

# Big books

Documentation and Contribution

# Introduction

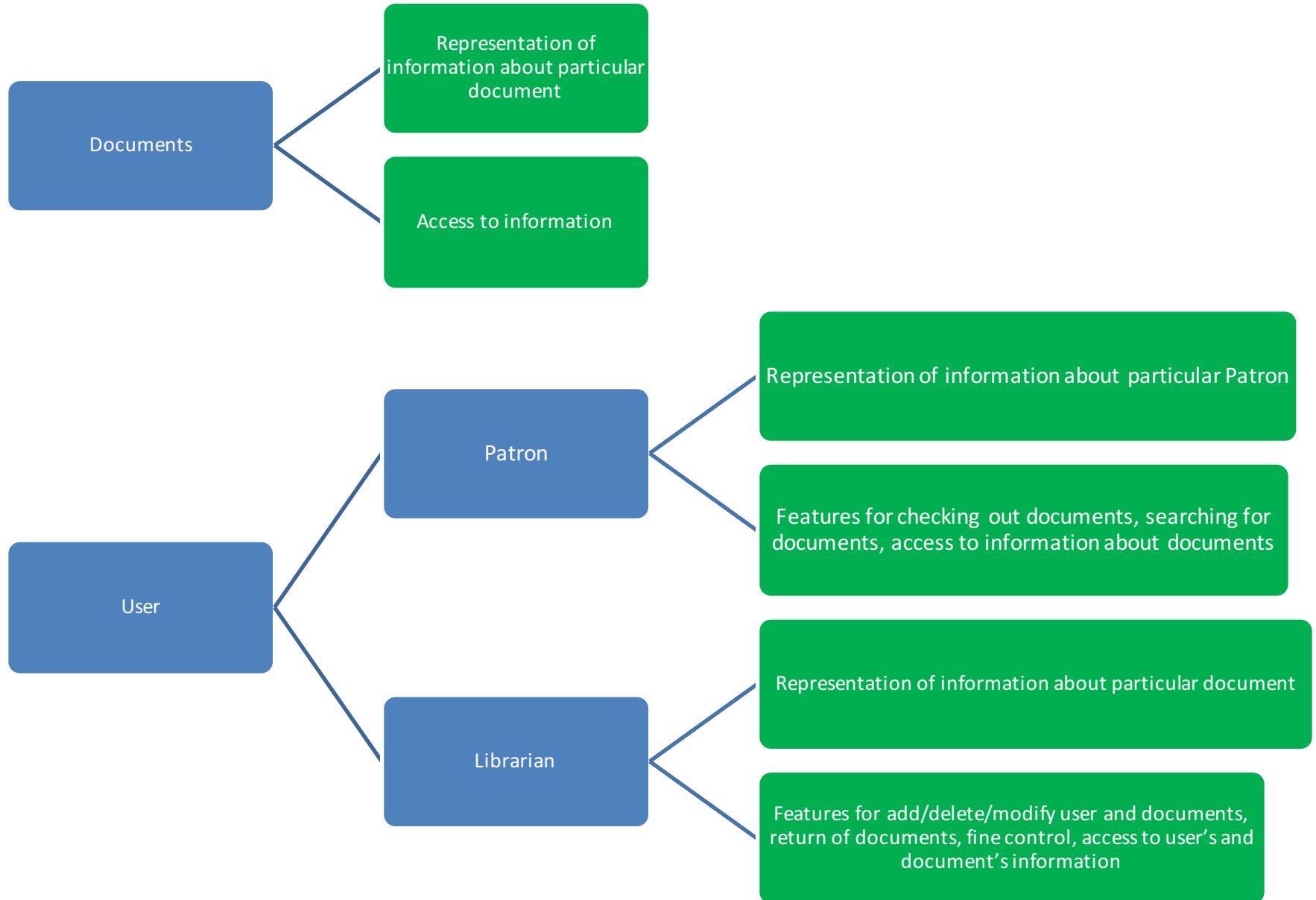
Our system includes in 3 segments

- Database interaction(Oleg Andriyanchenko)
- Friendly representation of data, understandable interface of all system's part(Artur Akhmetshin)
- GUI, interface for users(Denis Pimenov)

# Friendly representation of data, understandable interface of all system's part

- This part of system gives GUI programmer logical and corresponding to the system requirements representation of data.
- It uses data base interface, provided by data base interaction programmer. And represent it in understandable and usable way. Also it edits and deletes information in data base, by data base interaction interface sure.
- All information about data base is hidden for GUI programmer, since all corresponding features are available there.

# Structure of system interface classes



# Documents

- Class includes different features that take data from data base and after that give opportunity to interact with all types of documents
- name;  
type; // Book, JA or AV material  
docID; //ID of proper document  
author;  
copies;  
reference;  
bestseller;  
cost;  
publisher;  
edition;  
year;  
counter;

# Librarian

Class implements Librarian's methods, gives abstraction to GUI developer, that allows not to user data base straight, just use implemented set of methods.

- add/modify/delete users/documents
- public void outstandingRequest
- Auto notifications of users
- public int checkOut/Documents doc)
- public Patron getPatronInfo
- public ResultSet checkedOut
- public boolean payFine
- public boolean returnDoc
- public boolean deleteUser(int userID)
- public ResultSet copiesOfDocument(int docID)
- etc.

# Patron

Class provides feature to interact with Patron information and to action in library. It includes following features








- `public IntAndInt checkFineTest`
- `public int checkFine()`
- `public int [] getWaitingList`
- `public Documents[] bookedDocuments`
- `public ResultSet checkedOut(int userID)`
- `public IntAndString renew`
- `public IntAndString checkOut`
- `public String getDateToReturn`
- `public Documents [] getNotifications`
- etc.

# Database structure

- The database we choose is SQLite. It is easy to interact with and it is quite powerful. To interact with it we use JDBC driver.
- The database consists of 4 tables:
  - Users (stores information about users)
  - Documents (stores information about documents)
  - Copies (stores information about every copy of the document)
  - Booking (represents a queue for people who wait for the certain book)
- To interact with database there exists FcukBase.java class. It allows to add, change and delete information from the database.
- Information about methods is stored in FcukBaseInterface.java. It describes the main methods of our java class



# Users

	 id	 name	 phoneNumber	 address	 status	 password	 fine
1	1	Steve Wozniak	89227654321	New York	Librarian	qwerty	0







- ID: identification number of the user
- (Name, Phone Number, Address): personal information of the user
- Status: information about status (Student, Professor, TA, etc)
- Password: password
- Fine: current fine

# Documents

	id	name	author	type	publisher	year	edition	counter	cost	reference	bestseller
1	1	Introduc...	Thomas H...	document	MIT Press	2009	Third Edition	4	100	F	F





- Id: identification number of the document
- (Name, Author, Publisher, Year, Edition): information about the document
- Type: type of the document (AV, book, article, etc)
- Counter: the # of documents in the library
- Cost: cost of the document
- (Reference, bestseller): boolean value

# Copies

	 copyID	 commonID	 availability	 userID	 date	 renew
1	1	1	T	0	<null>	F
2	2	1	F	1	2018-05-26	T
3	3	1	T	0	<null>	F

- CopyID: identification number of the copy
- CommonID: identification number of the document
- Availability: boolean value (“T” for available, “F” for not available)
- UserID: identification number of the user who took the copy (default: 0)
- Date: date of checking out of the certain copy
- Renew: Boolean value (“T” for was once renewed, “F” for wasn’t renewed)

# Booking

 bookID	 userID	 priority	 date
--	--	---	--

- BookID: identification number of the booked copy
- UserID: identification number of the user
- Priority: priority number according to the type of the user
- Date: date of latest possibility to check out

# FcukBase.java

```
public class FcukBase implements FcukBaseInterface{
    private static Connection connection = null;
    private static String url = "jdbc:sqlite:databaseTest.sqlite";

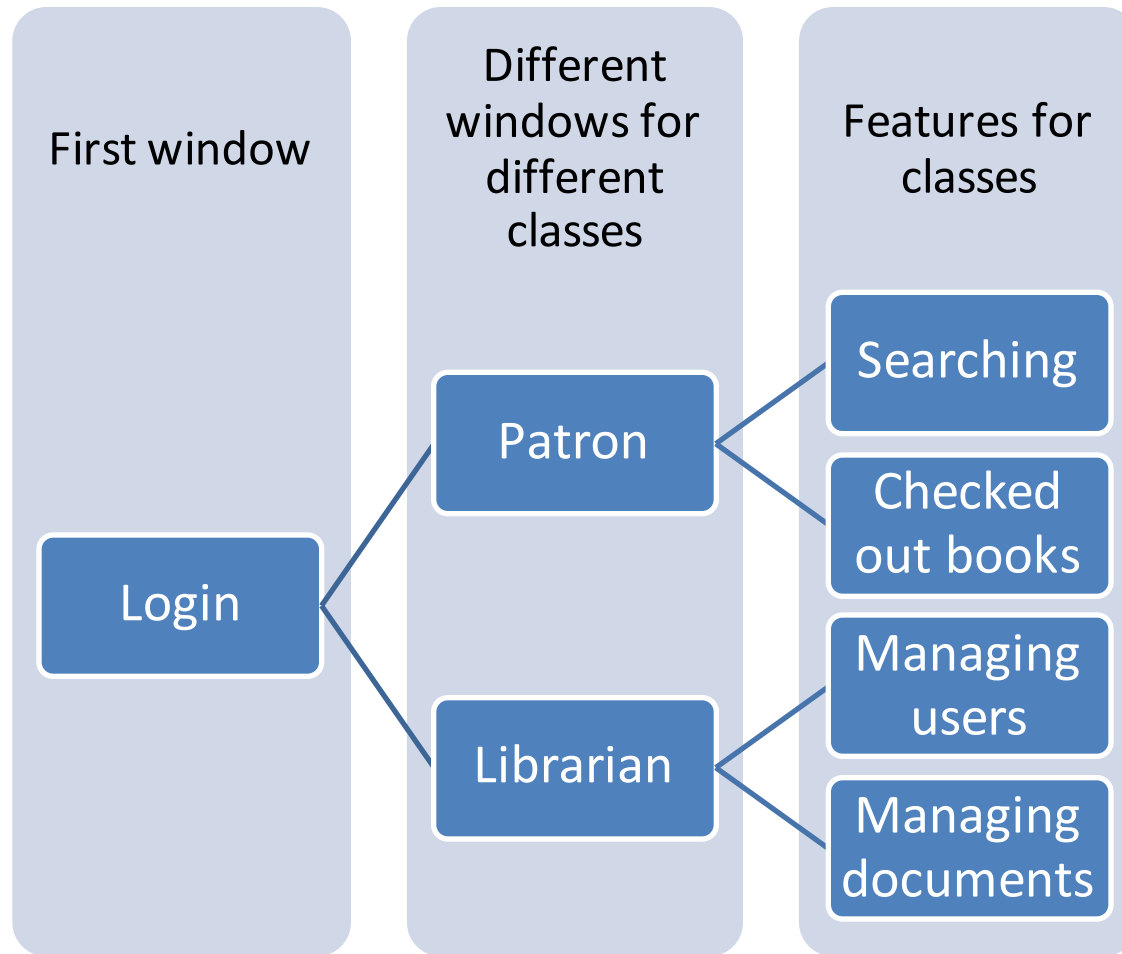
    public FcukBase() {
        if (connection == null) {
            try {
                connection = DriverManager.getConnection(url);
            } catch (SQLException e) {
                e.printStackTrace();
            }
        }
    }
}
```

- JDBC driver is used to connect to the database. In FcukBase class queries are sent to database to get needed information or to write new information.

# GUI

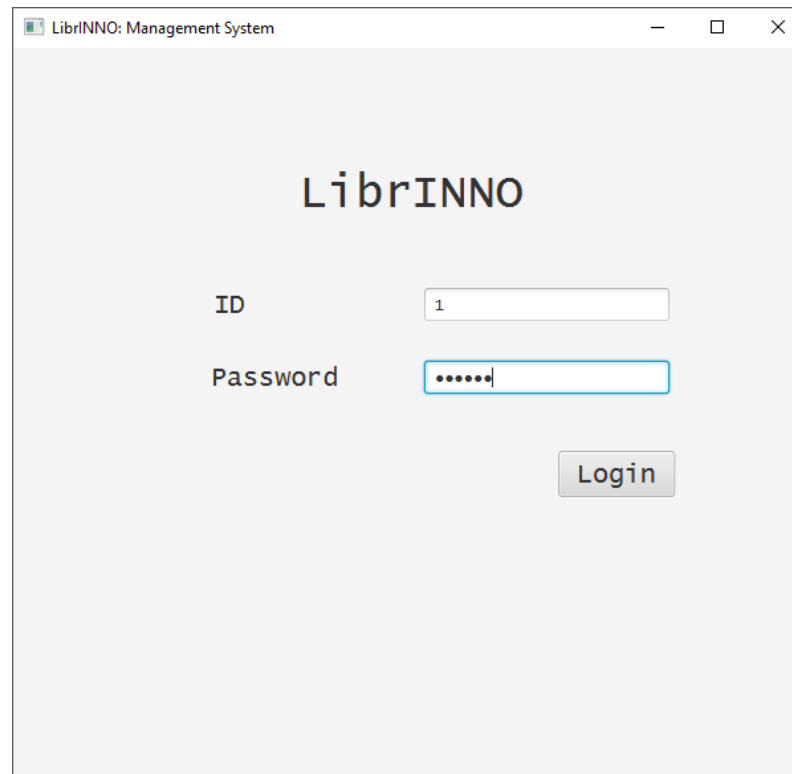
- Made with JavaFX
- Using Scene Builder

# GUI steps



# Login

- Expecting user ID and password



The screenshot shows a web browser window titled "LibrINNO: Management System". The page has a light gray background. In the center, the text "LibrINNO" is displayed in a large, dark font. Below this, there are two input fields. The first is labeled "ID" and contains the number "1". The second is labeled "Password" and contains six dots, indicating a masked password. To the right of the password field is a "Login" button. The window has standard minimize, maximize, and close buttons in the top right corner.

LibrINNO: Management System

LibrINNO

ID

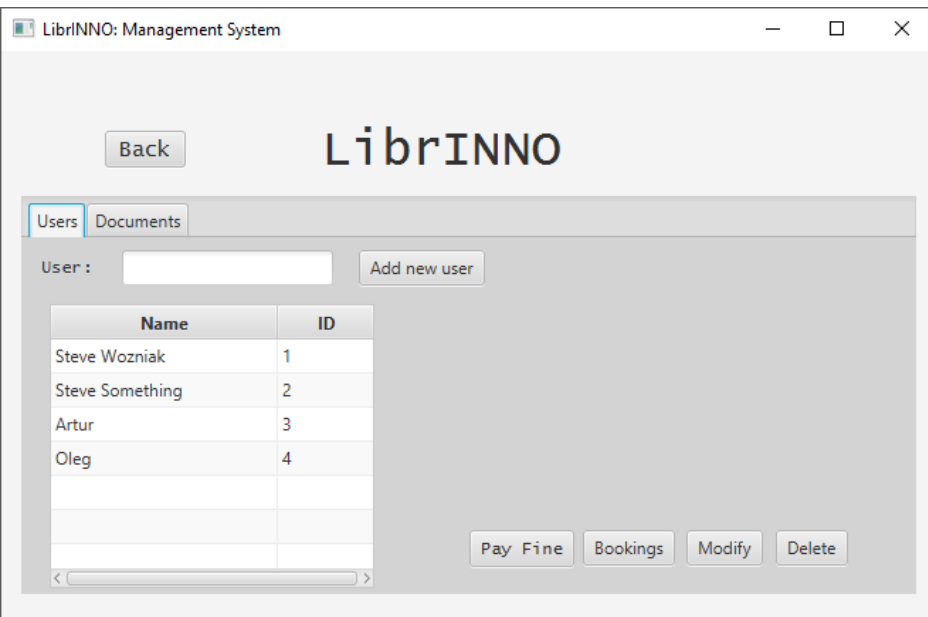
Password

Login



# Librarian

- Managing users
- Information on selecting from the list



LibrINNO: Management System

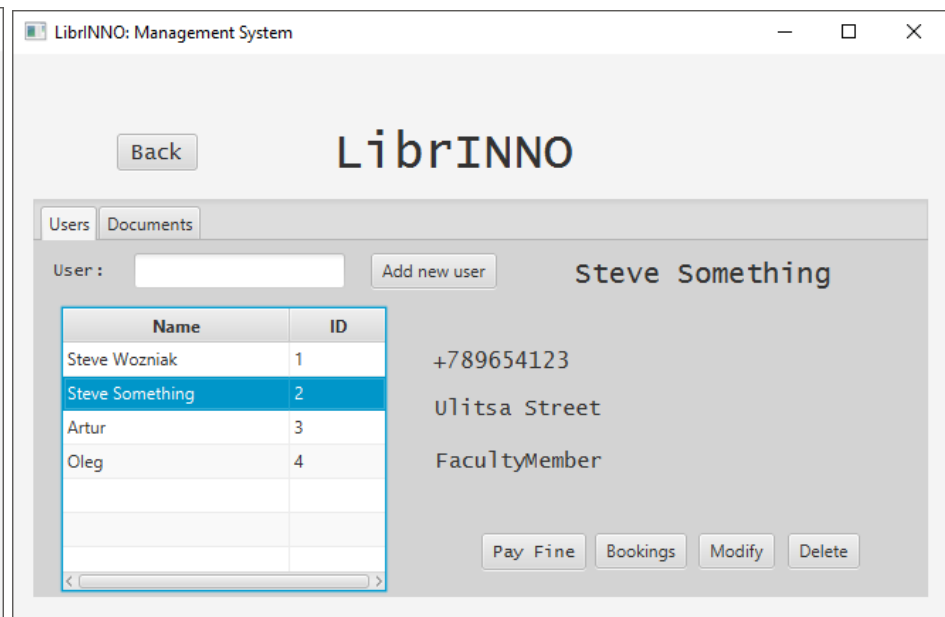
Back LibrINNO

Users Documents

User :  Add new user

Name	ID
Steve Wozniak	1
Steve Something	2
Artur	3
Oleg	4

Pay Fine Bookings Modify Delete



LibrINNO: Management System

Back LibrINNO

Users Documents

User :  Add new user **Steve Something**

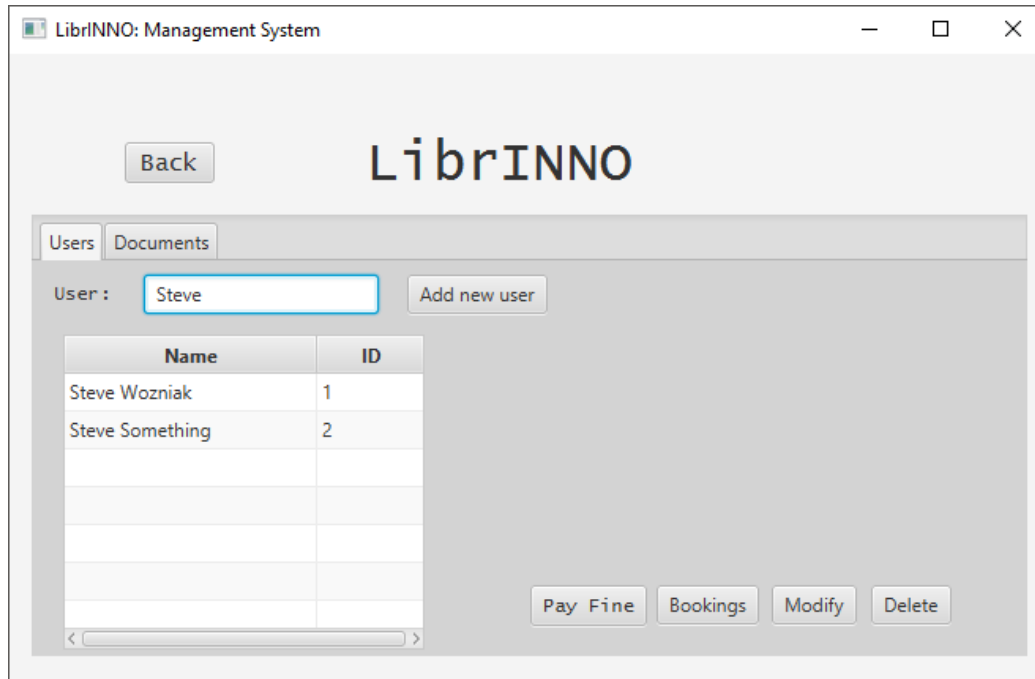
Name	ID
Steve Wozniak	1
Steve Something	2
Artur	3
Oleg	4

+789654123  
Ulitsa Street  
FacultyMember

Pay Fine Bookings Modify Delete

# Librarian

- Searching users by name or ID
- Searching documents by title or author

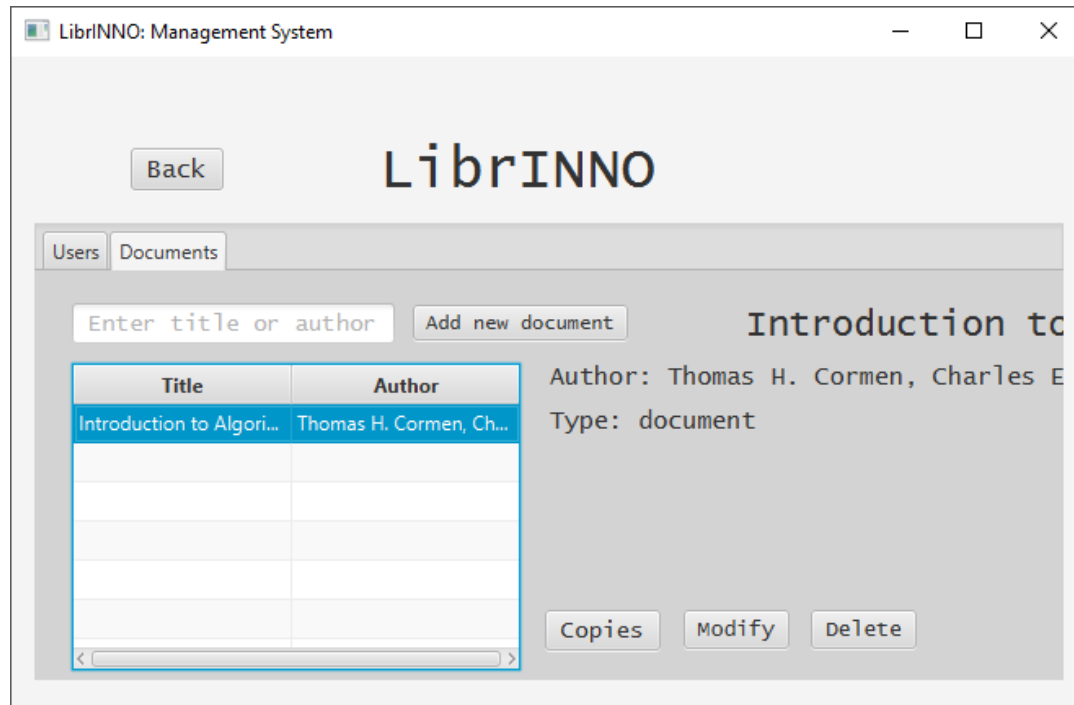


The screenshot shows the LibrINNO Management System interface. At the top, there is a title bar with the text "LibrINNO: Management System". Below the title bar, there is a "Back" button and the "LibrINNO" logo. The interface has two tabs: "Users" and "Documents". The "Users" tab is selected. Below the tabs, there is a search bar labeled "User :" with the text "Steve" entered. To the right of the search bar is an "Add new user" button. Below the search bar is a table with two columns: "Name" and "ID". The table contains two rows of data: "Steve Wozniak" with ID "1" and "Steve Something" with ID "2". At the bottom of the interface, there are four buttons: "Pay Fine", "Bookings", "Modify", and "Delete".

Name	ID
Steve Wozniak	1
Steve Something	2

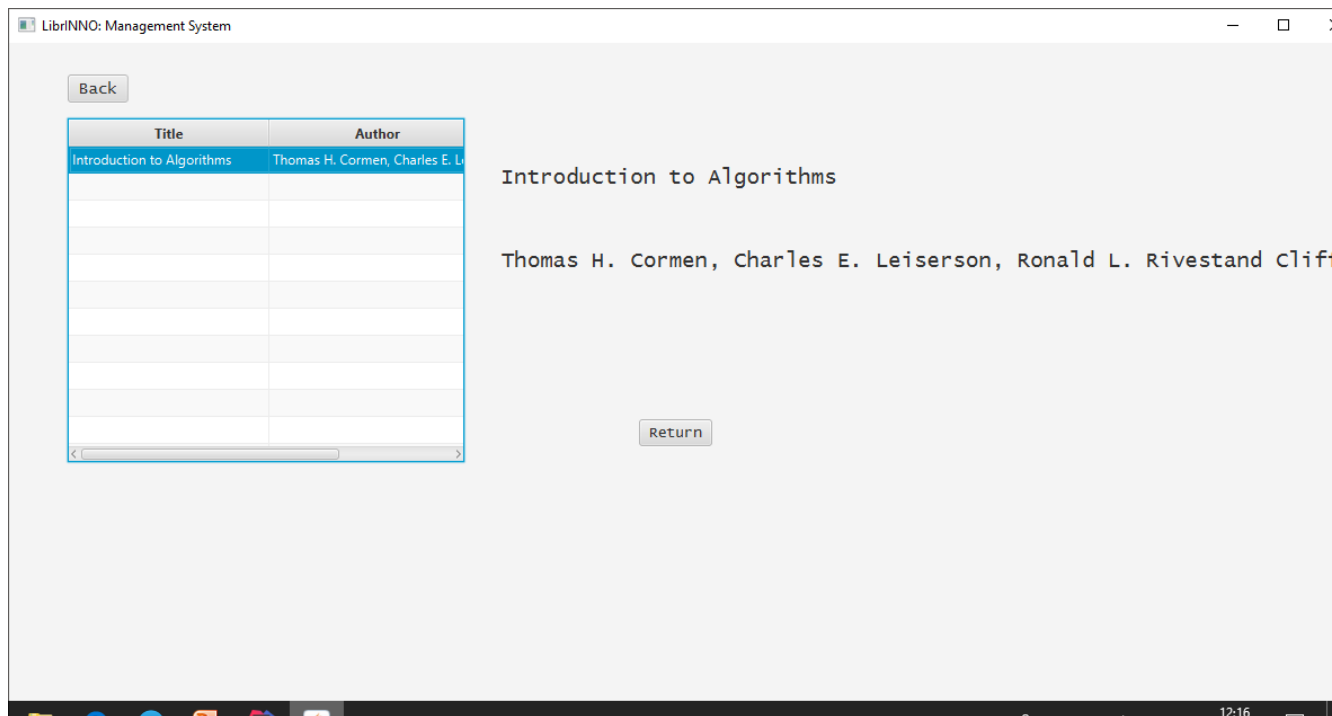
# Librarian

- Managing documents
- Full functional, but developing design



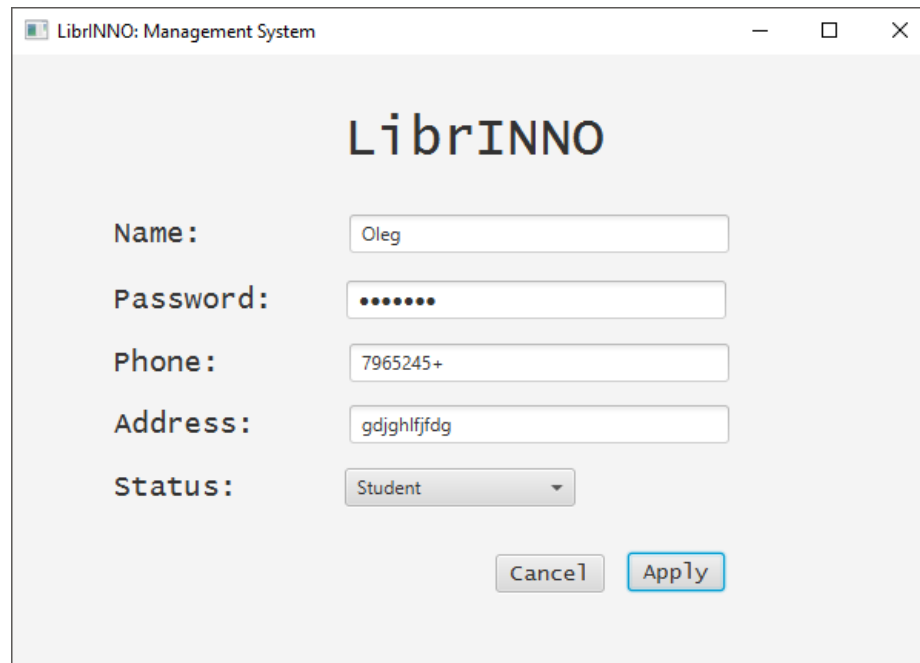
# Librarian

- For particular user you can see checked out documents
- Return only through librarian



# Librarian

- Modify user
- Automatically filled fields
- Empty fields for adding user



The screenshot shows a window titled "LibrINNO: Management System". Inside the window, the text "LibrINNO" is displayed in a large, stylized font. Below this, there are five labeled input fields arranged vertically:

- Name:** A text input field containing the text "Oleg".
- Password:** A text input field containing seven dots, indicating a password.
- Phone:** A text input field containing the text "7965245+".
- Address:** A text input field containing the text "gdjghlfjfdg".
- Status:** A dropdown menu with "Student" selected and a downward arrow on the right.

At the bottom right of the form area, there are two buttons: "Cancel" and "Apply". The "Apply" button is highlighted with a blue border.

# Librarian

- Through librarian you can pay fine
- Press “Pay Fine”, enter amount and press OK

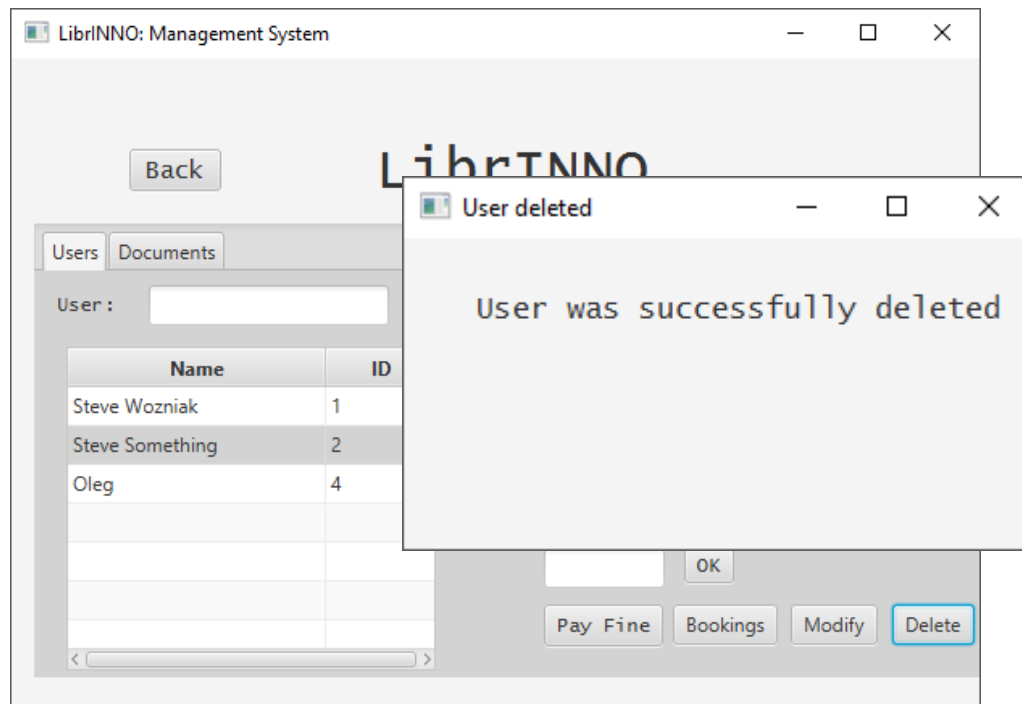
The screenshot shows the 'LibrINNO: Management System' window. At the top, there is a 'Back' button and the title 'LibrINNO'. Below this, there are two tabs: 'Users' and 'Documents'. The 'Users' tab is active, displaying a table of users and a form for user details.

Name	ID
Steve Wozniak	1
Steve Something	2
Artur	3
Oleg	4

Below the table, there is a 'User :' label followed by a text input field. To the right of the input field is an 'Add new user' button. Further right, the name 'Oleg' is displayed. Below the name, there is a text input field containing '7965245+', followed by another text input field containing 'gdjghlfjfdg'. Below these fields, the word 'Student' is displayed. At the bottom right, there is an 'OK' button. Below the 'OK' button, there are four buttons: 'Pay Fine' (highlighted with a blue border), 'Bookings', 'Modify', and 'Delete'.

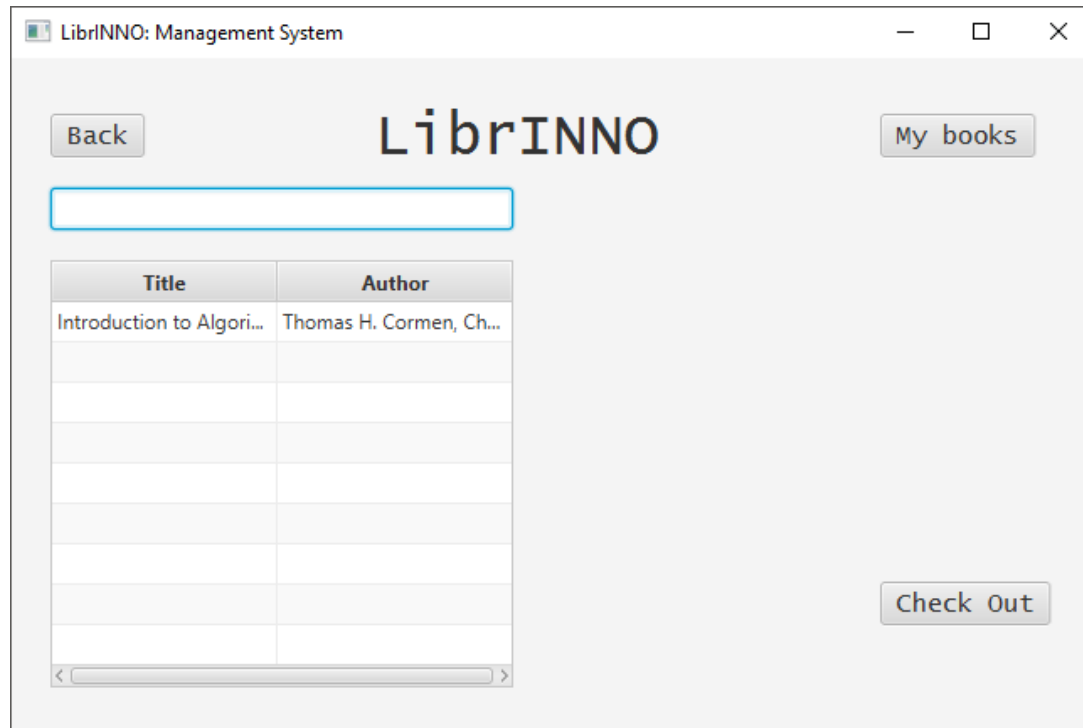
# Librarian

- Deleting user
- Immediately deleted from the list



# Patron

- Searching books





# Patron

- Check out document and informing about date (if it is available now)

The screenshot displays the LibrINNO Management System interface. At the top, the title bar reads "LibrINNO: Management System". The main header area includes a "Back" button, the "LibrINNO" logo, and a "My books" button. Below the header, there is a search bar labeled "Enter title or author". The main content area shows the title "Introduction to Algorithms" and the author "Author: Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein". Below the author information, it says "Type: document". On the left side, there is a table with two columns: "Title" and "Author". The first row of the table contains the text "Introduction to Algori..." and "Thomas H. Cormen, Ch...". Below the table, there is a "Check Out" button. A modal dialog box titled "Checking out document" is open, displaying the message: "This document was successfully checked out for you due to 2018-04-22".

LibrINNO: Management System

Back LibrINNO My books

Enter title or author

Introduction to Algorithms

Author: Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein

Type: document

Title	Author
Introduction to Algori...	Thomas H. Cormen, Ch...

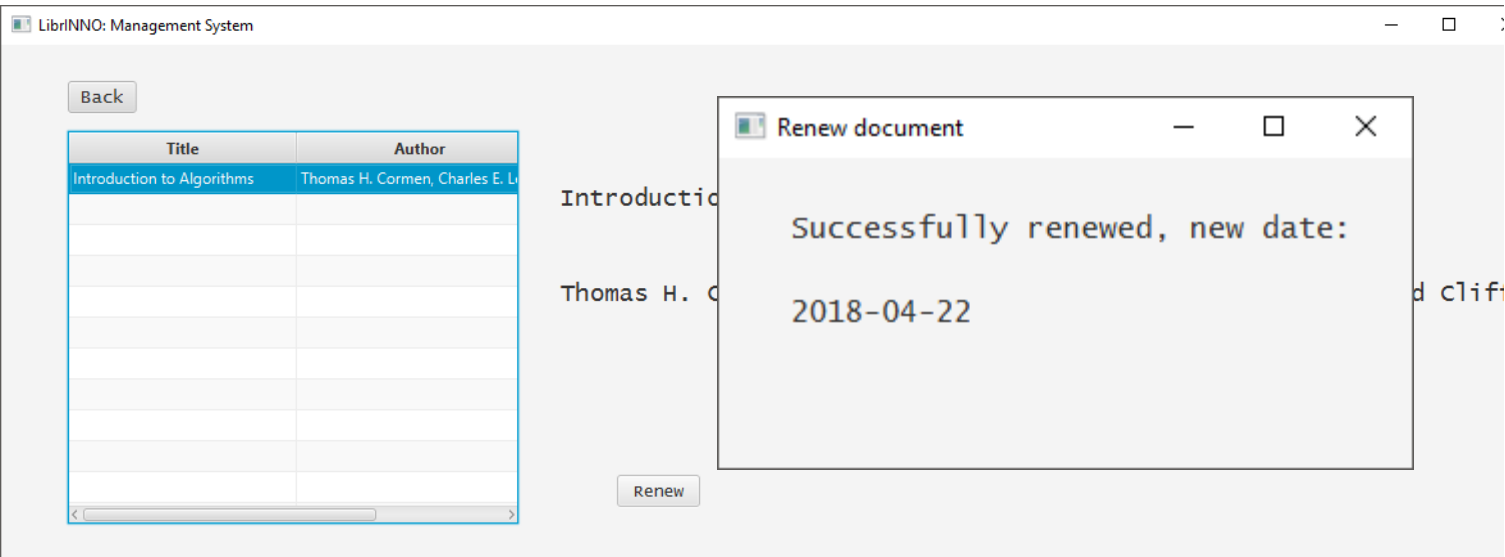
Checking out document

This document was successfully checked out for you due to 2018-04-22

Check Out

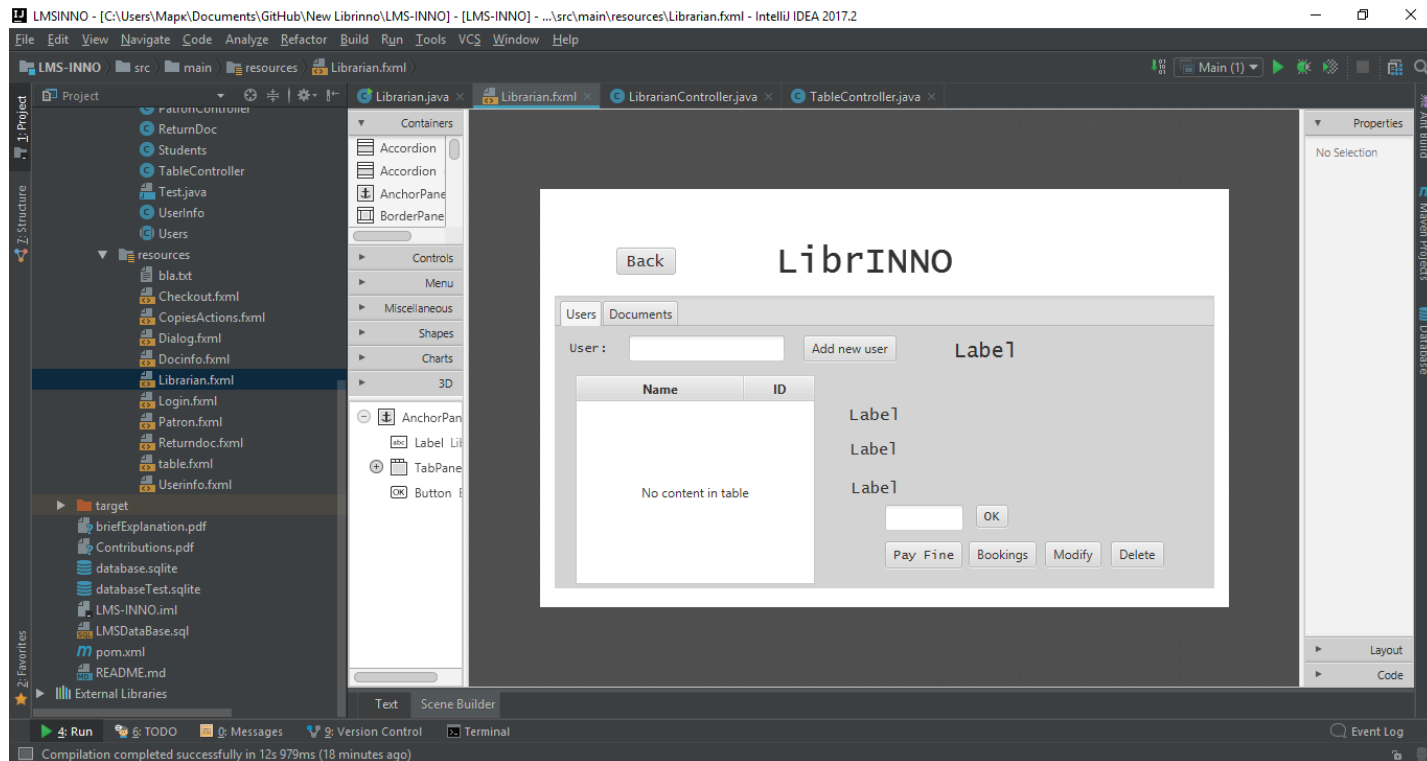
# Patron

- List of checked out books
- Feature to renew selected one

[illegible]

# GUI development

- Working with Scene Builder
- Creating .fxml files for every window



# GUI development

- For each .fxml creating .java controller to interact with elements and actions

