4.1.2.1 editBook()

Method which allows to edit book in given library

Parameters

1	- library in which we edit the book
bID	- book to edit, ID of the book is used

4.1.2.2 editLibrary()

Method used for editing library information

Parameters

```
    I library to edit
```

4.1.2.3 editUser()

Method which allows to edit user in given library

Parameters

1	- library in which we edit the user
uID	- user to edit, ID of the user is used

4.1.2.4 login()

Method which checks if the login and password are correct

Parameters

login	- login
psw	- password

4.2 book Class Reference 9

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

- · functions.h
- · functions.cpp

4.2 book Class Reference

```
#include <functions.h>
```

Public Member Functions

- book ()
- book (std::string t, std::string an, std::string asn)
- book & borrow (user &u)
- book & returnBook (user &u)
- bool isExpired (int days)

Friends

- · class user
- · class library
- · class admin
- std::ostream & operator<< (std::ostream &s, const book &bookToDisplay)
- void saveLibrary (const library &I)
- void openLibrary (library &l)
- void borrowReturnMenu (library &I)

4.2.1 Detailed Description

Class which represents book element in library

4.2.2 Constructor & Destructor Documentation

4.2.2.1 book() [1/2]

```
book::book ( )
```

Default book constructor title = "no-title"; authorName = "no-author-name"; authorSurname = "no-author-surname";

4.2.2.2 book() [2/2]

```
book::book (
          std::string t,
          std::string an,
          std::string asn )
```

Book constructor

Parameters

t	- book title
an	- author name
asn	- author surname

4.2.3 Member Function Documentation

4.2.3.1 borrow()

```
book & book::borrow (
    user & u )
```

Method assigns user ID and date of borrowing to book

4.2.3.2 isExpired()

Method which checks if the book ius expired

4.2.3.3 returnBook()

Method which checks if current user can return the book, and if yes - it allows to do it

4.2.4 Friends And Related Function Documentation

4.2.4.1 borrowReturnMenu

Functon which allows to borrow and to return books to library

4.3 date Class Reference 11

4.2.4.2 openLibrary

```
void openLibrary ( \label{library & $l$ ibrary & $l$ ) [friend]
```

Function which creates library from files @I - library which is modified

4.2.4.3 operator <<

Book operator, which displays data of the book

4.2.4.4 saveLibrary

```
void saveLibrary ( {\tt const\ library\ \&\ 1\ )} \quad [{\tt friend}]
```

Function which saves library class to external txt file

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

- functions.h
- · functions.cpp

4.3 date Class Reference

```
#include <functions.h>
```

Public Member Functions

- date ()
- date (int d, int m, int y)
- ~date ()
- int displayDay ()
- int displayMonth ()
- int displayYear ()
- void display ()
- bool isLeapYear ()
- bool isValid ()
- bool isPast ()
- bool isFuture ()
- bool isToday ()

Friends

```
• date & operator++ (date &d)
```

- date & operator-- (date &d)
- std::ostream & operator<< (std::ostream &s, const date &d)
- std::istream & operator>> (std::istream &s, date &d)
- date & operator+ (date &d, int days)
- date & operator- (date &d, int days)
- int operator- (date &d1, date &d2)

4.3.1 Detailed Description

Class used for handling dates Date is represented by day, month and year

4.3.2 Constructor & Destructor Documentation

4.3.2.1 date() [1/2]

```
date::date ( )
```

Default constructor day = 1; month = 1; year = 2000;

4.3.2.2 date() [2/2]

```
date::date (
          int d,
          int m,
           int y ) [inline]
```

Constructor with parameters

Parameters

d	- day
m	- month
У	- year

4.3.2.3 \sim date()

```
date::~date ( ) [inline]
```

Destructor

4.3 date Class Reference

4.3.3 Member Function Documentation

4.3.3.1 display()

```
void date::display ( )
```

Method which displays date

4.3.3.2 displayDay()

```
int date::displayDay ( )
```

Method which displays day

4.3.3.3 displayMonth()

```
int date::displayMonth ( )
```

Method which displays month

4.3.3.4 displayYear()

```
int date::displayYear ( )
```

Method which displays year

4.3.3.5 isFuture()

```
bool date::isFuture ( )
```

Method which checks if date is in the future

4.3.3.6 isLeapYear()

```
bool date::isLeapYear ( )
```

Method which cheecks if the year is leap

4.3.3.7 isPast()

```
bool date::isPast ( )
```

Method which checks if date is in the past

4.3.3.8 isToday()

```
bool date::isToday ( )
```

Method which checks if date is today

4.3.3.9 isValid()

```
bool date::isValid ( )
```

Method which checks if date is valid

4.3.4 Friends And Related Function Documentation

4.3.4.1 operator+

friend, operator used to add days to date

4.3.4.2 operator++

friend, increment operator

4.3.4.3 operator- [1/2]

friend, operator used to subtract days from date

4.3.4.4 operator- [2/2]

friend, operator used to subtract date from date

4.4 error Class Reference 15

4.3.4.5 operator--

friend, decrement operator

4.3.4.6 operator <<

```
std::ostream & operator<< (
          std::ostream & s,
          const date & d ) [friend]</pre>
```

friend, operator used to display date

4.3.4.7 operator>>

friend, operator used to enter date

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

- functions.h
- functions.cpp

4.4 error Class Reference

```
#include <functions.h>
```

Public Member Functions

- error ()
- error (std::string m)

Public Attributes

· std::string errorText

4.4.1 Detailed Description

Class used for indicating errors in the program

4.4.2 Constructor & Destructor Documentation

Contructor with string to change @errorText - error text

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

- · functions.h
- functions.cpp

4.5 library Class Reference

```
#include <functions.h>
```

Public Member Functions

- library ()
- void libraryInfo ()
- void addBook ()
- void addBook (std::string t, std::string an, std::string asn)
- void showAllBooks ()
- void addUser ()
- void addUser (std::string nam, std::string lastNam)
- void showAllUsers ()
- void showBook (long int bID)
- void showUser (long int uID)
- void searchBook (int option, std::string searchString="", std::string searchString2="")
- void searchUser (int option, std::string searchString="", std::string searchString2="")

Friends

- · class admin
- void saveLibrary (const library &I)
- void openLibrary (library &l)
- void borrowReturnMenu (library &I)

4.5.1 Detailed Description

Class which represents library

4.5.2 Constructor & Destructor Documentation

4.5.2.1 library()

```
library::library ( )
```

Default book constructor libraryName = "Main library" cityName = "Gliwice" lengthOfBorrow = 14

4.5.3 Member Function Documentation

4.5.3.1 addBook() [1/2]

```
void library::addBook ( )
```

Method which add book to library (constructor with no parameters)

4.5.3.2 addBook() [2/2]

Method which add book to library. It adds the book with entered parameters.

Parameters

t	- book title
an	- author name
asn	- author surname

4.5.3.3 addUser() [1/2]

```
void library::addUser ( )
```

This method let adding user to the library (constructor with no parameters)

4.5.3.4 addUser() [2/2]

This method let adding user to the library

Parameters

nam	= name
lastNam	= surname

4.5.3.5 libraryInfo()

```
void library::libraryInfo ( )
```

Method displays information about library

4.5.3.6 searchBook()

Method used for book searching

Parameters

option	- mode of searching (2 - book name, 3 author, 4 - borrowed, 5 - not borrowed)
searchString	- string to search
searchString2	- another param to search, used in author search

4.5.3.7 searchUser()

Method used for book searching

Parameters

option	- mode of searching (2 - search by name, 3 - search by surname, 4 search by name and surname)
searchString	- string to search
searchString2	- another param to search, used in author search

4.5.3.8 showAllBooks()

```
void library::showAllBooks ( )
```

Method which displays all books in the library

4.5.3.9 showAllUsers()

```
void library::showAllUsers ( )
```

Method which displays all users in the library

4.5.3.10 showBook()

Method which display book by given ID

Parameters

```
bID - ID of book which will be displayed
```

4.5.3.11 showUser()

Method which display user by given ID

Parameters

```
uID - ID of user
```

4.5.4 Friends And Related Function Documentation

4.5.4.1 borrowReturnMenu

```
void borrowReturnMenu ( \label{library & $l$ ibrary & $l$ ) [friend]
```

Functon which allows to borrow and to return books to library

4.5.4.2 openLibrary

```
void openLibrary ( \label{library & $l$ ibrary & $l$ ) [friend]
```

Function which creates library from files @I - library which is modified

4.5.4.3 saveLibrary

```
void saveLibrary ( {\tt const\ library\ \&\ \it l\ )} \quad [{\tt friend}]
```

Function which saves library class to external txt file

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

- · functions.h
- functions.cpp

4.6 user Class Reference

```
#include <functions.h>
```

Inheritance diagram for user:



Public Member Functions

- user ()
- user (std::string nam, std::string lastNam)
- virtual void userCounter ()
- void showUserWithID ()

4.6 user Class Reference 21

Friends

- class book
- · class library
- · class admin
- std::ostream & operator<< (std::ostream &s, const user &userToDisplay)
- void saveLibrary (const library &I)
- void openLibrary (library &I)

4.6.1 Detailed Description

Class which represents users of library

4.6.2 Constructor & Destructor Documentation

```
4.6.2.1 user() [1/2]
```

```
user::user ( )
```

Default user constructor name = "Jan"; lastName = "Kowalski";

4.6.2.2 user() [2/2]

User constructor

Parameters

nam	= name
lastNam	= surname

4.6.3 Member Function Documentation

4.6.3.1 showUserWithID()

```
void user::showUserWithID ( )
```

Method which dispplays user information with ID

4.6.3.2 userCounter()

```
void user::userCounter ( ) [virtual]
```

Function used for user counting

4.6.4 Friends And Related Function Documentation

4.6.4.1 openLibrary

```
void openLibrary ( \label{library & $l$ ibrary & $l$ ) [friend]
```

Function which creates library from files @I - library which is modified

4.6.4.2 operator <<

User operator, which displays data of the user

4.6.4.3 saveLibrary

Function which saves library class to external txt file

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

- functions.h
- functions.cpp

Chapter 5

File Documentation

5.1 functions.cpp File Reference

Library system.

```
#include "functions.h"
```

Functions

- void welcome ()
- void menu (library &I, admin &a)
- void displayBookMenu (library &I)
- · void displayUserMenu (library &I)
- void adminPanel (library &I, admin &a)
- void aboutApp ()
- void saveLibrary (const library &I)
- void borrowReturnMenu (library &I)
- void openLibrary (library &I)
- date currentDate ()
- void gap ()
- date & operator++ (date &d)
- date & operator-- (date &d)
- std::ostream & operator<< (std::ostream &s, const date &d)
- std::istream & operator>> (std::istream &s, date &d)
- date & operator+ (date &d, int days)
- date & operator- (date &d, int days)
- int operator- (date &d1, date &d2)
- std::ostream & operator<< (std::ostream &s, const book &bookToDisplay)
- std::ostream & operator<< (std::ostream &s, const user &userToDisplay)

24 File Documentation

5.1.1 Detailed Description

```
Library system.
```

Author

```
Maciej Jarnot ( mj300741@student.polsl.pl)
```

Version

ν2

Date

07.03.2023

5.1.2 Function Documentation

5.1.2.1 aboutApp()

```
void aboutApp ( )
```

A little description what the program does

5.1.2.2 adminPanel()

Displays admin panel used for editing library, books or users

5.1.2.3 borrowReturnMenu()

Functon which allows to borrow and to return books to library

5.1.2.4 currentDate()

```
date currentDate ( )
```

Function which returns current date

5.1.2.5 displayBookMenu()

```
void displayBookMenu ( library \ \& \ I \ )
```

Function shows menu to find some book

Parameters

```
I - library to handle
```

5.1.2.6 displayUserMenu()

```
void displayUserMenu ( library \ \& \ I \ )
```

Function shows menu which helps to find a user

Parameters

```
/ - library to handle
```

5.1.2.7 gap()

```
void gap ( )
```

Function used for debugging, it prints a line of dashes

5.1.2.8 menu()

Function shows main menu used for library operations

Parameters

1	- library to handle
а	- admin needed for some actions

5.1.2.9 openLibrary()

```
void openLibrary ( \label{library library & $l$} 1 \ )
```

Function which creates library from files @I - library which is modified

26 File Documentation

5.1.2.10 operator+()

friend, operator used to add days to date

5.1.2.11 operator++()

friend, increment operator

5.1.2.12 operator-() [1/2]

friend, operator used to subtract days from date

5.1.2.13 operator-() [2/2]

friend, operator used to subtract date from date

5.1.2.14 operator--()

friend, decrement operator

5.1.2.15 operator<<() [1/3]

Book operator, which displays data of the book

5.1.2.16 operator << () [2/3]

friend, operator used to display date

5.1.2.17 operator << () [3/3]

User operator, which displays data of the user

5.1.2.18 operator>>()

```
std::istream & operator>> (
          std::istream & s,
          date & d )
```

friend, operator used to enter date

5.1.2.19 saveLibrary()

```
void saveLibrary ( {\tt const\ library\ \&\ \it l\ )}
```

Function which saves library class to external txt file

5.1.2.20 welcome()

```
void welcome ( )
```

Function which shows a big text: "Library System"

5.2 functions.h File Reference

Library system.

```
#include <iostream>
#include <fstream>
#include <sstream>
#include <string>
#include <vector>
#include <list>
#include <cstdlib>
```

28 File Documentation

Classes

- · class error
- · class date
- · class book
- class user
- class library
- · class admin

Functions

- std::ostream & operator<< (std::ostream &s, const book &bookToDisplay)
- std::ostream & operator<< (std::ostream &s, const user &userToDisplay)
- · void welcome ()
- void menu (library &I, admin &a)
- void displayBookMenu (library &I)
- void displayUserMenu (library &I)
- void adminPanel (library &I, admin &a)
- void aboutApp ()
- void saveLibrary (const library &I)
- void borrowReturnMenu (library &I)
- void openLibrary (library &l)
- date currentDate ()
- void gap ()

5.2.1 Detailed Description

Library system.

Author

Maciej Jarnot (mj300741@student.polsl.pl)

Version

v2

Date

07.03.2023

5.2.2 Function Documentation

5.2.2.1 aboutApp()

void aboutApp ()

A little description what the program does

5.2.2.2 adminPanel()

Displays admin panel used for editing library, books or users

5.2.2.3 borrowReturnMenu()

```
void borrowReturnMenu ( library \ \& \ I \ )
```

Functon which allows to borrow and to return books to library

5.2.2.4 currentDate()

```
date currentDate ( )
```

Function which returns current date

5.2.2.5 displayBookMenu()

```
void displayBookMenu ( library \ \& \ I \ )
```

Function shows menu to find some book

Parameters

```
I - library to handle
```

5.2.2.6 displayUserMenu()

```
void displayUserMenu ( \label{library library librar
```

Function shows menu which helps to find a user

Parameters

```
/ - library to handle
```

30 File Documentation

5.2.2.7 gap()

```
void gap ( )
```

Function used for debugging, it prints a line of dashes

5.2.2.8 menu()

Function shows main menu used for library operations

Parameters

1	- library to handle
а	- admin needed for some actions

5.2.2.9 openLibrary()

```
void openLibrary ( library \ \& \ I \ )
```

Function which creates library from files @I - library which is modified

5.2.2.10 operator <<() [1/2]

Book operator, which displays data of the book

5.2.2.11 operator<<() [2/2]

```
std::ostream & operator<< (
          std::ostream & s,
          const user & userToDisplay )</pre>
```

User operator, which displays data of the user

5.2.2.12 saveLibrary()

```
void saveLibrary ( {\tt const\ library\ \&\ \it l\ )}
```

Function which saves library class to external txt file

5.3 functions.h

5.2.2.13 welcome()

```
void welcome ( )
```

Function which shows a big text: "Library System"

5.3 functions.h

Go to the documentation of this file.

```
10 #pragma once
11
12 #ifndef FUNCTIONS_H
13 #define FUNCTIONS_H
15 #include <iostream>
16 #include <fstream>
17 #include <sstream>
18 #include <string>
19 #include <vector>
20 #include <list>
21 #include <cstdlib>
2.2
23 class date;
24 class error;
25 class book;
26 class user;
27 class library;
28 class admin;
29
32 class error
33 {
34 public:
35
       std::string errorText;
39
       error();
       error(std::string m) : errorText(m){};
43
44 };
49 class date
50 {
51
       int day;
52
       int month;
53
       int year;
55 public:
       date();
62
68
       date(int d, int m, int y) : day(d), month(m), year(y)
69
           if (!isValid())
70
71
           {
72
               throw error("Invalid date");
73
74
       } ;
7.5
78
       ~date(){}; //destructor
79
       int displayDay();
86
       int displayMonth();
87
90
       int displayYear();
91
94
       void display();
98
       bool isLeapYear();
99
102
        bool isValid();
103
106
        bool isPast();
107
110
        bool isFuture();
111
114
        bool isToday();
115
118
        friend date &operator++(date &d);
122
        friend date &operator--(date &d);
123
```

32 File Documentation

```
126
        friend std::ostream &operator (std::ostream &s, const date &d);
127
130
        friend std::istream &operator»(std::istream &s, date &d);
131
134
        friend date & operator + (date &d, int days);
135
138
        friend date &operator-(date &d, int days);
139
142
        friend int operator-(date &d1, date &d2);
143
144 };
145
148 class book
149 {
150
         std::string title;
151
        std::string authorName;
152
        std::string authorSurname;
153
        bool borrowed;
        long int borrowedBy;
154
155
        static long int ID;
156
        long int bookID;
157
        date borrowedDate;
158
        bool expired;
160 public:
166
        book();
167
173
        book(std::string t, std::string an, std::string asn);
174
        // void display();
175
178
        book &borrow(user &u);
179
182
        book &returnBook (user &u);
183
185
        bool isExpired(int days);
186
        friend std::ostream &operator (std::ostream &s, const book &book ToDisplay);
187
        friend void saveLibrary(const library &1);
friend void openLibrary(library &1);
188
189
190
        friend class user;
191
         friend class library;
192
         friend class admin;
193
         friend void borrowReturnMenu(library &1);
194 };
195 // long int book::ID = 0;
196
199 std::ostream &operator (std::ostream &s, const book &bookToDisplay);
200
203 class user
204 {
205
        std::string name;
206
        std::string lastName;
207
        static long int ID;
208
        long int userID;
209
                                // std::list <book*> borrowedBooks; /**< List of borrowed books pointers by
      user*/
210 public:
215
        user();
216
221
        user(std::string nam, std::string lastNam);
222
225
        virtual void userCounter():
226
229
        void showUserWithID();
230
231
        friend std::ostream &operator«(std::ostream &s, const user &userToDisplay);
232
        friend void saveLibrary(const library &1);
233
         friend void openLibrary(library &1);
234
        friend class book:
235
        friend class library;
236
        friend class admin;
237 };
238
241 std::ostream &operator (std::ostream &s, const user &userToDisplay);
242
245 class library
246 {
247
        std::string libraryName;
248
         std::string cityName;
249
        std::vector<user> libraryUser;
        std::vector<book> libraryBook;
250
        static long int numOfBooks;
static long int numOfUsers;
251
252
253
         int lengthOfBorrow;
255 public:
261
        library();
2.62
265
        void libraryInfo();
```

```
266
269
        void addBook();
270
276
        void addBook(std::string t, std::string an, std::string asn);
2.77
280
       void showAllBooks();
281
284
        void addUser();
285
290
        void addUser(std::string nam, std::string lastNam);
291
294
       void showAllUsers();
295
299
        void showBook(long int bID);
300
304
       void showUser(long int uID);
305
        void searchBook(int option, std::string searchString = "", std::string searchString2 = "");
311
312
318
        void searchUser(int option, std::string searchString = "", std::string searchString2 = "");
319
320
        friend void saveLibrary(const library &1);
321
        friend void openLibrary(library &1);
322
        friend class admin:
323
        friend void borrowReturnMenu(library &1);
324 };
325
326 class admin : public user
327 {
328
        std::string username;
329
        std::string password;
331 public:
338
339
344
       bool login(std::string &login, std::string &psw);
345
350
       void editBook(library &l, long int bID);
351
356
        void editUser(library &1, long int uID);
357
       // wprowadzic do 2 funkcji powyzej ify (czy ksiazka i user istnieje)
358
        void editLibrary(library &1);
362
363 };
364
367 void welcome();
368
373 void menu(library &1, admin &a);
374
378 void displayBookMenu(library &1);
379
383 void displayUserMenu(library &1);
384
387 void adminPanel(library &1, admin &a);
388
391 void aboutApp();
392
395 void saveLibrary(const library &1);
396
399 void borrowReturnMenu(library &1);
400
404 void openLibrary(library &1);
405
408 date currentDate();
412 void gap();
413
414 #endif // !FUNCTIONS_H
```

5.4 library-system.cpp File Reference

```
Library system.
```

```
#include "functions.h"
```

Functions

• int main ()

34 File Documentation

5.4.1 Detailed Description

```
Author

Maciej Jarnot ( mj300741@student.polsl.pl)

Version

v2

Date

07.03.2023
```

Index

\sim date	isPast, 13
date, 12	isToday, 13
	isValid, 14
aboutApp	operator<<, 15
functions.cpp, 24	operator>>, 15
functions.h, 28	operator+, 14
addBook	operator++, 14
library, 17	operator-, 14
addUser	operator, 14
library, 17	display
admin, 7	date, 13
admin, 7	displayBookMenu
editBook, 7	functions.cpp, 24
editLibrary, 8	functions.h, 29
editUser, 8	displayDay
login, 8	date, 13
adminPanel	displayMonth
functions.cpp, 24	date, 13
functions.h, 28	displayUserMenu
	functions.cpp, 25
book, 9	functions.h, 29
book, 9	displayYear
borrow, 10	date, 13
borrowReturnMenu, 10	date, 10
isExpired, 10	editBook
openLibrary, 10	admin, 7
operator<<, 11	editLibrary
returnBook, 10	admin, 8
saveLibrary, 11	editUser
borrow	admin, 8
book, 10	error, 15
borrowReturnMenu	error, 16
book, 10	
functions.cpp, 24	functions.cpp, 23
functions.h, 29	aboutApp, 24
library, 20	adminPanel, 24
•	borrowReturnMenu, 24
currentDate	currentDate, 24
functions.cpp, 24	displayBookMenu, 24
functions.h, 29	displayUserMenu, 25
	gap, 25
date, 11	menu, 25
\sim date, 12	openLibrary, 25
date, 12	operator<<, 26, 27
display, 13	operator>>, 27
displayDay, 13	operator+, 25
displayMonth, 13	operator++, 26
displayYear, 13	operator-, 26
isFuture, 13	operator, 26
isLeapYear, 13	saveLibrary, 27
	Javolibiai y, Z1

36 INDEX

welcome, 27	functions.h, 30
functions.h, 27	library, <mark>20</mark>
aboutApp, 28	user, 22
adminPanel, 28	operator<<
borrowReturnMenu, 29	book, 11
currentDate, 29	date, 15
displayBookMenu, 29	functions.cpp, 26, 27
displayUserMenu, 29	functions.h, 30
gap, 29	user, 22
menu, 30	operator>>
openLibrary, 30	date, 15
operator<<, 30	functions.cpp, 27
saveLibrary, 30	operator+
-	•
welcome, 30	date, 14
gan	functions.cpp, 25
gap functions.cpp, 25	operator++
• •	date, 14
functions.h, 29	functions.cpp, 26
isExpired	operator-
book, 10	date, 14
	functions.cpp, 26
isFuture	operator
date, 13	date, 14
isLeapYear	functions.cpp, 26
date, 13	
isPast	returnBook
date, 13	book, 10
isToday	
date, 13	saveLibrary
isValid	book, 11
date, 14	functions.cpp, 27
	functions.h, 30
library, 16	library, <mark>20</mark>
addBook, 17	user, 22
addUser, 17	searchBook
borrowReturnMenu, 20	library, 18
library, 17	searchUser
libraryInfo, 18	library, 18
openLibrary, 20	showAllBooks
saveLibrary, 20	library, 19
searchBook, 18	showAllUsers
searchUser, 18	library, 19
showAllBooks, 19	showBook
showAllUsers, 19	
showBook, 19	library, 19 showUser
showUser, 19	
library-system.cpp, 33	library, 19
	showUserWithID
libraryInfo	user, 21
library, 18	
login	user, 20
admin, 8	openLibrary, 22
manu	operator<<, 22
menu	saveLibrary, 22
functions.cpp, 25	showUserWithID, 21
functions.h, 30	user, 21
an and thorough	userCounter, 21
openLibrary	userCounter
book, 10	user, 21
functions.cpp, 25	

INDEX 37

welcome

functions.cpp, 27 functions.h, 30