



PUBLIC LIBRARY SYSTEM

Documentation

Dimitri Etienne, Rayan Biharie, Chakir Bouchrouh

INF1C

Inhoud

Group info	2
Requirements Specification.....	3
1. INTRODUCTION	4
1.1 PURPOSE	4
1.2 PROJECT SCOPE.....	4
2. OVERALL DESCRIPTION.....	4
2.1 PRODUCT PERSPECTIVE	4
2.2 OPERATING ENVIRONMENT	5
2.3 PRODUCT FEATURES	5
3. REQUIREMENTS SPECIFICATION	5
3.1 DESCRIPTION AND PRIORITY	5
4. EXTERNAL INTERFACE REQUIREMENTS.....	5
4.1 USER INTERFACES	5
4.2 HARDWARE INTERFACES	6
4.3 COMMUNICATION INTERFACES	6
5. NON-FUNCTIONAL REQUIREMENT.....	6
5.1 PERFORMANCE REQUIREMENT.....	6
5.2 SAFETY REQUIREMENT	6
5.3 SECURITY REQUIREMENT	6
5.4 SOFTWARE QUALITY ATTRIBUTES	6
Class Diagram	7
Use Case Diagram.....	8
User Manual.....	9
Required programs.....	9
Database Maintenance	9
Running the program	9
First Setup	9
Changing account types	10
Using the Public Library System	10
Loaning a book	11
Librarian Options.....	12

Group info

Dimitri Etienne – 1007284 – Leader

Rayan Biharie - 0970671

Chakir Bouchrouch - 1008730

Requirements Specification

INHOUD

1.	Introduction	4
1.1	Purpose	4
1.2	Project Scope	4
2.	Overall Description	4
2.1	Product Perspective	4
2.2	Operating Environment	5
2.3	Product Features	5
3.	Requirements specification	5
3.1	DESCRIPTION and PRIORITY	5
4.	EXTERNAL INTERFACE REQUIREMENTS	5
4.1	User Interfaces	5
4.2	Hardware Interfaces	6
4.3	Communication Interfaces	6
5.	Non-functional requirement	6
5.1	Performance requirement	6
5.2	Safety requirement	6
5.3	Security requirement	6
5.4	Software Quality Attributes	6

1. INTRODUCTION

1.1 PURPOSE

The purpose of this document is to build a Public Library System (PLS) with which the information can be managed that is needed to run a public library, lending out paper books to customers.

1.2 PROJECT SCOPE

The purpose of the Public Library System (PLS) is to manage the information that is needed to run a public library. The system will consist of a backend (data processing and storage) and a frontend. The frontend can consist of a console based (textual) interface that gives access to all the functions of the system. The whole issue of security and access rights is left out of scope of this assignment.

The library has paper books, a catalog of books, a loan administration, customers, and a librarian (bibliothecaris). New customers can be added to the administration. New books (that means: the identification details of paper book items) can be added to the catalog. Customers can search for books and loan books. The library can be filled with books and customers from data files. All the data in the PLS can be backed up on file, and restored from file.

2. OVERALL DESCRIPTION

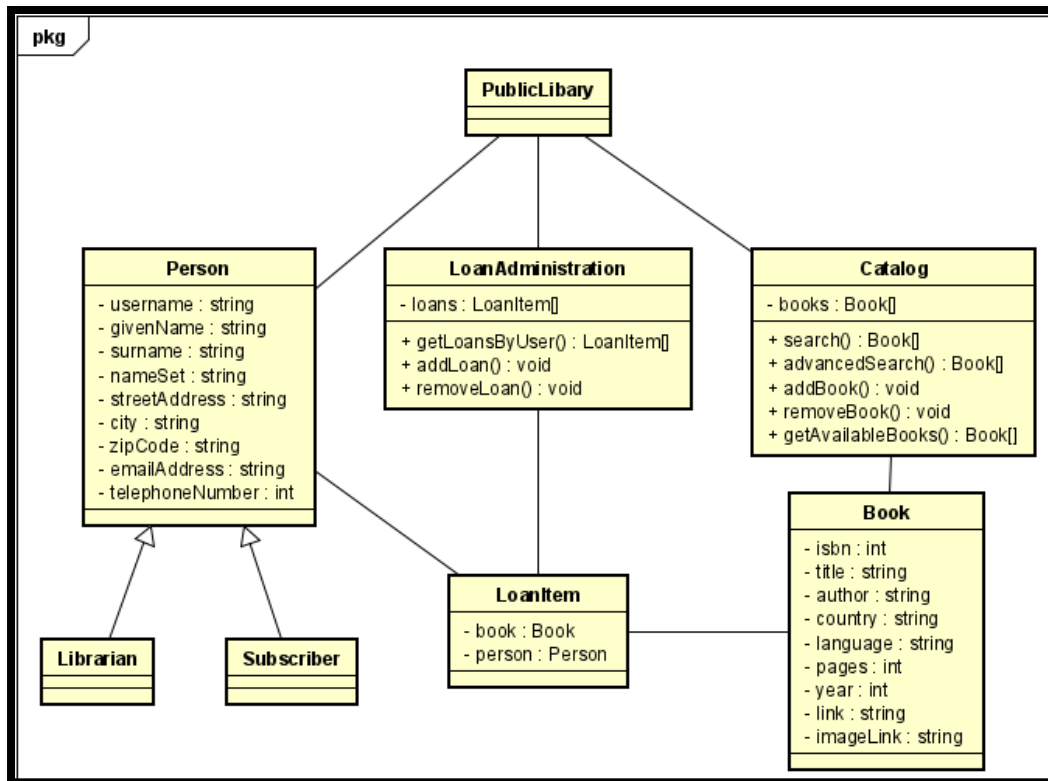
2.1 PRODUCT PERSPECTIVE

The Public Library System (PLS) was developed to store the following information:

- **Librarian details:**
It includes adding a customer to the system, adding book(s), deleting book(s), filling the system with customers from a file of people (.csv files and .json files), add loan(s), remove loan(s)
- **Subscriber details:**
It includes loaning a book and editing his account information
- **Publishing company details:**
It includes adding books to the catalog

2.2 OPERATING ENVIRONMENT

The major features of the Public Library System (PLS) is shown below in a Class Diagram:



2.3 PRODUCT FEATURES

Operating environment for the Public Library System (PLS) is as listed below.

- Client/server system
- Operating system: Windows/Linux
- Database: SQLite 3
- Platform: Python

3. REQUIREMENTS SPECIFICATION

3.1 DESCRIPTION AND PRIORITY

The Public Library System (PLS) maintains information on the catalog, users information and loans. This project has high priority, because with the PLS we cannot lend books, add books to the catalog, et cetera.

4. EXTERNAL INTERFACE REQUIREMENTS

4.1 USER INTERFACES

- Front-end software: Python(Console based)
- Back-end software: SQLite 3

4.2 HARDWARE INTERFACES

- Windows or Linux with Python installed

4.3 COMMUNICATION INTERFACES

This project support computers with Python installed. For this project we are using a simple command interface and the user needs to enter the corresponding key for the action that he or she wants.

5. NON-FUNCTIONAL REQUIREMENT

5.1 PERFORMANCE REQUIREMENT

The Public Library System (PLS) can be used with any modern computers and even old computers, because it is basically a console interface program.

5.2 SAFETY REQUIREMENT

To ensure that no one of the Public Library System (PLS) users will lose any data while using the system the librarian can manually make a backup of the system. There is also a debug menu that is only visible to the librarian.

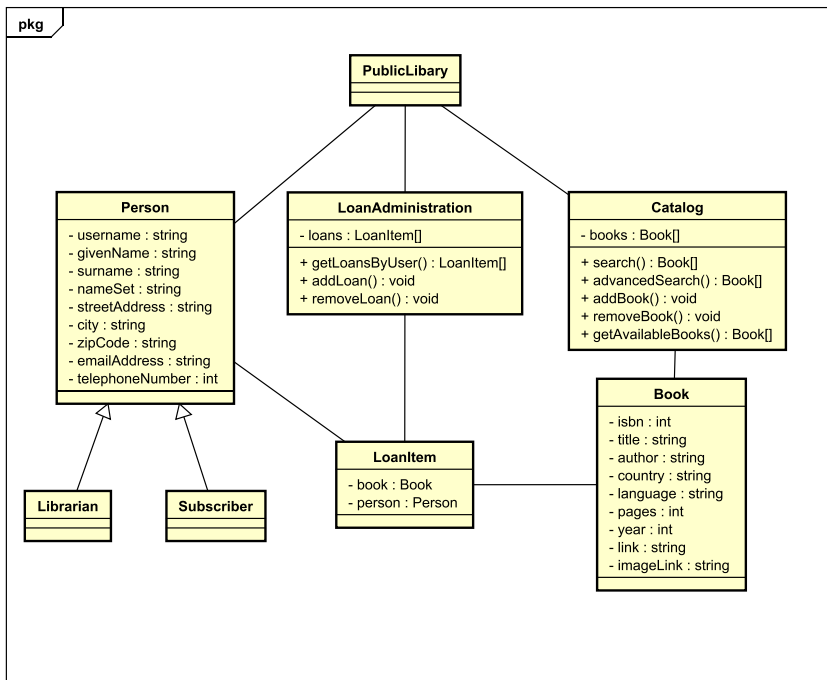
5.3 SECURITY REQUIREMENT

At the moment the Public Library System (PLS) does not have any security requirements.

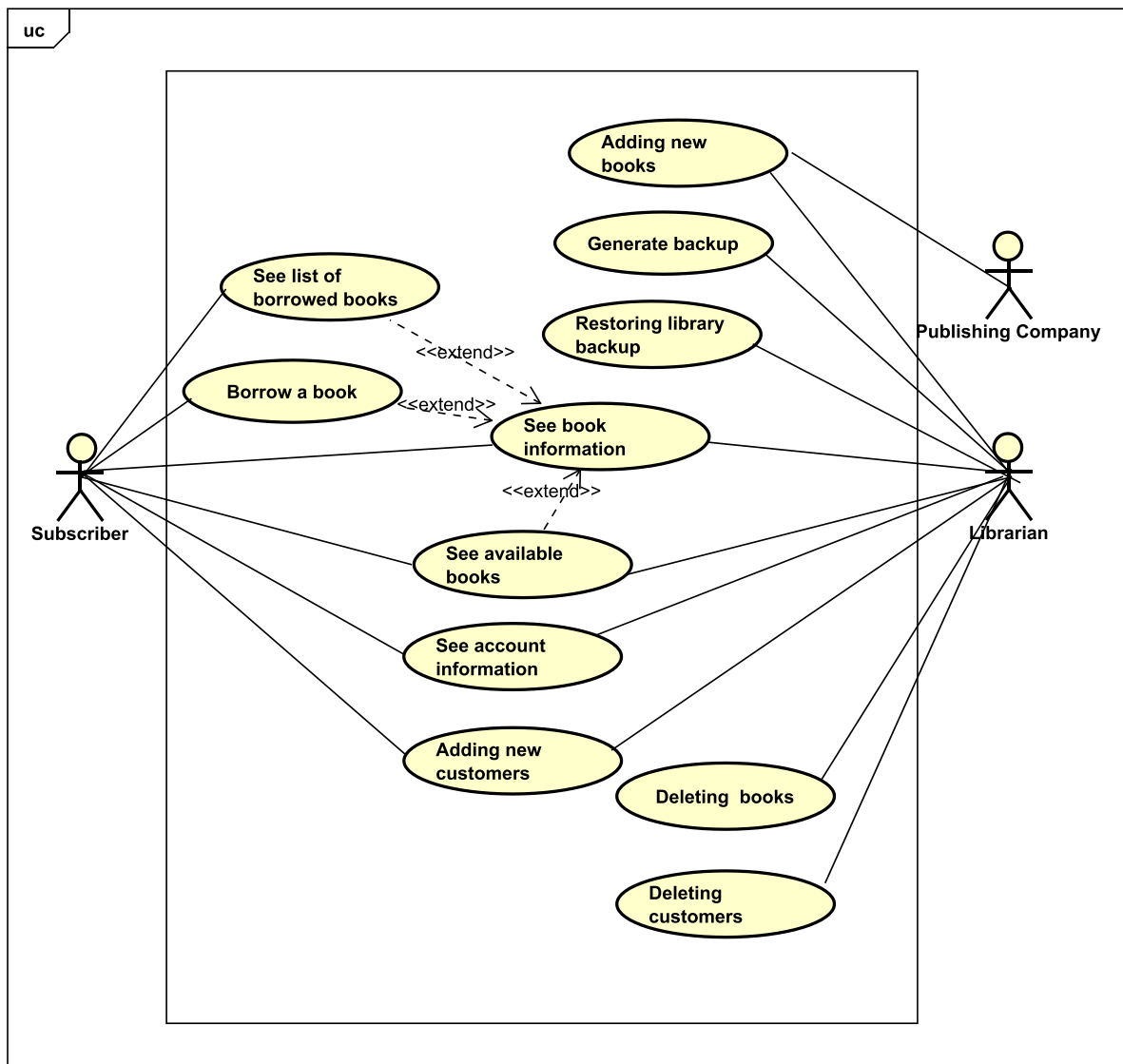
5.4 SOFTWARE QUALITY ATTRIBUTES

The Public Library System (PLS) provides the users with both a simple and advanced features. It's well designed and easy to use interface that it can be used by both experts and typical users.

Class Diagram



Use Case Diagram



User Manual

Required programs

Database Maintenance

For maintaining the database, the use of the free program <https://sqlitebrowser.org/> is recommended. This program is available on Windows, Mac OS, and most Linux distributions.

Running the program

At least python 3.8 has to be installed on the system with the standard library.

First Setup

The included database contains 1 librarian account, 20 user accounts and 100 books.

It is recommended to change the information of the librarian account in the database with the tool recommended for database maintenance.

It is also recommended to change the password of the librarian account before running the system. To do so, follow the following steps:

1. Open the “database.db” file
2. Navigate to the Data Browser (number 1) near the top left corner of the application.
3. In the table dropdown, select the Users table (number 2).
4. Select the password field of the first record, this should be the librarian account (number 3).
5. Change the password from “1234” to anything you like, using the text field near the top right (number 4).
6. When you have entered a new password, click on the apply button (number 5)
7. Make sure to save the database. The program will **NOT** run if you don’t do this. To save the database, press CTRL+S on Windows or Linux and CMD+S on Mac OS.

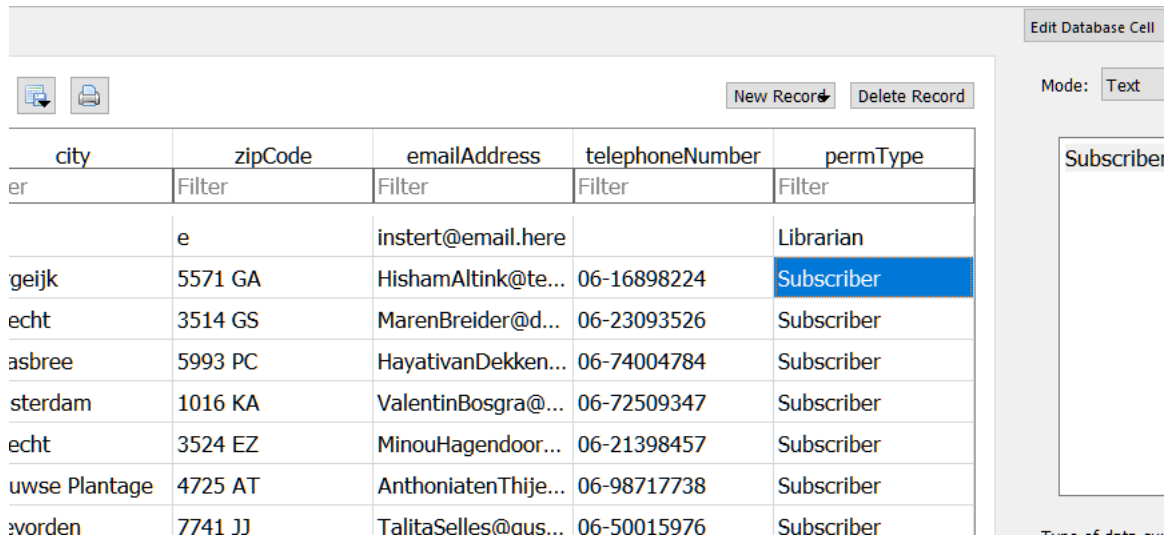
The screenshot shows the SQLite Browser application interface. The 'Database Structure' pane on the left shows the 'Users' table selected. The main table view displays the 'Users' table with columns: id, username, password, givenName, surname, nameSet, streetAddress, and city. The first row (id 1) is the librarian account. The 'password' field for this row is selected, and a new password 'a' is entered in the text field at the top right. The 'Apply' button is highlighted. The 'SQL Log' pane at the bottom shows the SQL commands executed, including a DELETE statement and a PRAGMA statement.

id	username	password	givenName	surname	nameSet	streetAddress	city
1	librarian	a	a	b	Dutch	c	d
2	Reech1950	password	Hisham	Altink	Dutch	Borkelsedijk 53	Bergeljk
3	Othed1997	password	Maren	Breider	Dutch	Van Humboldtstr...	Utrecht
4	Drem1996	password	Hayati	van Dekken	Dutch	Schorweg 101	Maasbree
5	Malame	password	Valentin	Bosgra	Dutch	Bloemgracht 9	Amsterdam
6	Ringdorges	password	Minou	Hagendoorn	Dutch	Antillen 40	Utrecht
7	Ancion	password	Anthonia	ten Thije	Dutch	Kamperfoeliestra...	Wouwse Plantage
8	Proutirepach	password	Talita	Selles	Dutch	Prinestraat 62	Coevorden
9	Didly1970	password	BartholomeÅ¼s	Filippo	Dutch	Helmerslaan 124	Eindhoven
10	Arge1936	password	Andrea	Sijtsma	Dutch	Van Arkelstraat ...	Molenaarsgraaf
11	Lishat	password	Ziad	Talen	Dutch	Ge van Rielstraat...	Borne
12	Worbuld	password	Rodin	Reuser	Dutch	Walstraat 43	Vlissingen
13	Ores1936	password	Enno	Wemmers	Dutch	Draadrusplein 83	s-Hertogenbosch
14	Prands1940	password	Amiet	Voorwinden	Dutch	Birkhoven 36	Vleuten
15	Greanded1959	password	Khadya	John	Dutch	Tongerloseweg 44	Diessen
16	Owittionfe	password	Kate	Joris	Dutch	Tongerloplein 96	Udenhout
17	Whosed	password	Huda	van Woerden	Dutch	Schoondijkseweg 1	Groede
18	Myst1937	password	Pavan	van Wichen	Dutch	Vlamingstraat 96	Zoetermeer
19	Wher1976	password	Bengt	Scheepers	Dutch	Riouwstraat 194	Amsterdam
20	Shrothem1971	password	Å-zgÅ¼l	Overgaauw	Dutch	Adriana Noorland...	Rotterdam
21	Ressoare	password	GÅ¼lseren	Willigenburg	Dutch	Dingspelstraat 28	Gieten

Changing account types

To change the account type. Open the “database.db” file with the tool recommended for database maintenance and go to the users table. (For basic instructions on how to use the recommend tool, see First Setup).

To change a **Subscriber** account to a **Librarian** account or the other way round, change the permType field in the users record accordingly.



city	zipCode	emailAddress	telephoneNumber	permType
er	Filter	Filter	Filter	Filter
	e	instert@email.here		Librarian
geijk	5571 GA	HishamAltink@te...	06-16898224	Subscriber
echt	3514 GS	MarenBreider@d...	06-23093526	Subscriber
asbree	5993 PC	HayativanDekken...	06-74004784	Subscriber
sterdam	1016 KA	ValentinBosgra@...	06-72509347	Subscriber
echt	3524 EZ	MinouHagendoor...	06-21398457	Subscriber
uwse Plantage	4725 AT	AnthoniatenThije...	06-98717738	Subscriber
svorden	7741 JJ	TalitaSelles@aus...	06-50015976	Subscriber

Using the Public Library System

1. Navigate your terminal to the location of the PLS.py file
2. Type “python PLS.py” in your terminal. You will be met with this screen.

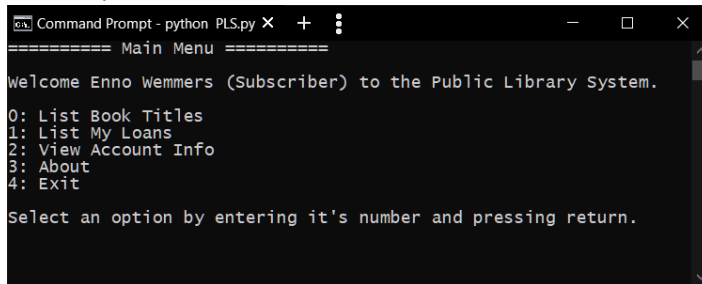
```
Command Prompt - python PLS.py x + :
===== Main Menu =====
Welcome to the Public Library System.
0: Register Account
1: Logon
2: About
3: Exit
Select an option by entering it's number and pressing return.
_
```

3. In this screen you can create a new account, logon with an existing account, view the about page or exit the app. Make your choice by typing the number of the option and press return.
4. Once logged in, follow the instructions on the screen.

Loaning a book

This part of the manual assumes you are logged in as a Subscriber.

1. Select option 0 in the main menu



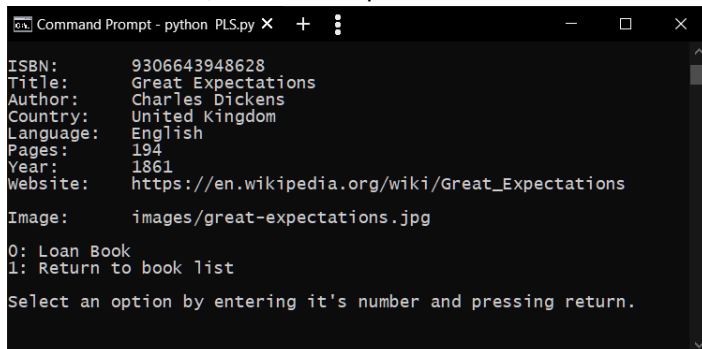
```
Command Prompt - python PLS.py X + :
===== Main Menu =====
Welcome Enno Wemmers (Subscriber) to the Public Library System.
0: List Book Titles
1: List My Loans
2: View Account Info
3: About
4: Exit
Select an option by entering it's number and pressing return.
```

2. Select a book from the list



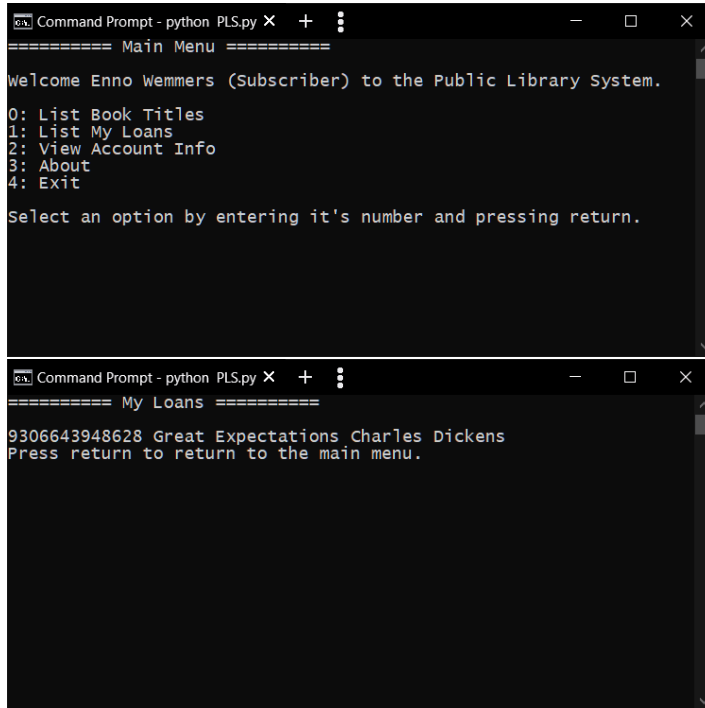
```
Command Prompt - python PLS.py X + :
91: The Golden Notebook - Doris Lessing
92: Great Expectations - Charles Dickens
93: Children of Gebelawi - Naguib Mahfouz
94: Moby-Dick - Herman Melville
95: 1984 - George Orwell
96: Het gouden ei - Tim Krabbé
97: The Life And Opinions of Tristram Shandy - Laurence Sterne
98: Nostromo - Joseph Conrad
99: Gulliver's Travels - Jonathan Swift
100: Things Fall Apart - Chinua Achebe
101: Return to Main Menu
Select an option by entering it's number and pressing return.
```

3. To loan the book, enter 0 and press return



```
Command Prompt - python PLS.py X + :
ISBN: 9306643948628
Title: Great Expectations
Author: Charles Dickens
Country: United Kingdom
Language: English
Pages: 194
Year: 1861
Website: https://en.wikipedia.org/wiki/Great_Expectations
Image: images/great-expectations.jpg
0: Loan Book
1: Return to book list
Select an option by entering it's number and pressing return.
```

4. To view your loans, select 1 in the main menu



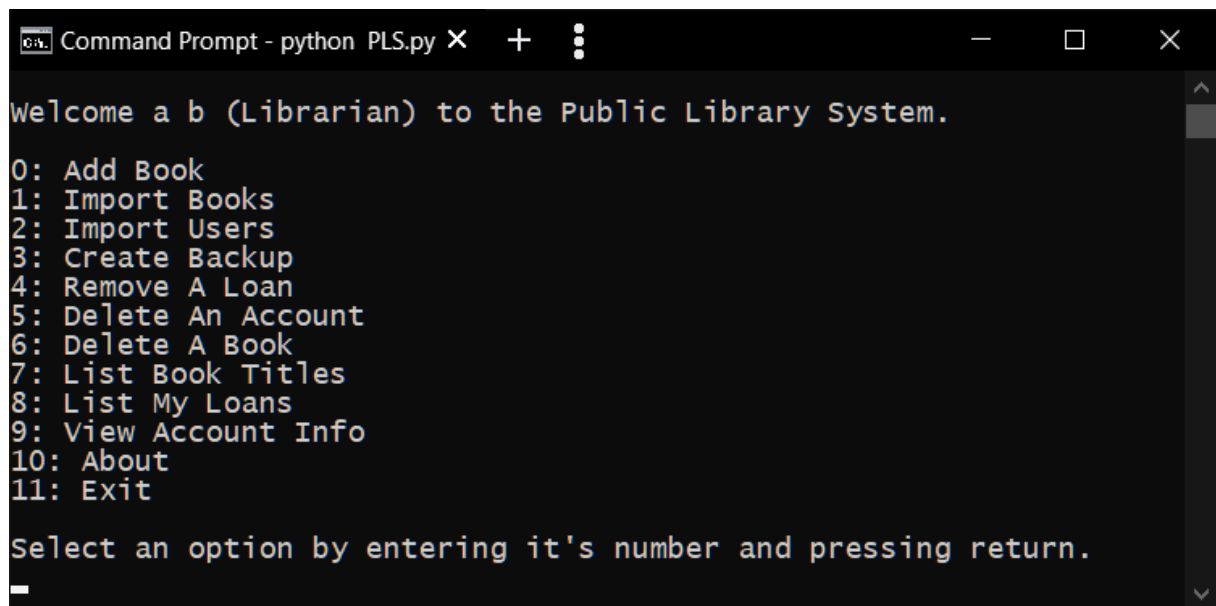
```
Command Prompt - python PLS.py X + ⋮
===== Main Menu =====
Welcome Enno Wemmers (Subscriber) to the Public Library System.
0: List Book Titles
1: List My Loans
2: View Account Info
3: About
4: Exit
Select an option by entering it's number and pressing return.

Command Prompt - python PLS.py X + ⋮
===== My Loans =====
9306643948628 Great Expectations Charles Dickens
Press return to return to the main menu.
```

Librarian Options

This part of the manual assumes you are logged in as a Librarian.

The librarian has too many options to cover, all options contain in program instructions. In there figure below you can see an overview of all the options librarians have.



```
Command Prompt - python PLS.py X + ⋮
Welcome a b (Librarian) to the Public Library System.
0: Add Book
1: Import Books
2: Import Users
3: Create Backup
4: Remove A Loan
5: Delete An Account
6: Delete A Book
7: List Book Titles
8: List My Loans
9: View Account Info
10: About
11: Exit
Select an option by entering it's number and pressing return.
_
```