Software Requirements Specification

For

Library Automation system

Version 2.0 approved

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Revision History

Name	Date	Description	Version
Author	15/Nov/2021	Software Requirements Specification Document Initial Release.	1.0
Author	22/Nov/2021	Updated product functions	1.1
Author	13/Dec/2021	Added System Features, External Interface Requirements and Other Nonfunctional Requirements	2.0

Section 1: Introduction

1.1 Purpose

The Software Requirements Specification (SRS) will define and describe the operations, interfaces, performance, and quality assurance requirements of Library Automation System; It also describes the design constraints that are to be considered when the system is to be designed, and other factors necessary to provide a complete and comprehensive description of the requirements for the software.

This SRS will be used by the system development team which is constructing the Library Automation System, User (Customer), Project Manager, Project- Developer, Tester, Document Writer and the end users of the Library Automation System.

1.2 Document Conventions

	Font	Size	Bold
Heading one	Times new roman	22	Yes
Heading two	Times new roman	20	Yes

1.3 Intended Audience and Reading Suggestions

The intended audience of this document would be the project manager, developer, tester, documentation writer and the user of the project.

- Project manager:

  This SRS document is also very important for the project manager to ensure that he/she can estimate the cost easily by referring to the SRS document and that it contains all the information require planning the project.

- Developer:

  The project developer will refer to the SRS document to make sure that they developed exactly what the customer requires.

- Tester:

  The tester will read this SRS document and he will ensure that the requirements are understandable from functionality point of view so that he can test the software and validate it is working.

- Document Writer:
  The document writer is reading the SRS document is to ensure that they understand the document well enough to be able to write the users manuals.

- User (Customer):
  This document is intended to user and customer to make them ensure that this document is well meeting the need of the users.

Brief outline of the document is:

1. Overall description.
2. System Features.
3. Non-Functional Requirements.
4. Design and Implementation Constraints.

1.4 Project Scope

This project ‘s goal is to develop a Library Automation System that provides the users and librarian with many facilities that will help them to deal with this software, The Library Automation System is supposed to have the following features:

- The system provides login facility to the users.
- The system allows users with the option to check their account and change their options like password of the account.
- The system provides the users with online booking, purchase, and borrow books.
- The system allows the users to use system 24 hours a day.
- The system provides librarian with check which users have booked, borrow, and buy the books daily.
- The system allows the Librarian to create the books catalog, add/delete books and maintain the books catalog.
- The librarian can access the history of each user.

1.5 References

https://pdfcoffee.com/library-management-system-srs-pdf-free.html
https://www.studocu.com/in/document/national-institute-of-technology-rourkela/software-engineering/library-management-system-srs/7138104
https://www.startertutorials.com/uml/resources/lms/LMS5.pdf
https://www.slideshare.net/ToseefHasan2/srs-for-library-management-system

Section 2: Overall Description

2.1 Product Perspective

This library management system will be the replacement of paper works that recording books and the information of clients.

This system will make it easy to search for the wanted book and borrow it.

This system will provide book catalogs, writers catalogs to make it easy to find what the client want.

The Librarian can keep the books catalog updated all the time so that clients get the updated information all the time.

2.2 Product Functions

The Online Library System provides online real time information about the books available in the library and the user information. The functions of the system include the system providing different type of services based on the type of users [Users/Librarian].

Users:

- Login.
- Manage account (change password, name… etc.).
- Borrow, buy books.
- Search a book by using its name.
- Read the summary of the books.
- Write feedback.

Librarian:

- Add, delete books.
- Manage category (books categories and author categories).
- Store the dealings of users.
- Store the borrowed books.
- Check for books' places and its price.
- Summaries total number of books borrowed/bought (by users) and total profit for any specified period of time.

System:

- The system will be available 24 hours for all users.
- Help button will be available everywhere to download user manual and check Q&A. For example, if there is a borrowed book and more than one person wants to borrow the same book, in this case priority will be given to the first person who booked the book.

2.3 User Classes and Characteristics:

There are two user level in Library Automation system users and Librarian
Characteristics of user classes:

- **Librarian who will manage the system and responsible for adding, removing books to the system.**
- **Users uses the system to buy or borrow books.**

User and librarian are assumed to have basic knowledge of the computers and Internet browsing.

2.4 Operating Environment:

Hardware:

Processor: intel core i3
Hard drive: should be minimum 5 GB of free space
Ram: 512MB

Software:

Programming language: C#
Operating system: windows 7 or later

2.5 Design and Implementation Constraints:

System will need a minimum memory of 512MB. But it is recommended to have a memory of 1GB. The information of all the users must be stored in a database that is accessible by the Library System, the users must have their correct usernames and passwords to enter into the Library System.

2.6 User Documentation:

The User Manual describes the use of the system to Librarian and users. user will be able to download user manual from website's help section. help button will be available everywhere.

2.7 Assumptions and Dependencies:

The users have sufficient knowledge of computers. The computer should have Internet connection and Internet server capabilities. The users know the English language, as the user interface will be provided in English**.**

Section 3: External Interface Requirements

3.1 User Interfaces:

The following interfaces is the Customer's:

3.1.1 Login Page:

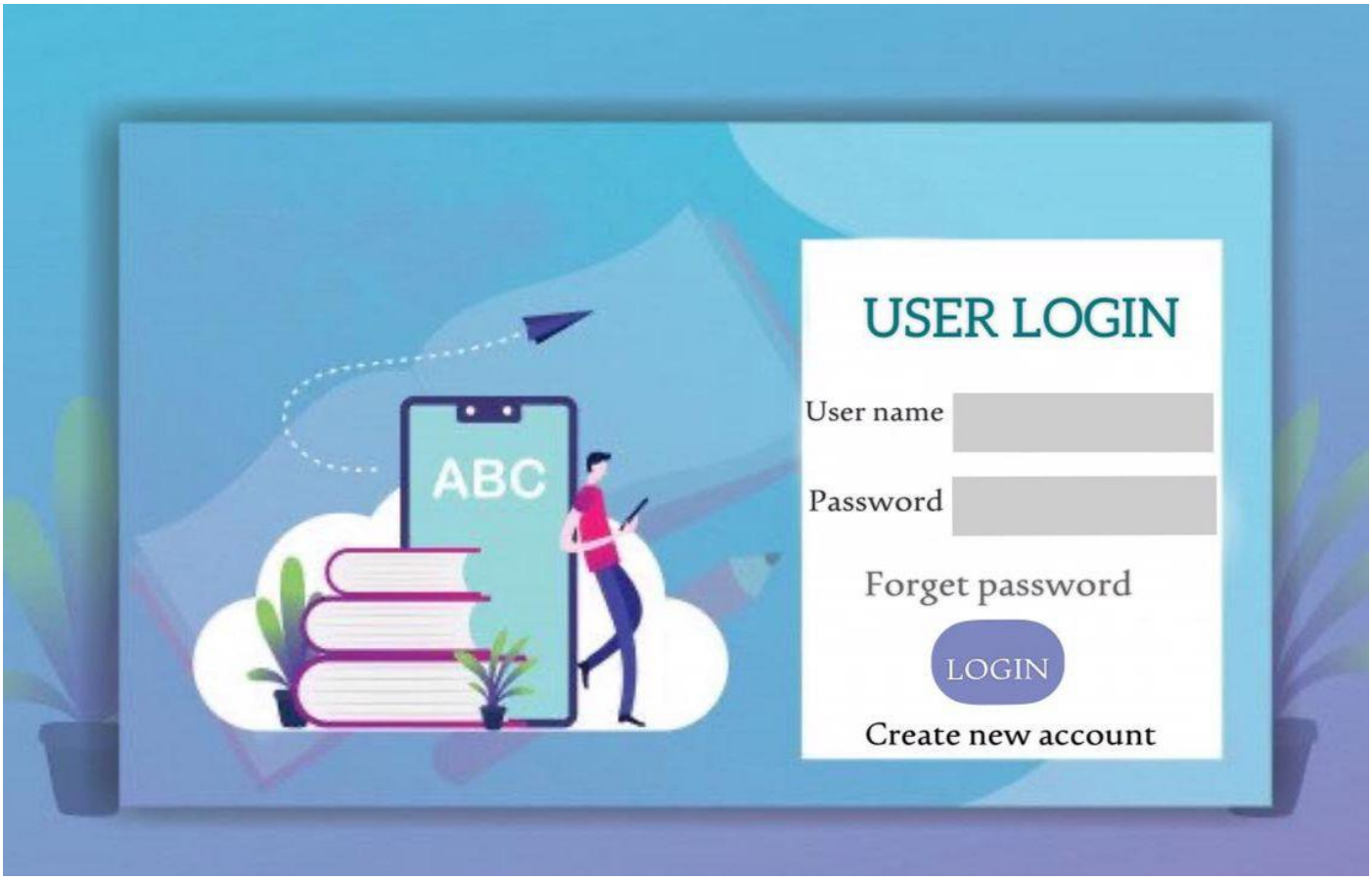

Figure 1 Customer login

3.1.2 Create new account Page

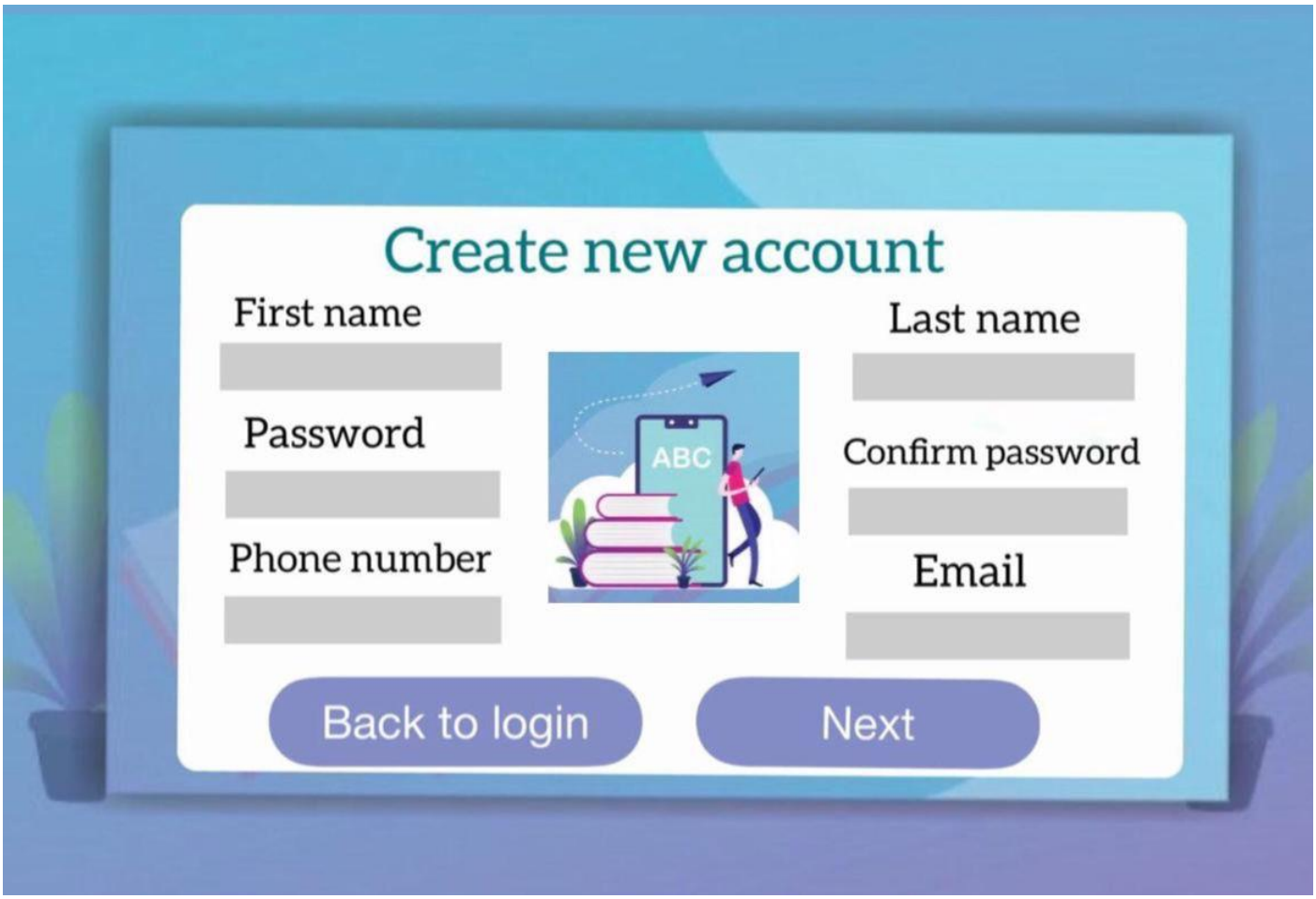

Figure2 : Create new account

3.1.3 Create new password Page:

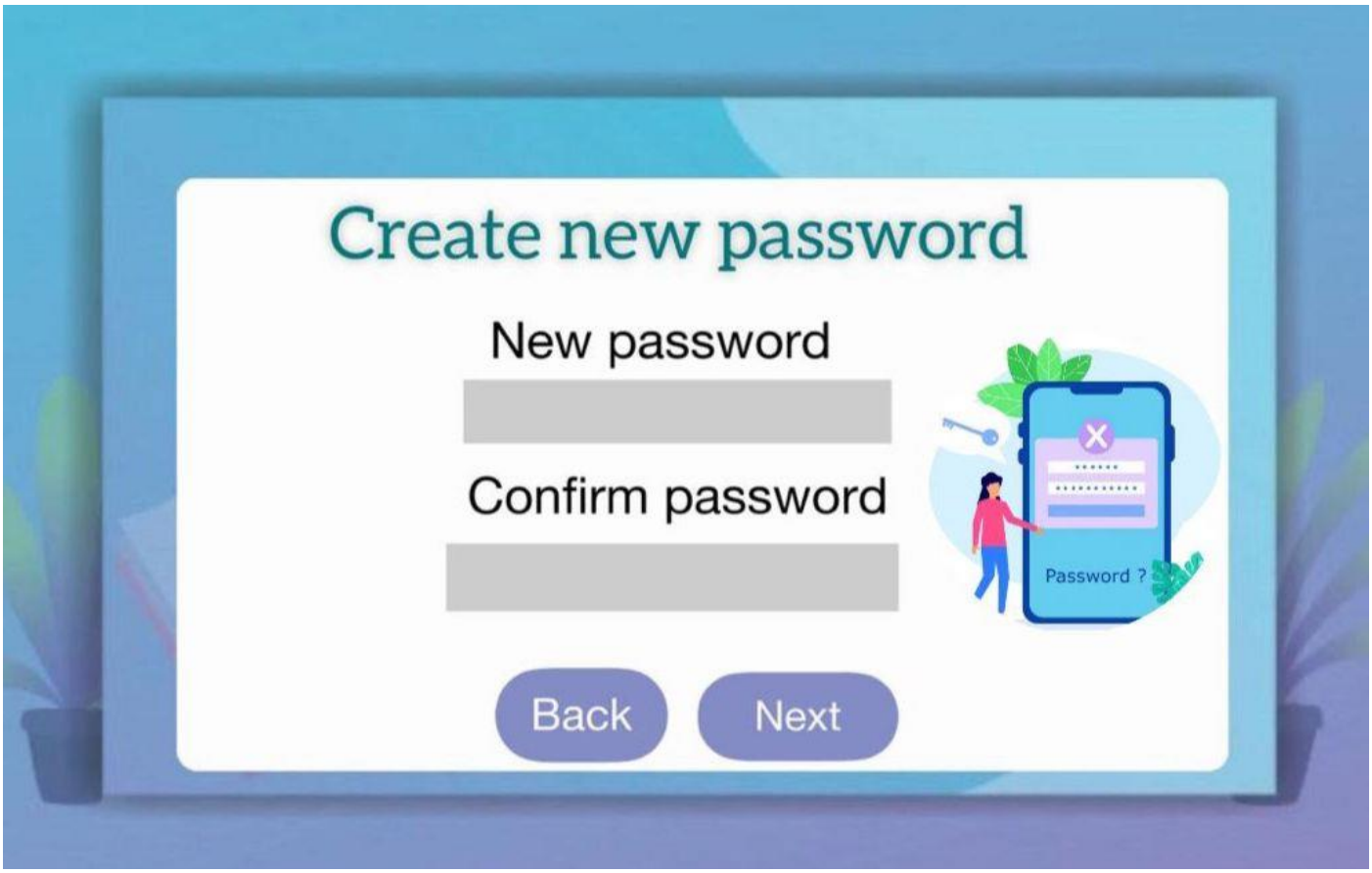

Figure 3 : Create new password Page

3.1.4 Forgot password Page:

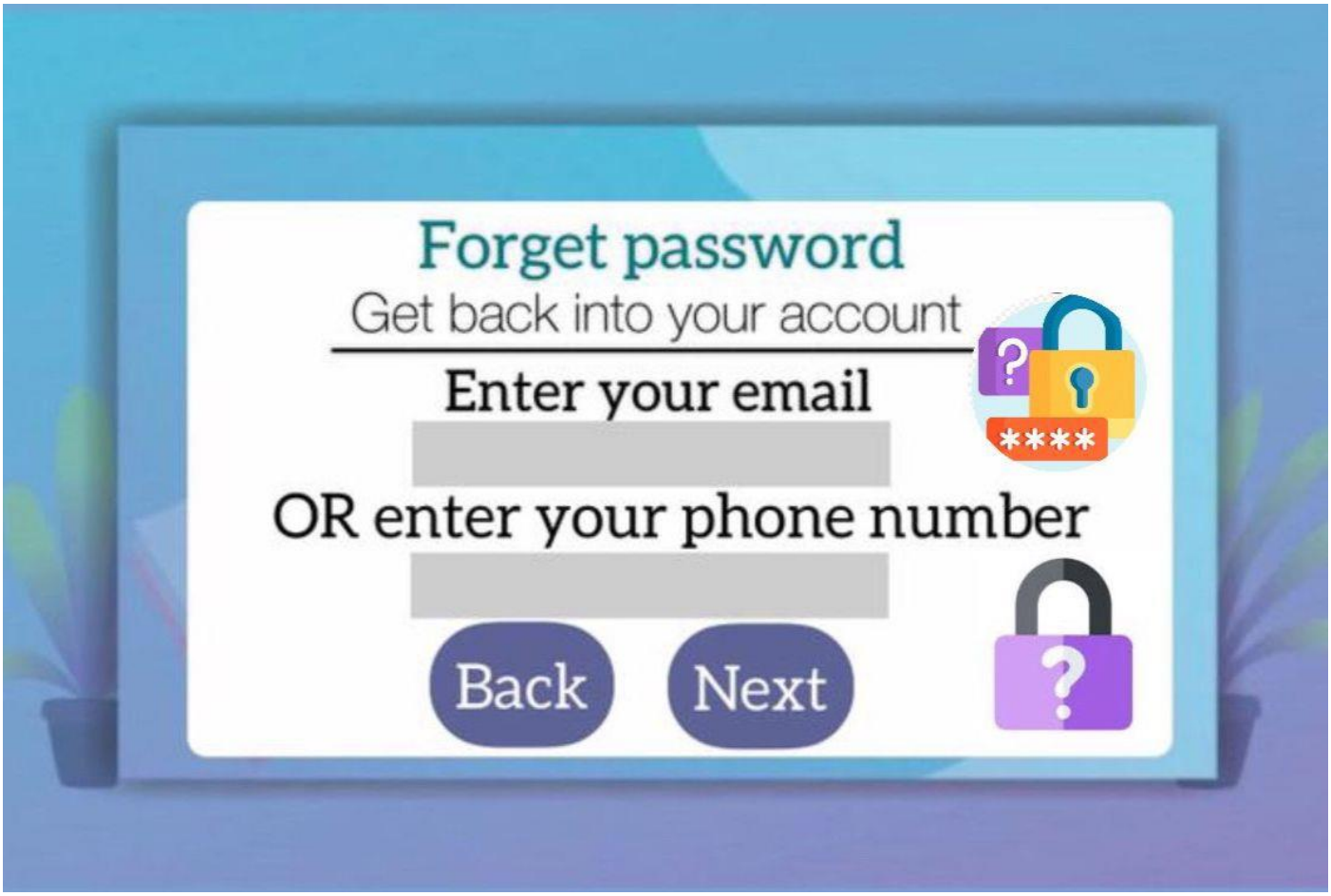

Figure 4 : Forgot password page

3.1.5 Confirm code Page:

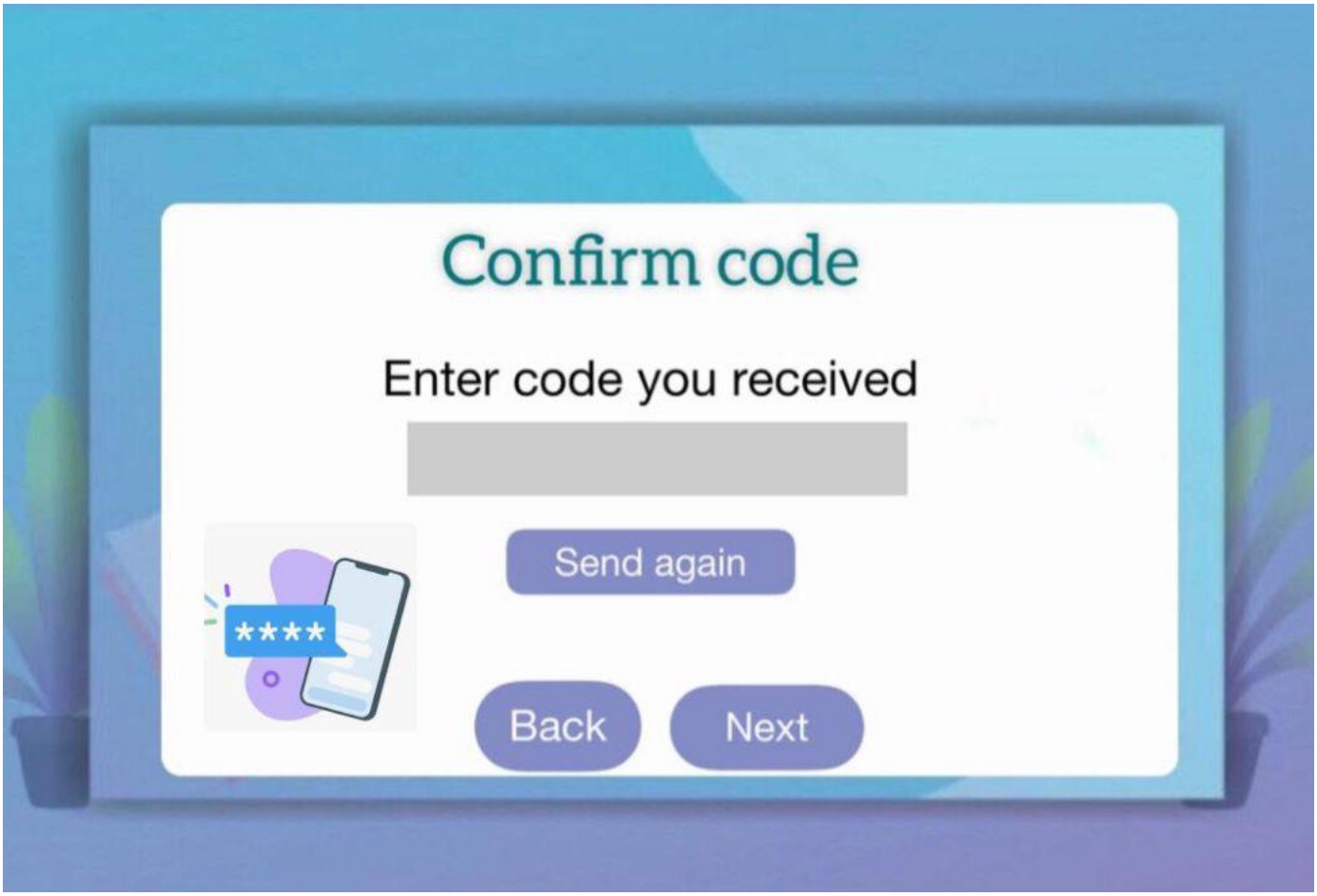

Figure 5 : Confirm code

3.1.6 Main Page:

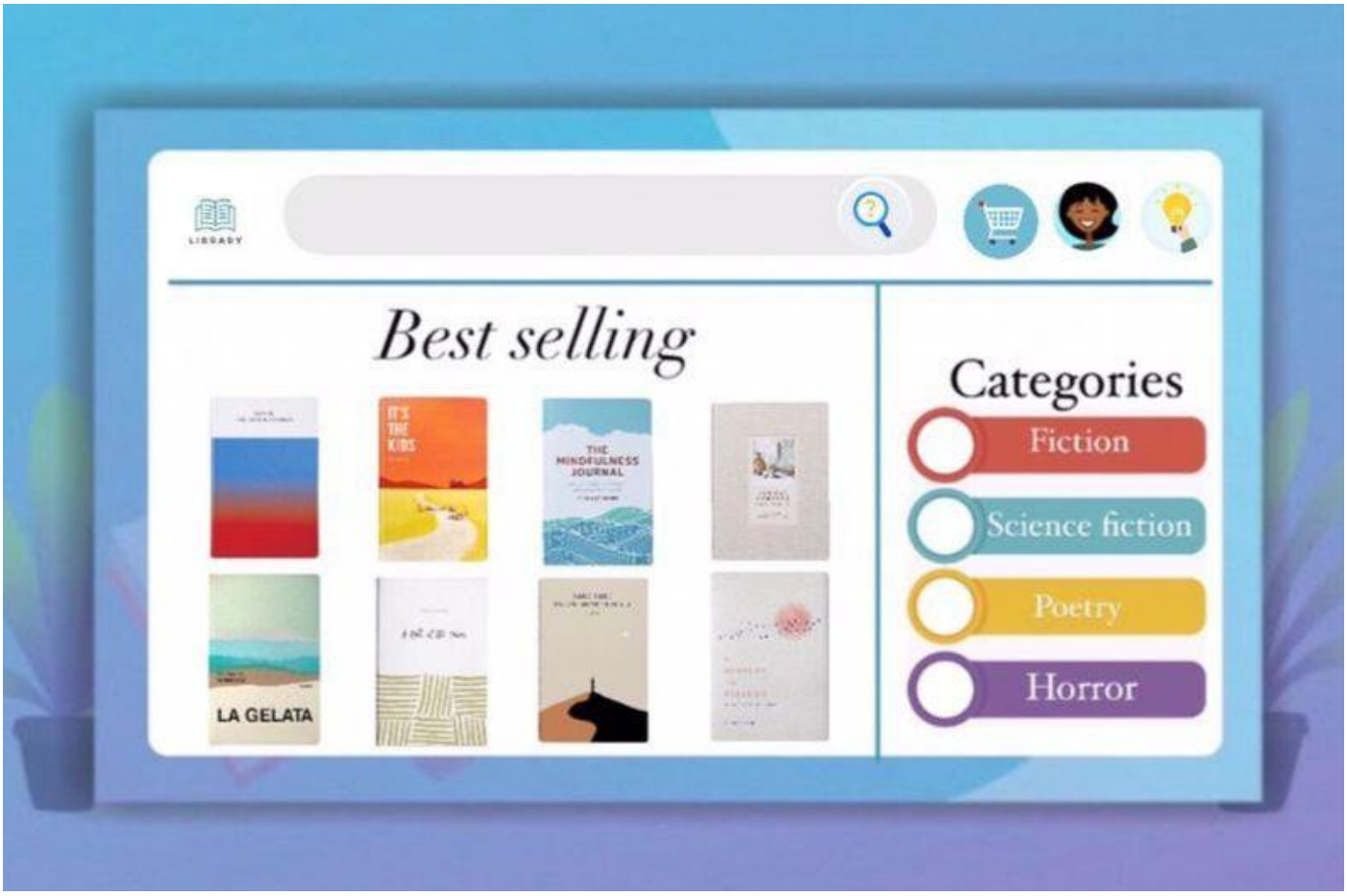

Figure 6 : Categories

3.1.7 Selected Category Page:

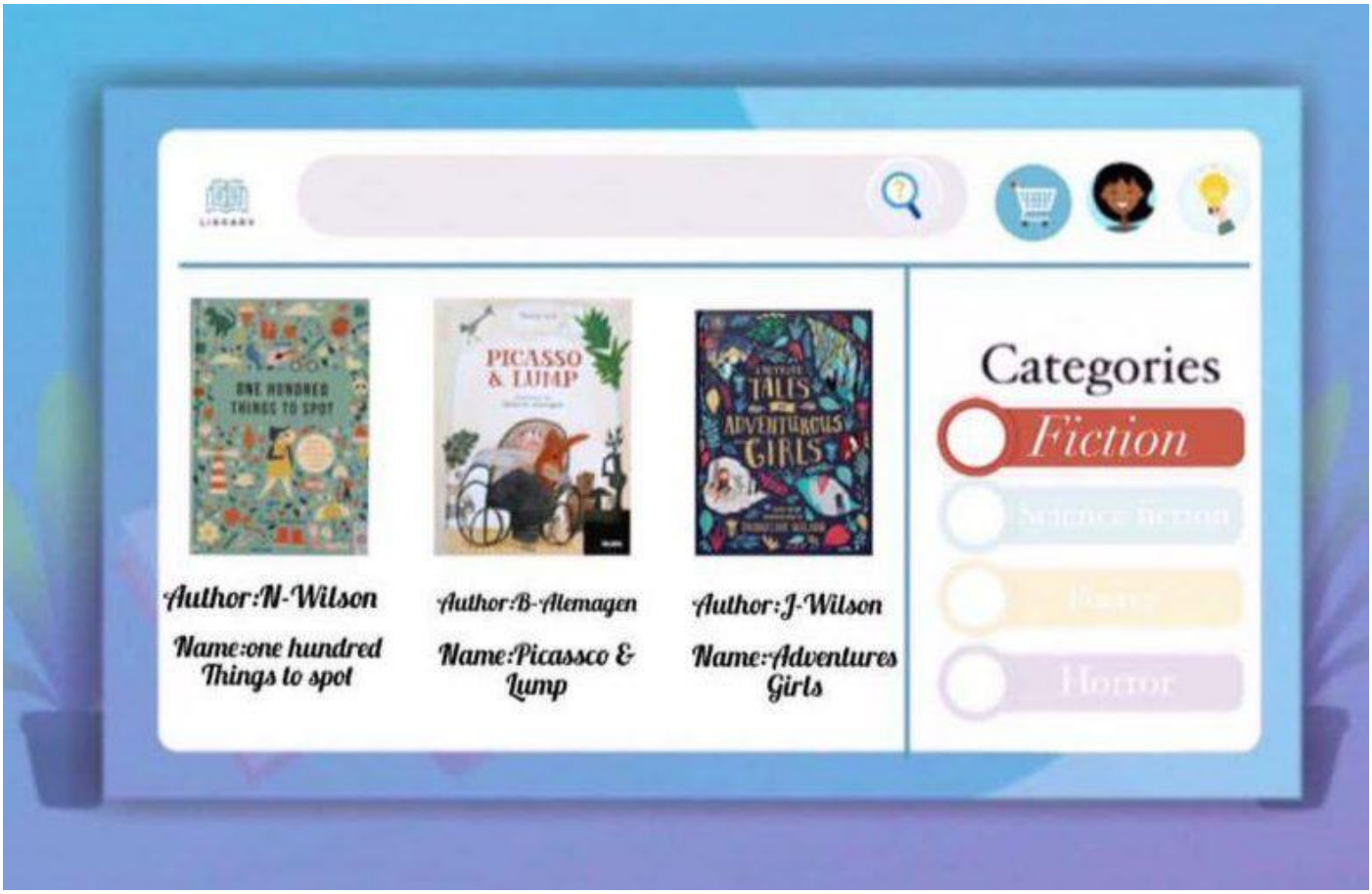

Figure 7 : Selected Category

3.1.8 Book’s description Page:

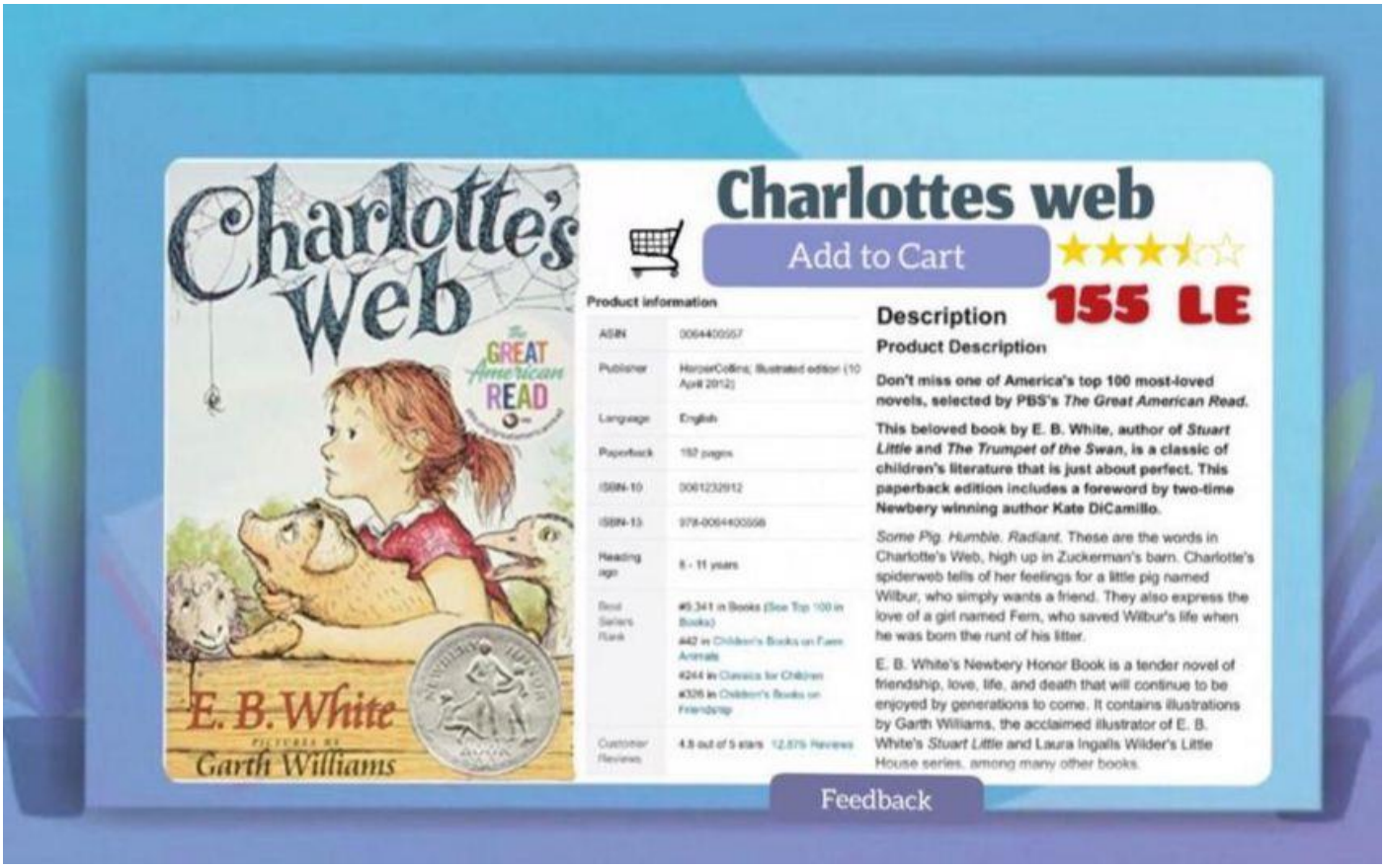

Figure 8 : Book’s Description

3.1.9 Add feedback Page:

Figure 9: Add feedback Page

3.1.10 Peoples’ feedback Page:

Figure 10:Peoples' feedback

3.1.11 Shopping cart Page:

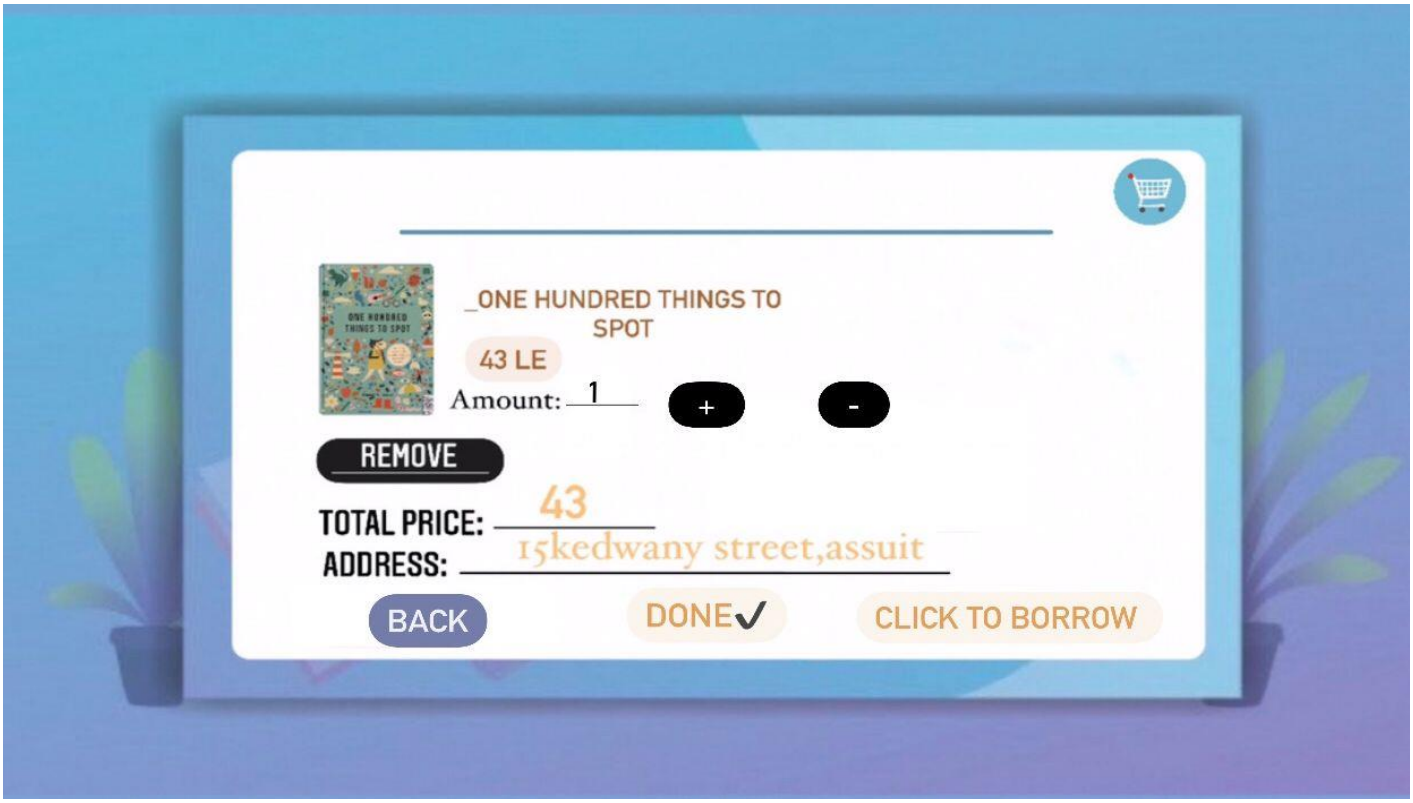

Figure 11:Shopping cart

3.1.12 Borrowing interface:

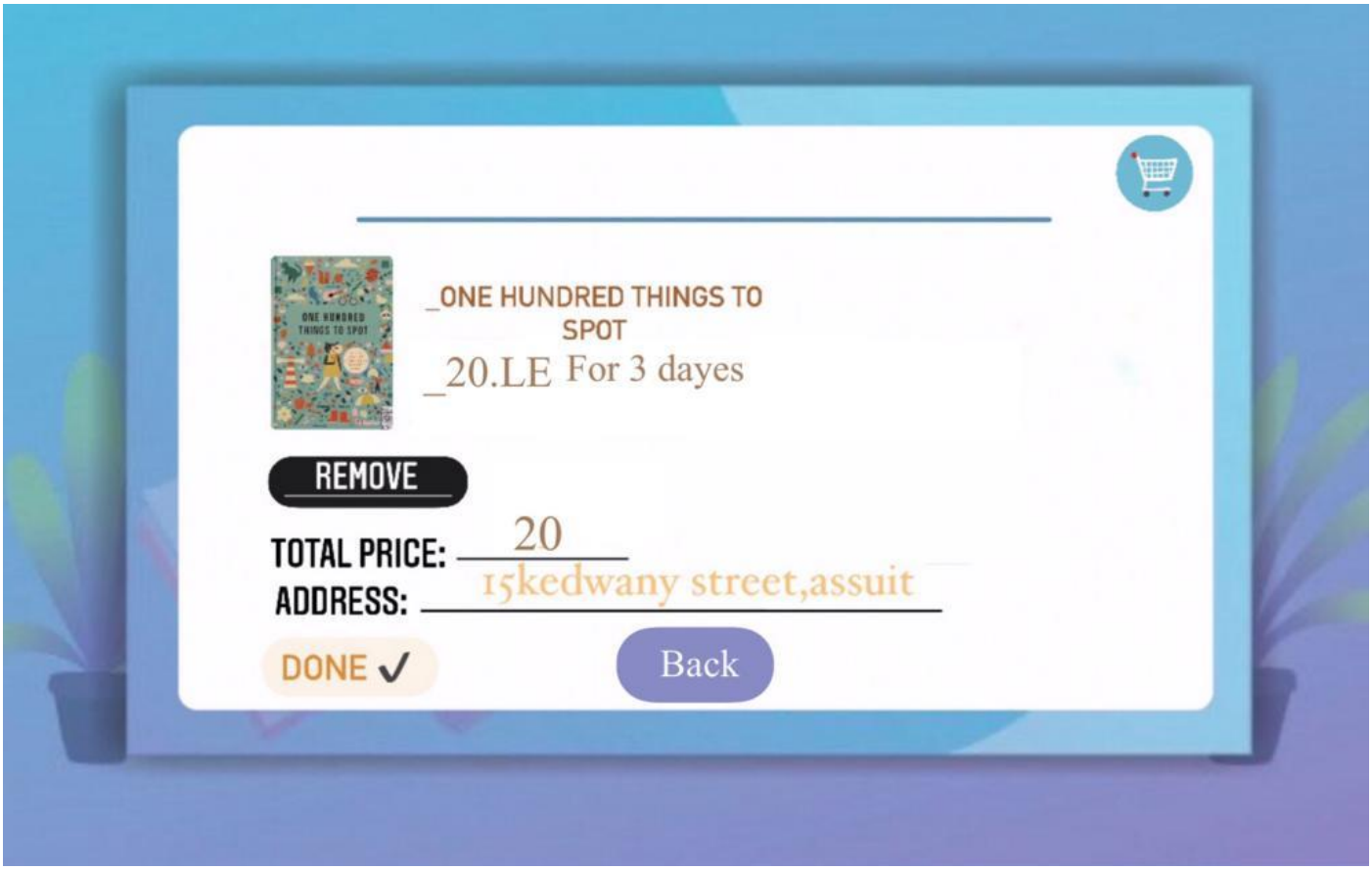

Figure 12:Borrowing Interface

3.1.13 Profile and change settings Page:

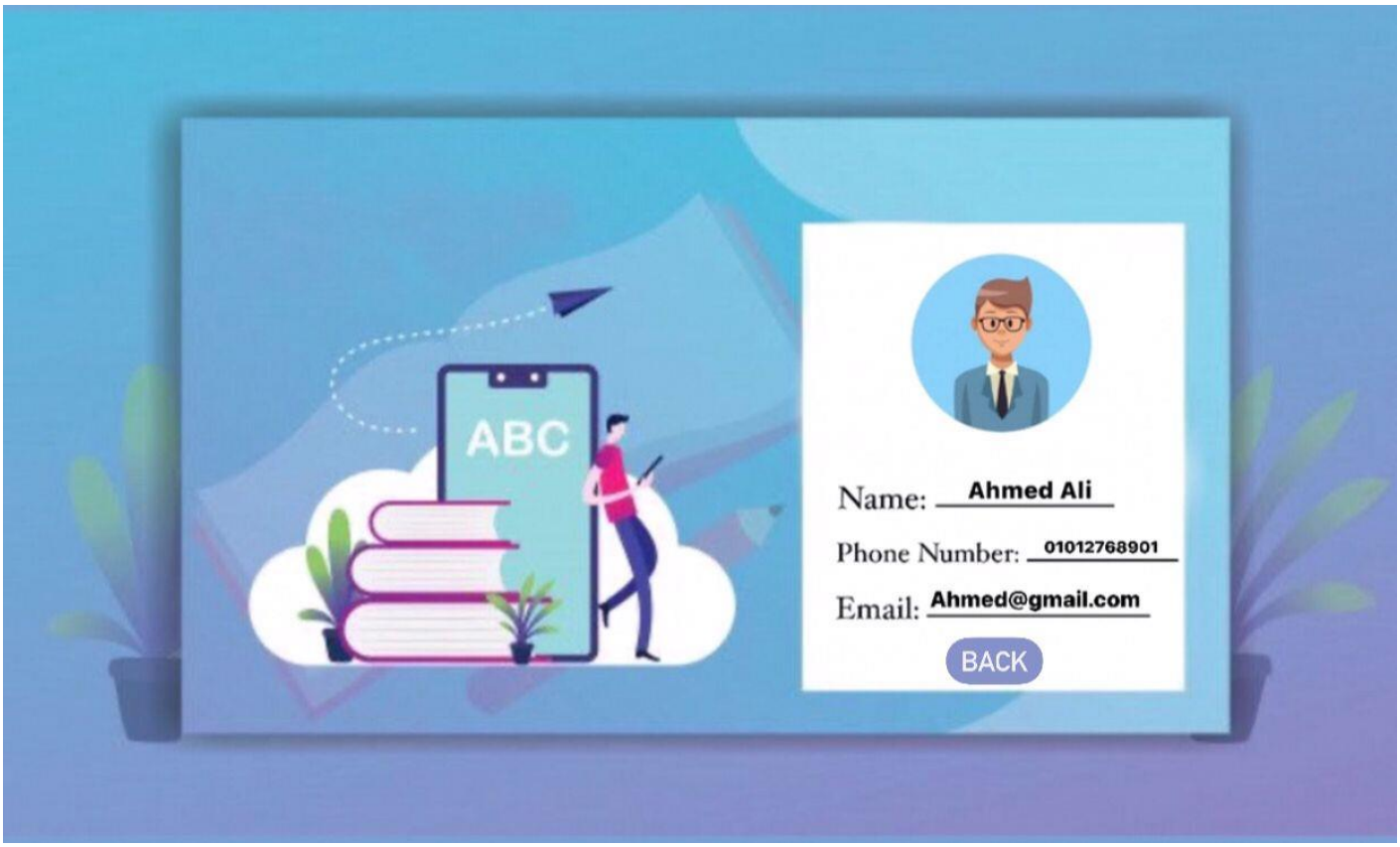

Figure 13: Profile and change settings Page

The following interfaces is the Librarian's:

3.1.14 Login Page:

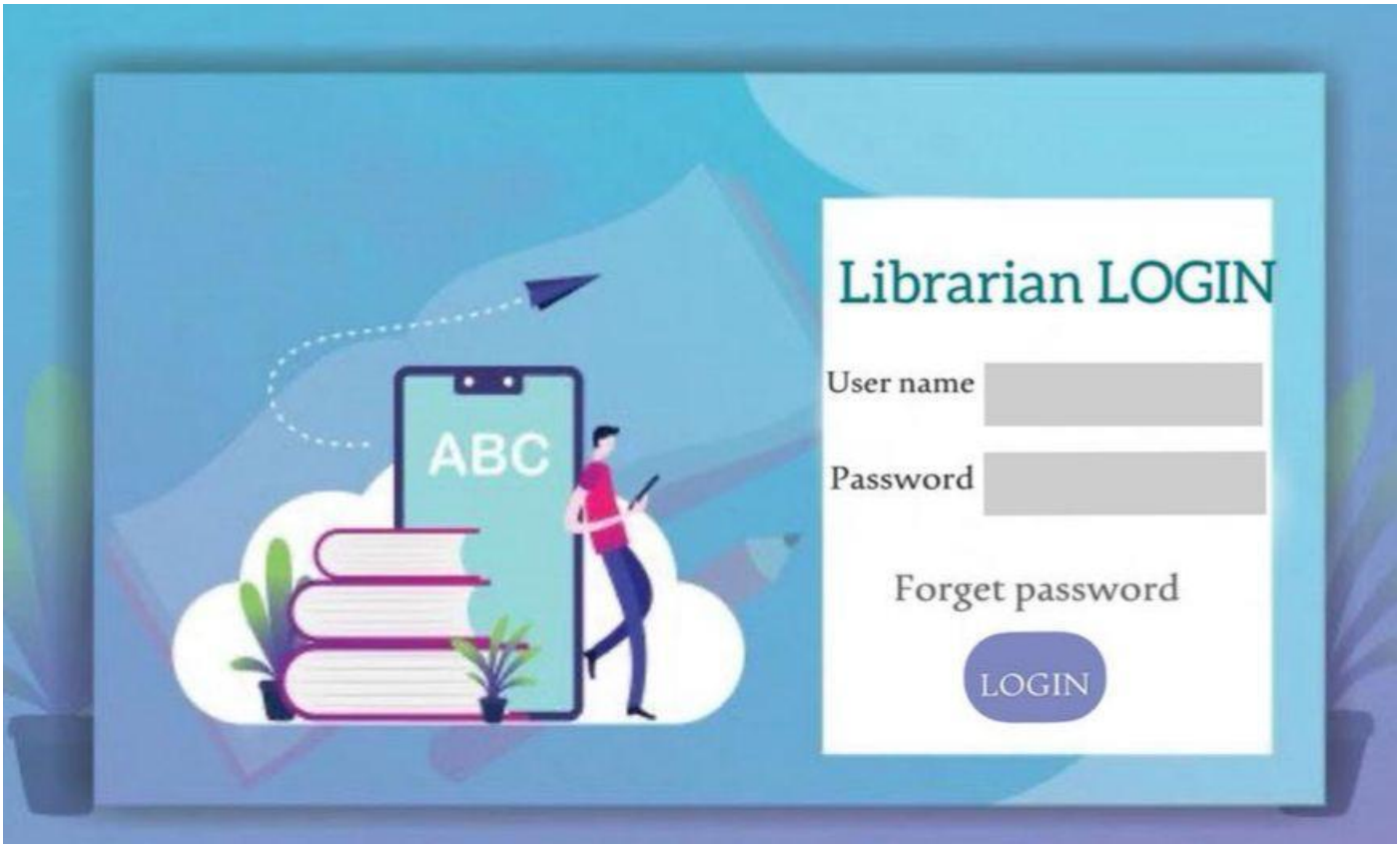

Figure 14: Librarian Login

3.1.15 Main Page:

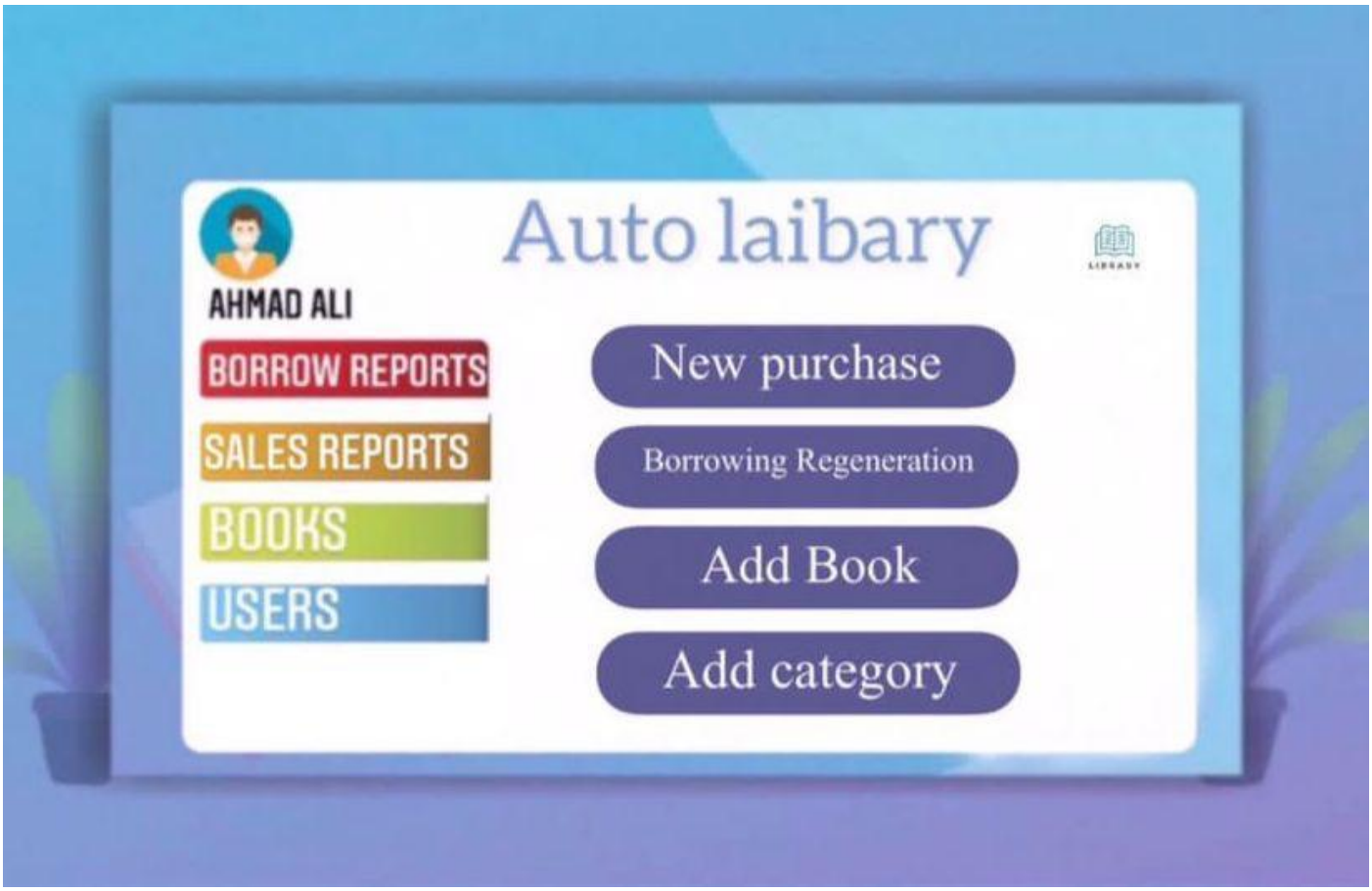

Figure 15:Main page for Librarian

3.1.16 Add books Page:

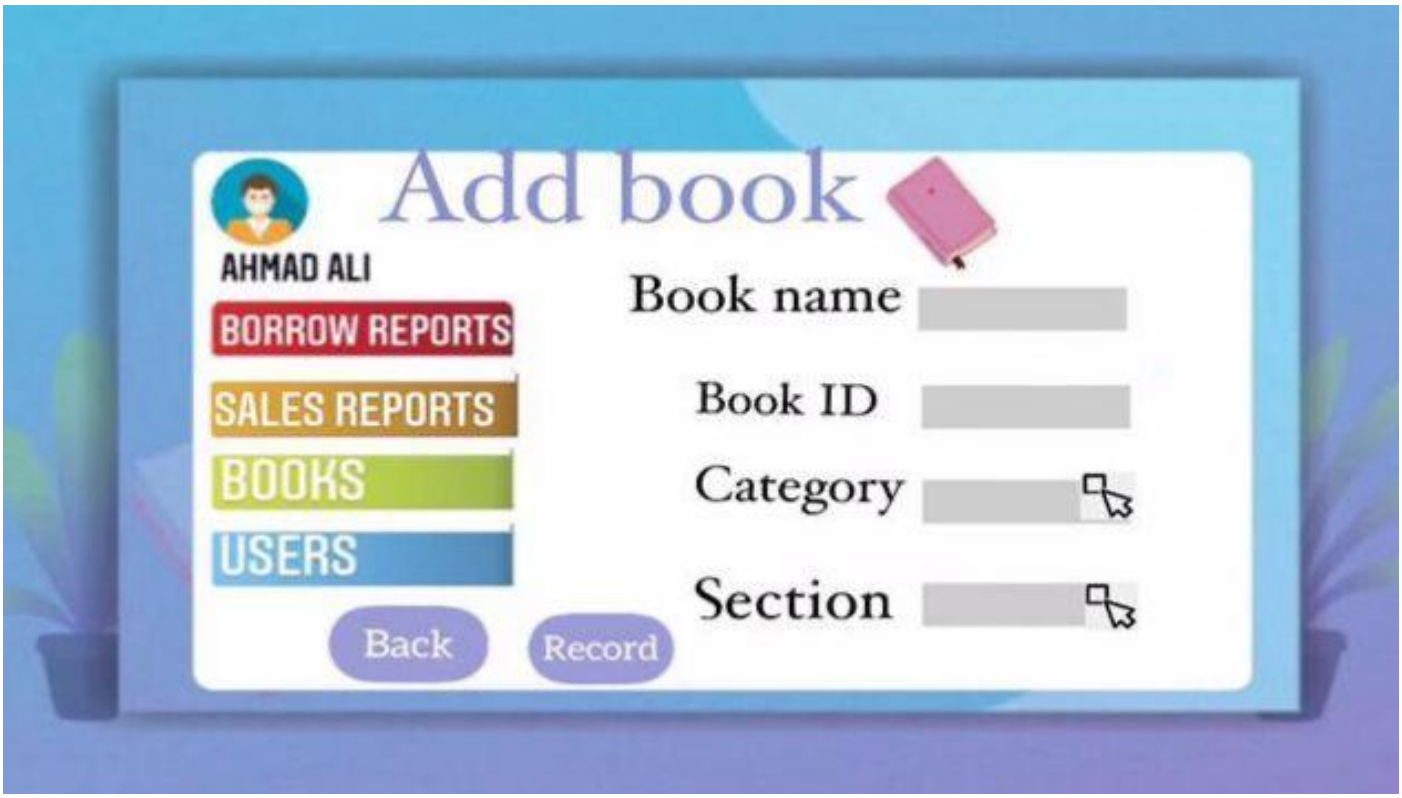

Figure 16:Add book Page.

3.1.17 Delete books Page:

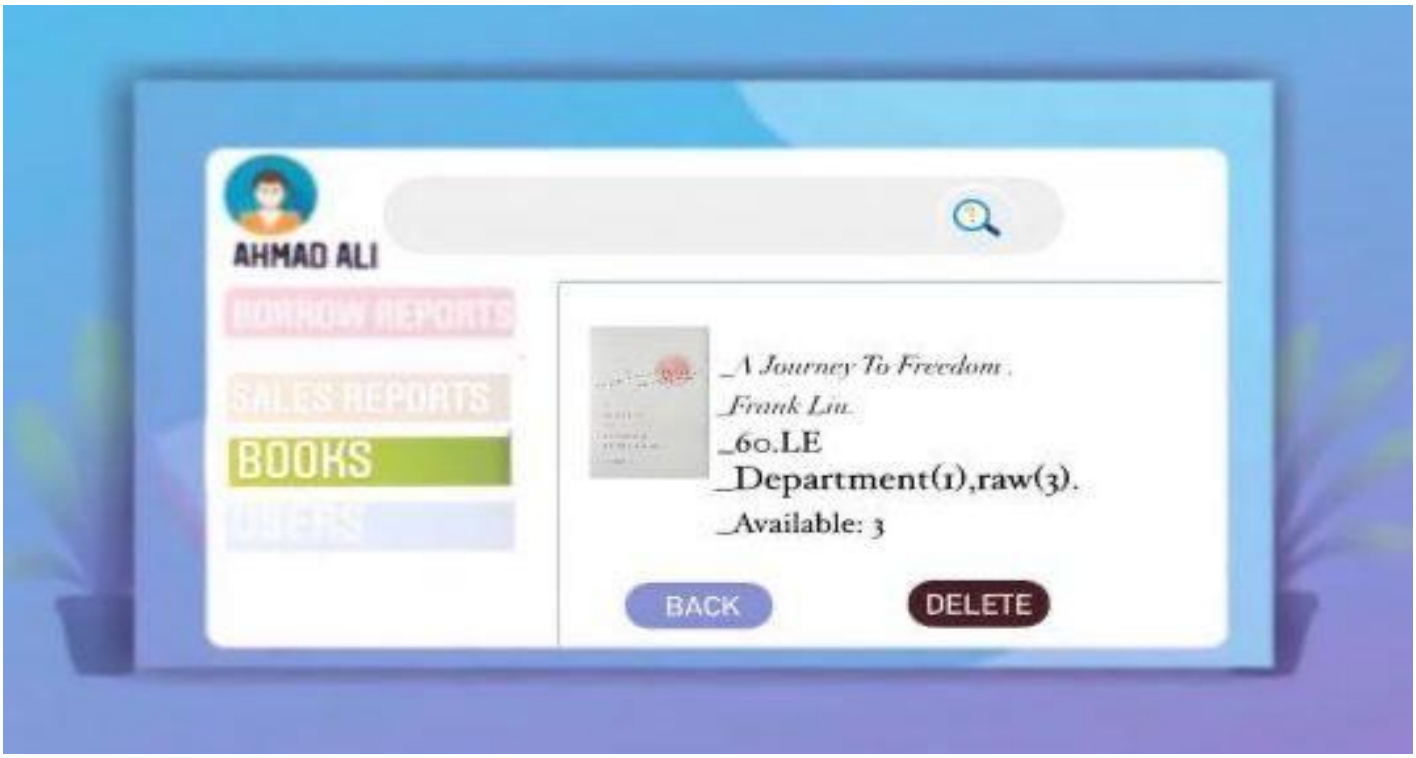

Figure 17: Delete books Page

3.1.18 Borrowing registration Page:

Figure 18:Borrowing registration Page

3.1.19 Add category Page:

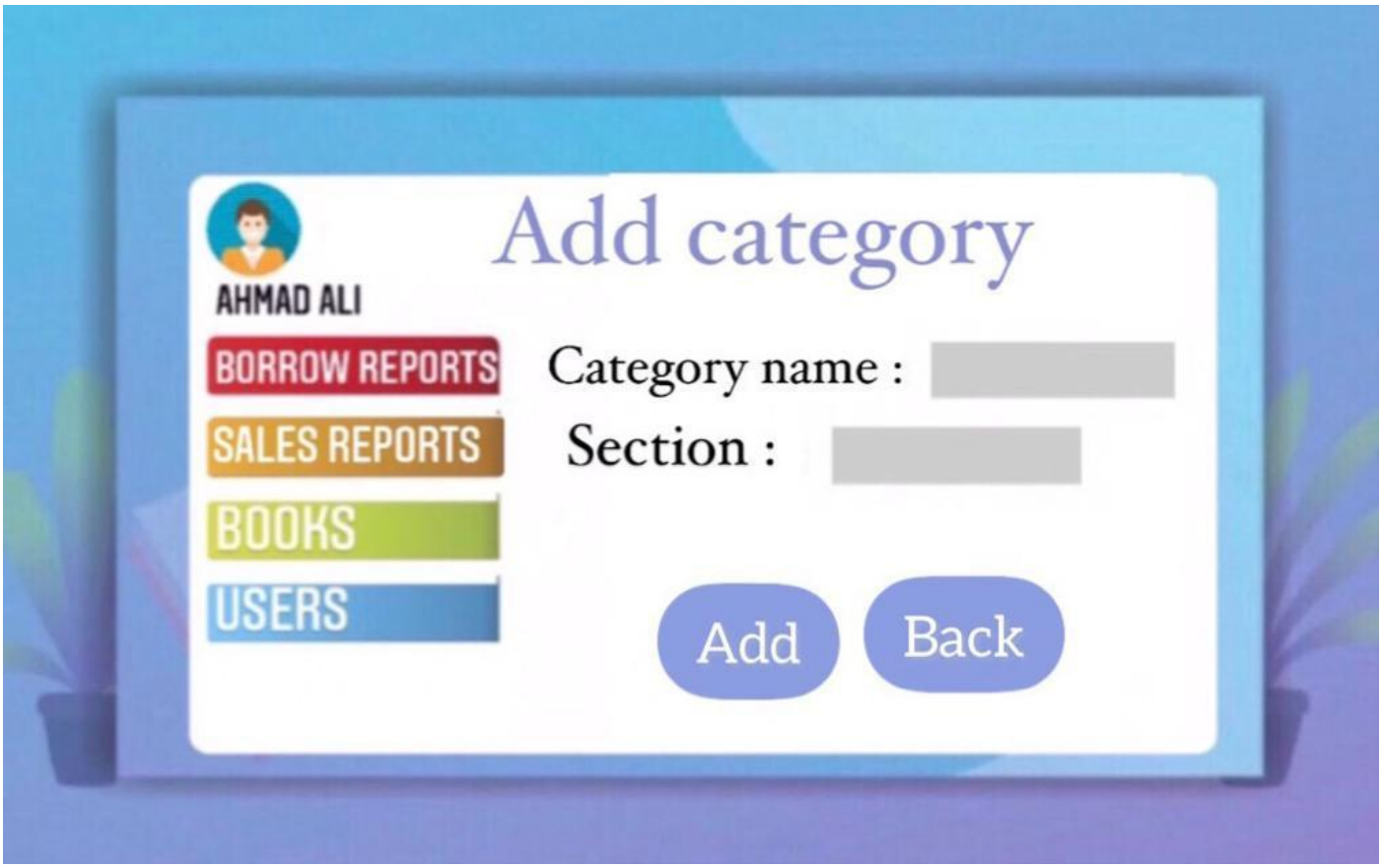

Figure 19: Add new Category

3.1.20 Sales report Page:

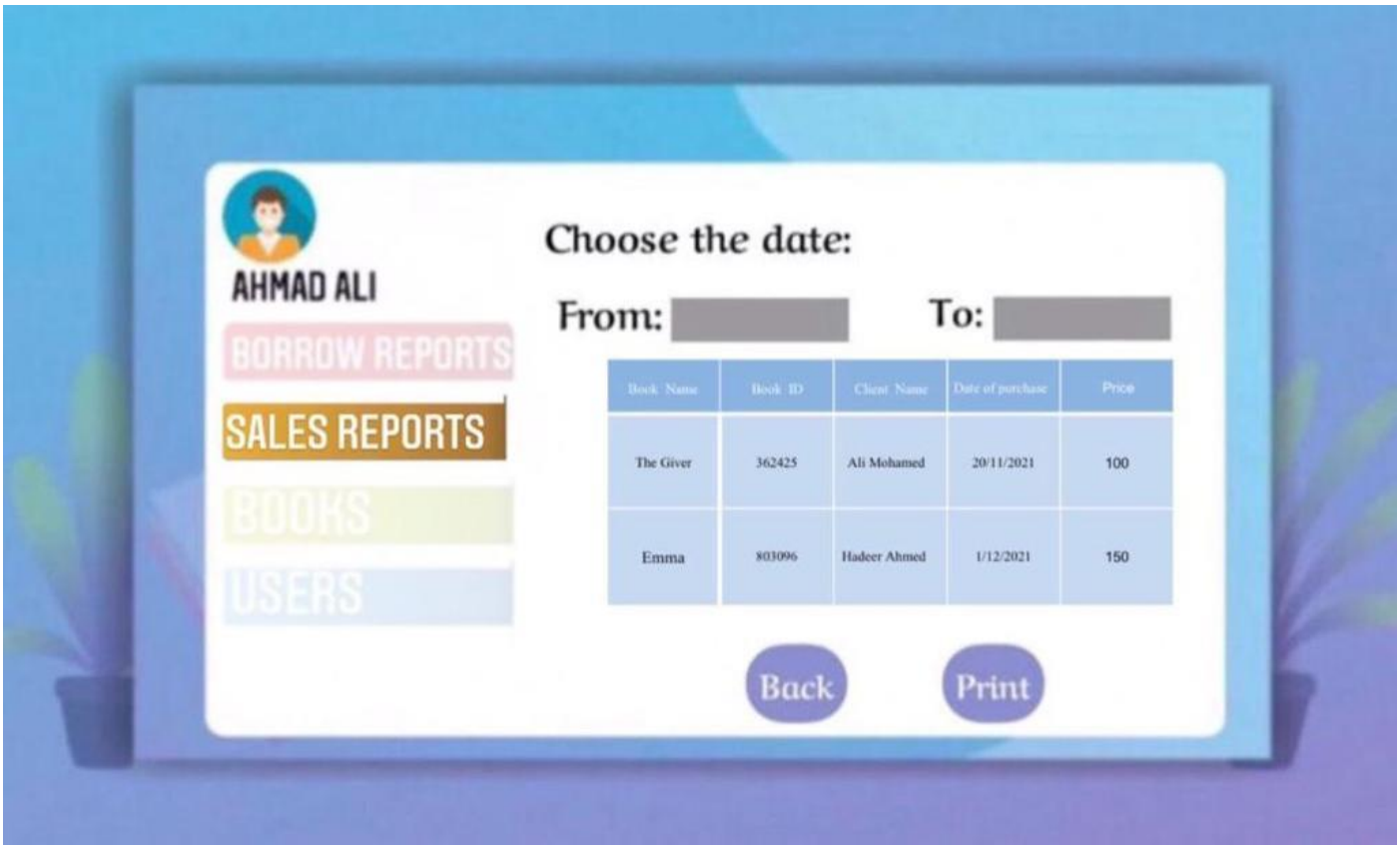

Figure 20: Sales Report

3.1.21 Borrow reports Page:

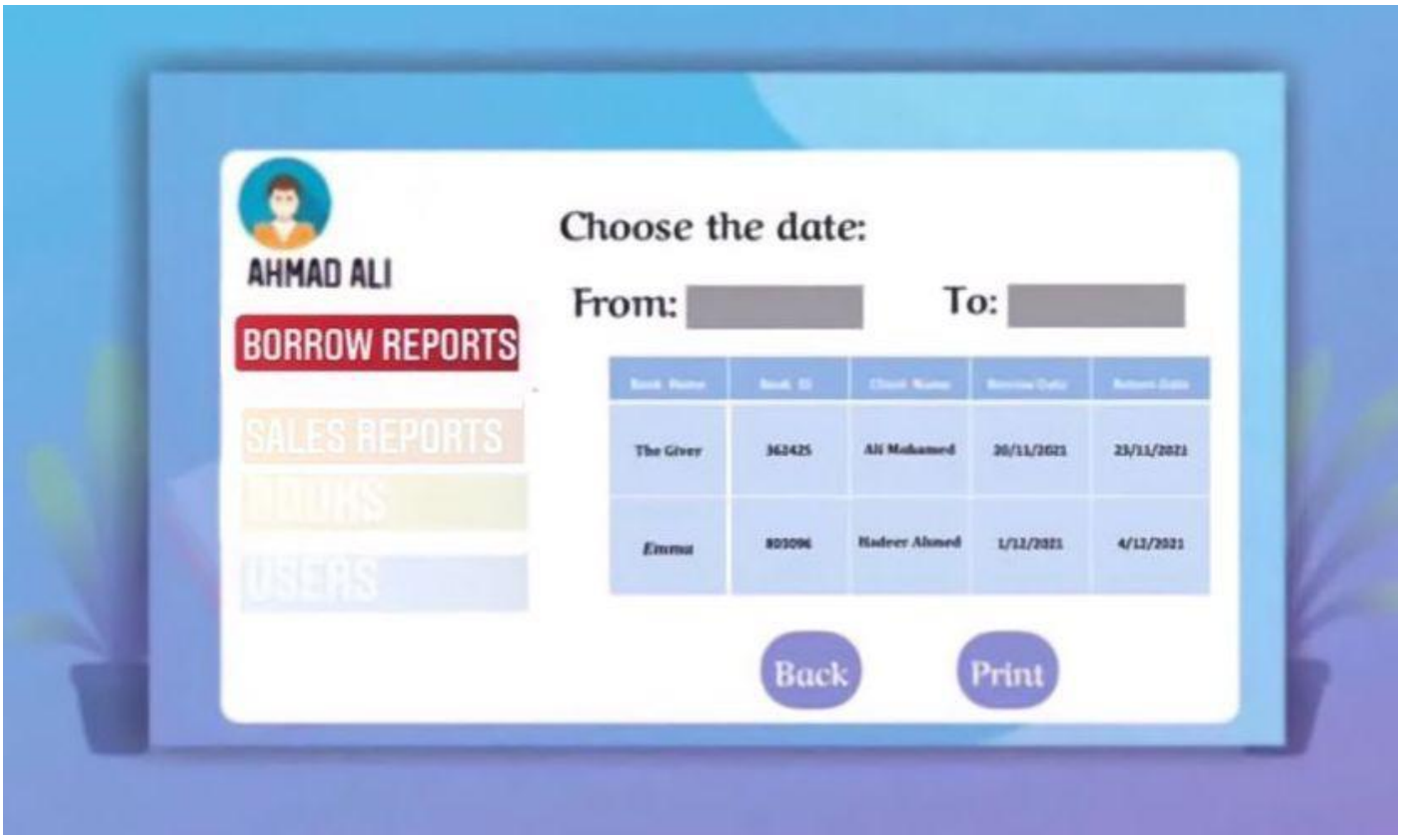

Figure 21:Borrow reports page

3.1.22 New purchase Page:

Figure 22:New purchase

3.1.23 User profile and Transaction history Page:

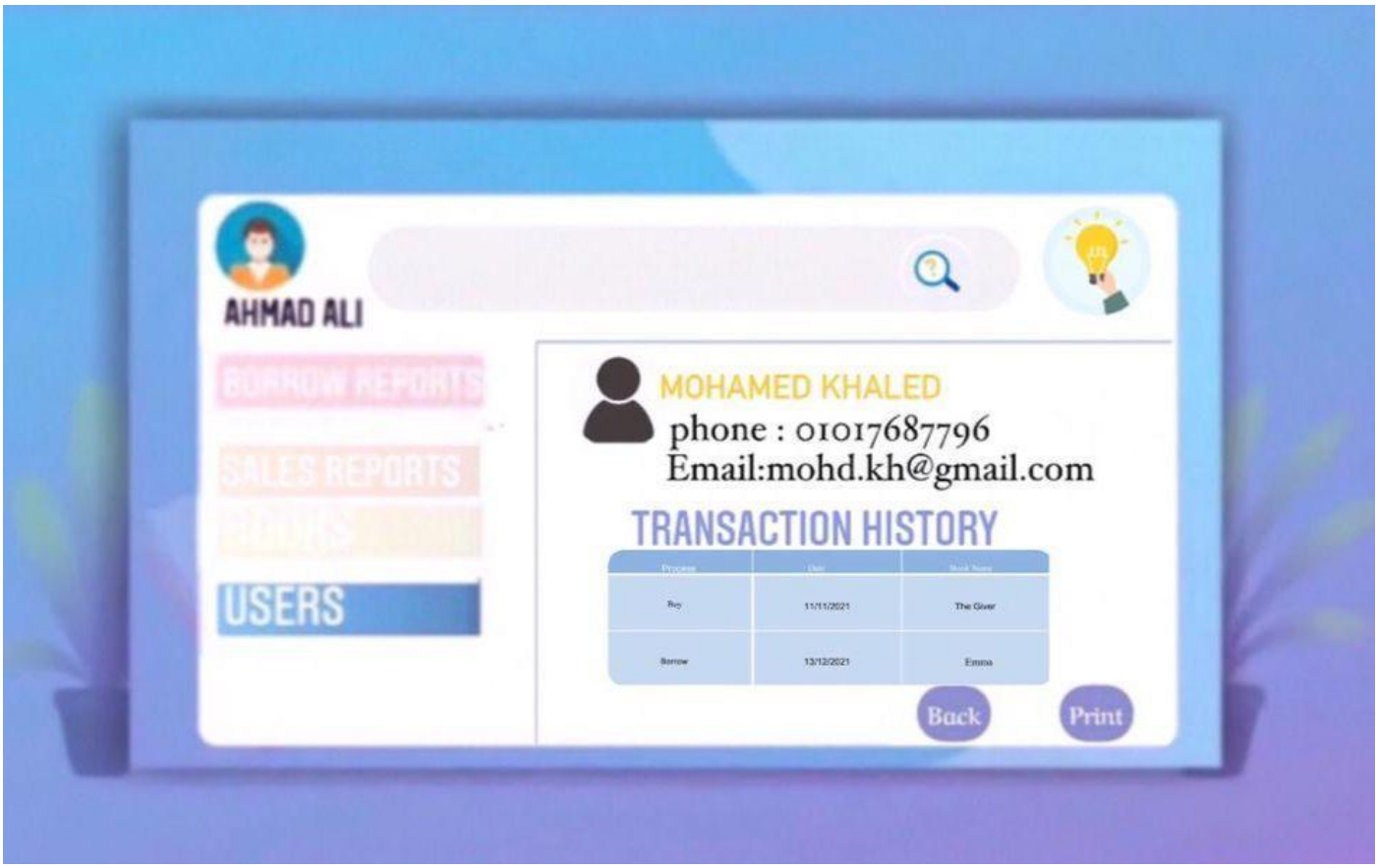

Figure 23:User profile and transaction history

3.2 Hardware interfaces:

This application works on PC and laptops. The existing Local Area Network (LAN) will be used for collecting data from the users and also, for updating the Library Catalogue.

3.3 Software interfaces:

Since this application is a PC application, it will only need a Windows 7 operating system or newer versions.

3.4 Communications interfaces:

The Online Library System will be connected to the World Wide Web.

Section 4: System features

4.1: Use case diagram

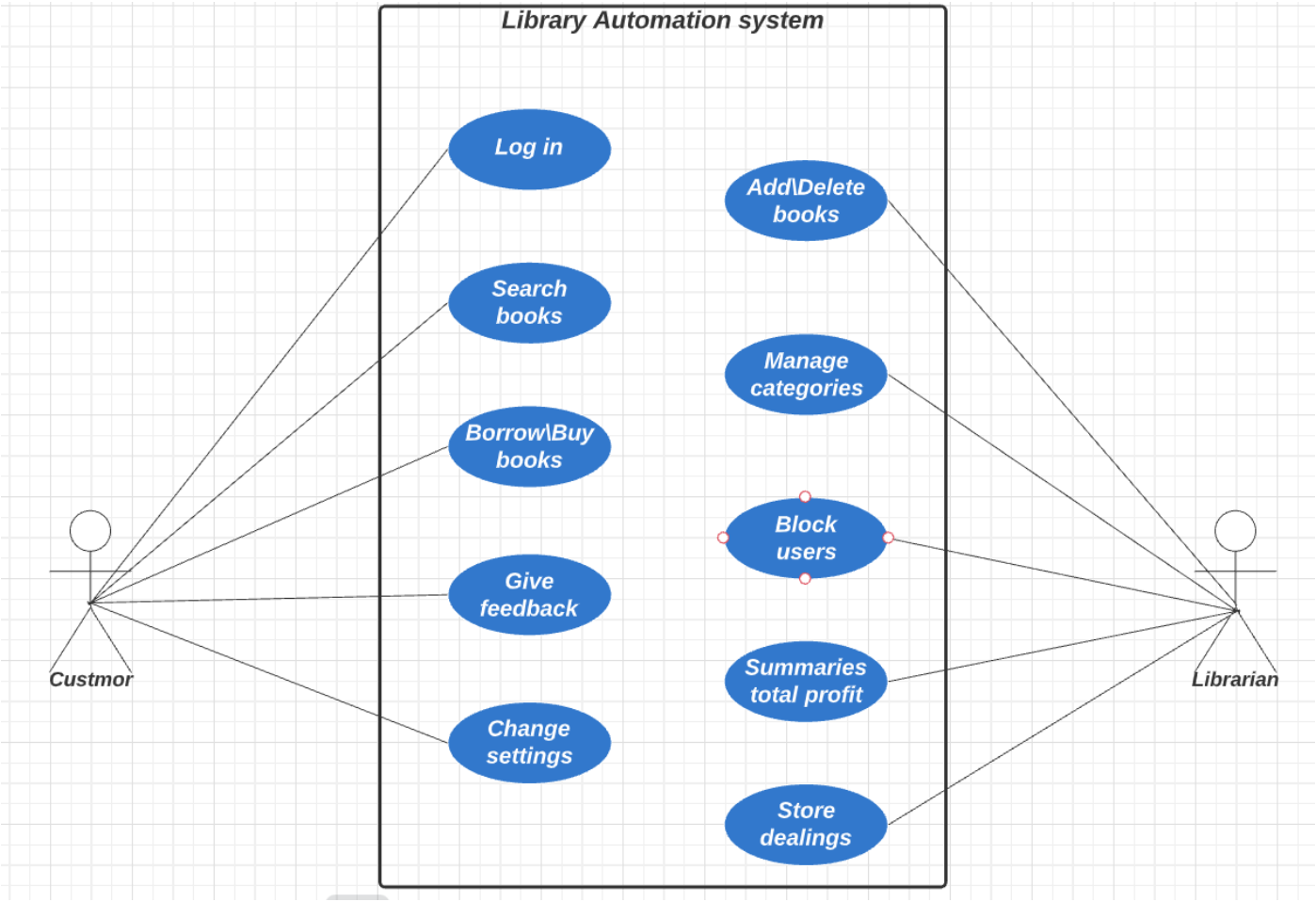

Figure 24:Use case Diagram

4.2: Entity relationship diagram (ERD)

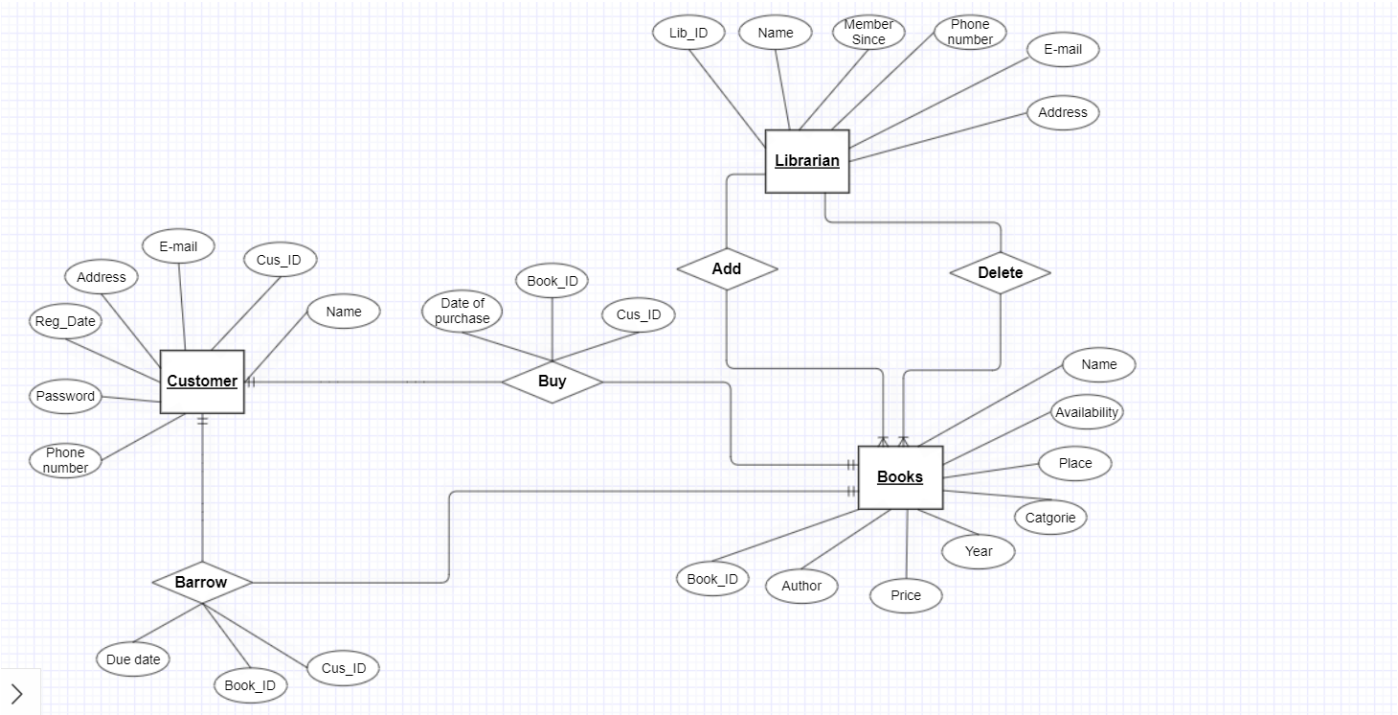

Figure 25 :ERD

4.3: Use case scenarios

Use case name	Customer login	
Goal	Log in to the system	
Primary Actors	Customers(users)	
Secondary Actors		
Precondition	User must have an account to enter to the system	
Post condition	User enables to use the system by buying, borrowing, searching ….etc	
Triggers	&*&	Buttons : LOGIN , Forget password , Create new account
Main flow	Step	Action
	1	Users enter his or her username
	2	Users enter his or her password
	3	Then click on login button
	4	Then move to main page

Use case name	Create new account	
Goal	Create a new account to log in to the system	
Primary Actors	Customers(users)	
Secondary Actors		
Precondition	User has a valid internet connection. User who didn't have an account to enter the system	
Post condition	Users have an account to enter the system to do what he want	
Triggers	&*&	Buttons : Next , Back to login
Main flow	Step	Action
	1	User enters his or her first name
	2	User enters his or her last name
	3	User enters his or her password
	4	User enters his or her confirmation password
	5	User enters his or her phone number
	6	User enters his or her email
	7	Clicks on next button to move to main page
		If user want to back to login page, clicks on back to login button

Use case name	Forget password	
Goal	Create a new password instead of forgotten one	
Primary Actors	Customers(users)	
Secondary Actors		
Precondition	User have an account in the system User forgot his or her old password	
Post condition	User has a new password User enable to use the system again	
Triggers	&*&	Buttons : Next , Back
Main flow	Step	Action
	1	Enter a valid email or phone number to get a confirmation code
	2	Click on next button then move to confirm code page
	3	Enter a received code then click on next button
	4	Then move to create new password page
	5	Enter a new password and his confirm password
	6	Click on next button
	7	Then move to main page

Use case name	Main Page	
Goal	Look up books, categories, bestselling, get help and shopping	
Primary Actors	Customers(users)	
Secondary Actors		
Precondition	User is on login page or in create account page to access the main page	
Post condition	User enable to search, borrow, buy books and enable to enter his or her profile he will have a control to do what he want in the system within his or her limit	
Triggers	&*&	Buttons : shopping cart , profile setting , help
Main flow	Step	Action
	____	When he clicks on a book, he will move to book`s description page
	____	When he clicks on a profile icon, he will move to profile and change setting page
	____	When he clicks on a cart icon, he will move to shopping cart page
	____	When he clicks on a lamp icon, he will download user manual

Use case name	Profile and change setting	
Goal	User information	
Primary Actors	Customers(users)	
Secondary Actors		
Precondition	User enters his or her username and password, enters the system and is in main page	
Post condition	User enable to do what he or she want in his or her profile within their limit	
Triggers	&*&	Buttons : Back
Main flow	Step	Action
	____	User can change his or her name, profile picture, phone number and email

Use case name	Book description	
Goal	Book`s information	
Primary Actors	Customers(users)	
Secondary Actors		
Precondition	User is in main page and wants to choose a specific book	
Post condition	User enters book description page and do the action he wanted	
Triggers	&*&	Buttons : Feedback , Add to cart
Main flow	Step	Action
	____	When user clicks on add to card button, he will be moved to shopping cart page
	____	When user clicks on feedback button, he will be moved to people`s feedback and add feedback page

Use case name	Feedback and write feedback	
Goal	Users` feedback and write feedback	
Primary Actors	Customers(users)	
Secondary Actors		
Precondition	User in book description page and wants to read and write his feedback	
Post condition	User reads and writes his or her feedback	
Triggers	&*&	Buttons : Send , Back
Main flow	Step	Action
	____	User can read other users` feedback
	____	User can add his own feedback and click on send button

Use case name	Add to cart	
Goal	Complete buying / borrowing process	
Primary Actors	Customers(users)	
Secondary Actors		
Precondition	User is in book description page and wants to buy / borrow a specific book	
Post condition	The chosen book will be added to shopping cart page	
Triggers	&*&	
Main flow	Step	Action
	____	User can increase / decrease number of wanted books by clicking on + or – button
	____	User can remove a selected book by clicking on remove button
	____	User can select payment method (visa, cash)
	____	Total price will be calculated automatically
	____	User must enter the address that will be delivered to

Use case name	Librarian login	
Goal	Log in to the system	
Primary Actors	Librarian	
Secondary Actors		
Precondition	Librarian has a fixed account to enter the system	
Post condition	Librarian is in main page and has a control in the system to add / delete book …etc	
Triggers	&*&	Buttons : LOGIN , Forget password
Main flow	Step	Action
	____	Librarian enters his or her username
	____	Librarian enters his or her password
	____	Then click on login button
	____	He or she will be moved to librarian`s main page

Use case name	librarian`s main page	
Goal	For librarian to start using the system	
Primary Actors	Librarian	
Secondary Actors		
Precondition	Librarian is on login to access the main page	
Post condition	Librarian controls the whole system by add / delete books, categories ….etc	
Triggers	&*&	Buttons : New purchase , Borrowing Registration , Add book , Add category , USERS , BOOKS , SALES REPORTS , BORROW REPORTS
Main flow	Step	Action
	____	Click on Borrow reports button on the left to move to “Borrow reports” page
	____	Click on Sales reports button on the left to move to “Sales reports” page
	____	Click on Books button on the left to move to “Books” page
	____	Click on Users button on the left to move to “User profile and Transaction history” page
	____	Click on New purchase button on the middle to move to “New purchase” page.
	____	Click on Borrowing Regeneration button on the middle to move to “Borrowing Regeneration” page
	____	Click on Add book button on the middle to move to “Add book” page
	____	Click on Add category button on the middle to move to “Add category” page

Use case name	Borrow reports	
Goal	Borrow reports for a specified period of time.	
Primary Actors	librarian	
Secondary Actors		
Precondition	User borrowed books and entered his or her data	
Post condition	Librarian can print reports about this process	
Triggers	&*&	Buttons : Print , Back
Main flow	Step	Action
	____	he\she must enter From date and To date of the report then press “Print” button to print the report

Use case name	Add book	
Goal	Add books feature	
Primary Actors	librarian	
Secondary Actors		
Precondition	A specific book is out of stock or a new book is available	
Post condition	Books will be added to the system and users can search about it	
Triggers	&*&	Buttons : Record , Back
Main flow	Step	Action
	____	Librarian enters book name, book ID, category and section

Use case name	Add category	
Goal	Add category feature	
Primary Actors	librarian	
Secondary Actors		
Precondition	A collection of books is available and doesn’t have a category	
Post condition	A new category is added and users can access this category to see what is available	
Triggers	&*&	Buttons : Add , Back
Main flow	Step	Action
	____	Librarian enters category name and section

Use case name	Borrowing registration	
Goal	Store a new borrowing process	
Primary Actors	librarian	
Secondary Actors		
Precondition	User chooses a book or a collection of books and wants to borrow them	
Post condition	The process of borrowing is stored in the system	
Triggers	&*&	Buttons : Record , Back
Main flow	Step	Action
	____	Librarian must enter a valid book ID that exists in the data base, otherwise and error message shows up saying “Book not found”
	____	Librarian must enter a valid Customer name that already exists in the system, otherwise an error message shows up saying “User not found”
	____	Librarian must a valid Borrowing date and Return date.Borrowing date must be earlier than the returning date, otherwise an error message shows up saying “Invalid date”

Use case name	Delete books	
Goal	Delete books feature	
Primary Actors	librarian	
Secondary Actors		
Precondition	Books is out of stock and isn’t available again	
Post condition	Books will be removed from the system	
Triggers	&*&	Buttons : Delete , Back
Main flow	Step	Action
	____	Librarian can search for any book and see number of available books and delete one book by pressing on the DELETE button

Use case name	New purchase	
Goal	Add a new purchase feature	
Primary Actors	librarian	
Secondary Actors		
Precondition	User chooses a book or a collection of books and wants to buy them	
Post condition	This process is stored in the system	
Triggers	&*&	Buttons : Record , Back
Main flow	Step	Action
	____	Librarian enters book name, book ID, customer name, phone number and price
	____	Then click on record button

Use case name	Users	
Goal	Check Users profile and Transaction history	
Primary Actors	librarian	
Secondary Actors		
Precondition	A collection of users has accounts, stored in the system	
Post condition	Librarian can check User profile and Transaction history and print records about users	
Triggers	&*&	Buttons : Print , Back
Main flow	Step	Action
	____	Librarian can check user profile and Transaction history using this feature, by searching for a user using his ID in the search bar
	____	Then click on print button to print user`s record

Use case name	Sales reports	
Goal	Sales reports for a specified period of time	
Primary Actors	librarian	
Secondary Actors		
Precondition	Users buy / borrow books and these processes stored in the system	
Post condition	Librarian can print reports about these actions for a specific period of time	
Triggers	&*&	Buttons : Print , Back
Main flow	Step	Action
	____	Librarian can print a report about Sales actions for a specified period of time.
	____	he\she must enter From date and To date of the report then press “Print” button to print the report

4.3: Customer login

4.3.1 description and priority:

User login facility, it`s a high priority. user must login to use this software

4.3.2 stimulus / response sequences:

User enters (his / her) username and password to move to the main page.

4.3.3 functional requirements:

REQ-1: user must have valid internet connection

REQ-2: user must enter valid username and password

-If the user enters a valid username and password, he will enter the main page.

-If the user enters invalid username or password, an error message shows up saying: “invalid username or password”.

4.4: Create new account

4.4.1 description and priority:

If the user doesn’t have an account, he can create a new one with this feature.

It’s a high priority if the user doesn’t have an account.

4.4.2 stimulus / response sequences:

User enters his / her first name, last name, phone number, email, password and confirm password.

4.4.3 functional requirements:

REQ-1: user must have a valid internet connection.

REQ-2: password must have at least 8 characters.

REQ-3: user must enter a valid email.

- The user must fill all fields, password must match confirm password.

-If all inputs are valid, he can press next button and he will receive a confirmation code on his phone number to finish and go back to login page.

-If the user doesn’t receive code, he can press send again button to resend a code.

-If any of inputs are invalid, then an error message shows up saying invalid inputs.

4.5: Forget password

4.5.1 description and priority:

If the user forgot his / her password, he can use this feature to reset his password.

It`s a high priority only if he forgot his password.

4.5.2 stimulus / response sequences:

User should enter his phone number or email that matches with his account.

4.5.3 functional requirements:

REQ-1: user must have a valid internet connection.

REQ-2: email or phone number must be valid and matches with the account.

-If the input is valid, then code will be sent to what he or she chose (email or phone number).

-When he or she inputs the valid code, he will move to create new password page and inputs new password and confirm password then press next button to finish this process and go back to login page.

-If any of inputs are invalid, then an error message shows up saying invalid inputs.

4.6: Main Page.

4.6.1 description and priority:

Main page to look up books, categories, bestselling, get help, profile and shopping cart.

4.6.2 stimulus / response sequences:

-The default category that appears in the main page is Best Selling.

-User can search for book using search bar.

-User can select categories from the right side to show books from the chosen category.

-User can access his or her profile and change settings.

-User can check his or her shopping cart.

-User can choose the wanted book.

-If the user clicks on a category from the right side, then books from this category will appear in the main page.

-If the user clicks on a book, he will be moved to book description page.

-If the user clicks on the profile button, he will be moved to profile page.

-User can click on the get help button to download the user manual.

4.6.3 functional requirements:

“TBD”

4.7: Profile and change settings

4.7.1 description and priority:

User information

4.7.2 stimulus / response sequences:

User can check and change his or her profile picture, name, phone number and email.

4.7.3 functional requirements:

If the user enters an invalid phone number or email, an error message shows up saying invalid inputs.

4.8: Book description

4.8.1 description and priority:

Book`s information (name category, author, …… etc.)

4.8.2 stimulus / response sequences:

User can click on add to card button to proceed on buying / borrowing phase.

User can click on feedback button to see what people write about this book and he can write his or her feedback.

4.8.3 functional requirements:

“TBD”

4.9: Feedback

4.9.1 description and priority:

Users feedback about a book.

4.9.2 stimulus / response sequences:

User can read people`s feedback and write his own feedback.

4.9.3 functional requirements:

“TBD”

4.10: Write Feedback

4.10.1 description and priority:

User's feedback about a book.

4.10.2 stimulus / response sequences:

User can write his own feedback about a book and click Next button to Submit his feedback

4.10.3 functional requirements:

"TBD"

4.11: Add to cart

4.11.1 description and priority:

Complete buying / borrowing process.

4.11.2 stimulus / response sequences

-User can increase / decrease number of wanted books by clicking on + or – button.

-User can remove a selected book by clicking on remove button.

-User can select payment method (visa, cash).

-Total price will be calculated automatically.

-User must enter the address that will be delivered to.

4.11.3 functional requirements

-If the user didn't enter any address, error message shows up saying must enter address.

-If the user didn't select payment method, error message shows up saying must select payment method.

4.12: Librarian login

4.12.1 description and priority:

Librarian login facility. High priority, librarian must login into the system to start using it.

4.12.2 stimulus / response sequences:

-Librarian enters his/her username and password to login into the system and start using it.

4.12.3 functional requirements:

-If he/she entered a password that doesn't match the username an error message shows up saying "Wrong password, please try again".

-If he/she entered an invalid username an error message shows up saying: "Invalid username, please try again".

4.13: Librarian's main page

4.13.1 description and priority:

Main page for librarian to start using the system.

4.13.2 stimulus / response sequences:

Librarian can do the following:

- Click on Borrow reports button on the left to move to "Borrow reports" page.
- Click on Sales reports button on the left to move to "Sales reports" page.
- Click on Books button on the left to move to "Books" page.
- Click on Users button on the left to move to "User profile and Transaction history" page.
- Click on New purchase button on the middle to move to "New purchase" page.
- Click on Borrowing Regeneration button on the middle to move to "Borrowing Regeneration" page.
- Click on Add book button on the middle to move to "Add book" page.
- Click on Add category button on the middle to move to "Add category" page.

4.13.3 functional requirements:

Librarian must have a valid internet connection.

4.14: Borrow reports

4.14.1 description and priority:

Borrow reports for a specified period of time.

4.14.2 stimulus / response sequences:

-Librarian can print a report about borrowing actions for a specified period of time.

-he\she must enter From date and To date of the report then press “Print” button to print the report.

4.14.3 functional requirements:

-Librarian should enter a valid date and the date entered in the From section should be earlier than the date entered in the To section.

-If the data isn’t valid an error message shows up saying “Invalid Date”.

4.15: Add book

4.15.1 description and priority:

Add books feature.

4.15.2 stimulus / response sequences:

-Librarian can add new books by providing book’s name, ID, Category and section.

4.15.3 functional requirements:

-Librarian must enter a valid Category that already exists, otherwise an error message shows up saying “Category NOT found”.

-Librarian must enter a valid ID that doesn’t match any of the existing IDs, otherwise an error message shows up saying “ID already exists”.

4.16: Add category

4.16.1 description and priority:

Add category feature.

4.16.2 stimulus / response sequences:

-Librarian can add new category by providing its name and section.

4.16.3 functional requirements:

-Librarian must enter a valid Category that is unique and doesn't already exist in the database, otherwise an error message shows up saying "Category doesn't exist".

-Librarian must enter a valid section that isn't being occupied by another category, otherwise and error message shows up saying:

"Section already occupied".

4.17: Borrowing registration

4.17.1 description and priority:

Store a new Borrowing process.

4.17.2 stimulus / response sequences:

-Librarian can store a new borrowing process by providing Book's name and id, Customer name, phone number, price, borrowing date and return date.

4.17.3 functional requirements:

-Librarian must enter a valid book ID that exists in the data base, otherwise and error message shows up saying "Book not found".

-Librarian must enter a valid Customer name that already exists in the system, otherwise an error message shows up saying "User not found".

-Librarian must a valid Borrowing date and Return date.Borrowing date must be earlier than the returning date, otherwise an error message shows up saying "Invalid date".

4.18: Delete books

4.18.1 description and priority:

Delete books feature.

4.18.2 stimulus / response sequences:

-Librarian can search for any book and see number of available books and delete one book by pressing on the DELETE button

4.18.3 functional requirements:

-If the number of remaining books is 1 and the librarian clicked the DELETE button the book is deleted from the database and librarian moves back to the main page.

4.19: New purchase

4.19.1 description and priority:

Add a new purchase feature.

4.19.2 stimulus / response sequences:

-Librarian store a new purchase by providing book name, book id, customer id, phone number and price.

4.19.3 functional requirements:

-Librarian must enter a valid book name and id that exists in the database, otherwise an error message shows up saying “Book was not found”.

-Librarian must enter a valid customer ID that exists in the database, otherwise an error message shows up saying “Customer was not found”.

4.20: Users

4.20.1 description and priority:

Check Users profile and Transaction history.

4.20.2 stimulus / response sequences:

-Librarian can Check User profile and Transaction history using this feature, by searching for a user using his ID in the search bar.

4.20.3 functional requirements:

- "TBD"

4.21: Sales reports

4.21.1 description and priority:

Sales reports for a specified period of time.

4.21.2 stimulus / response sequences:

-Librarian can print a report about Sales actions for a specified period of time.

-he\she must enter From date and To date of the report then press "Print" button to print the report.

4.21.3 functional requirements:

-Librarian should enter a valid date and the date entered in the From section should be earlier than the date entered in the To section.

-If the data isn't valid an error message shows up saying "Invalid Date".

Section 5: Other Non-Functional requirements.

5.1 performance requirements

-The performance of the functions and every module must be well.

-This software wont breakdown suddenly in any disaster like power failure.

-The development of the software will be based on the object-oriented model.

-For login to the software, password and username will be matched to the password and name.

-Each user is saved in the database and thus only authenticated users are allowed to the login.

-The overall performance of the software will reliable and enable the users to work efficiently.

5.2 security / safety requirements

There will be proper security regarding to the accessing of data.

The data that are stored in the database must be private.

The whole software is secure from the outside accessing.

There is also required a user authentication.

5.3 software quality attributes

Our software has many qualities attribute that are given below:

Availability: the availability of the software is easy and for everyone.

Correctness: the results of functions are pure and accurate.

Maintainability: after the deployment of the project, if any error occurs, then can be easily maintained by the software developer.

Reusability: the data and records that are saved in the database can be reused if needed.

Robustness: if there is any error in any window or module, then it doesn't affect the remaining part of the software.

Productivity: this software will produce every desired result with accurately.

Reliability: the performance of the software is better which will increase the reliability of the software.

Cost-effective: this software is less in cost and bearable by any organization.