

Kelly's Library Management System User Manual

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Kelly's Library Management System User Manual

1.0 Introduction

Welcome to Kelly's Library Management System. Our system provides a comprehensive platform for both librarians and students. Librarians can seamlessly search for books by using book ISBN, manage borrowing and return processes, view available books in our library, handle penalties for late returns, and generate detailed monthly reports for comprehensive insights. Meanwhile, students are allowed to search for their desired books by using book ISBN, view available books in our library, and view respective penalties for overdue books. This comprehensive manual is designed to guide users through the functionalities of our system with clarity and precision.

2.0 Getting Started

Ensure you have the necessary files ("books.txt", "students.txt" and "dates.txt") in the same directory as the executable.

```
Dooks.txt

Control Cordelia 5632 2014 4 5 1
Drunk_Text Adele 7852 2011 2 5 3
Forgotten Amanda 4586 2012 1 2 1
Muffin Grace 1459 2010 3 3 0
Teahouse Junius 7856 2012 2 3 1
Undesirable Stephanie 2547 2010 3 4 1
Traded Joanne 4569 2013 1 2 1
Underlying Angel 9521 2013 1 6 5
Prisoner Oliver 4568 2013 2 3 1
November Jasmine 1589 2011 3 3 0
```

Figure 1: books.txt

Column 1: Book's Title.

Column 2: Book's Author.

Column 3: Book's ISBN.

Column 4: Year of Publication.

Column 5: Available Copies of Book.

Column 6: Total Copies of Book.

Column 7: Number of Borrowed Copies.

```
students.txt

472819,Fayth Lee,Postgraduate,fayth

895634,Shannon Liong,Undergraduate,shannon

153742,Kelly Ngu,Undergraduate,kelly

4648209,Natalie Song,Foundation,natalie

5567890,Samantha Tan,Undergraduate,samantha

341256,Eunice Wong,Foundation,eunice

980765,Lydia Ting,Postgraduate,lydia

654321,Elvira Wong,Undergraduate,elvira

123456,Michelle Yeo,Postgraduate,michelle

987654,Amy Kim,Foundation,amy
```

Figure 2: students.txt

Column 1: Student ID.

Column 2: Student's Name.

Column 3: Academic program enrolled in (e.g., Postgraduate, Undergraduate, Foundation).

Column 4: Student's Password (student's first name in "lowercase").

```
🐧 dates.txt
      5632, Samantha Tan, Control, 10-09-2023, 20-09-2023, 28-09-2023
      7852, Natalie Song, Drunk_Text, 15-09-2023, 25-09-2023, (null)
      4586, Elvira Wong, Forgotten, 05-07-2023, 15-07-2023, 25-07-2023
      1459, Fayth Lee, Muffin, 20-08-2023, 30-08-2023, 10-09-2023
      7856, Fayth Lee, Teahouse, 10-09-2023, 20-09-2023, 29-09-2023
      2547, Natalie Song, Undesirable, 15-10-2023, 25-10-2023, 25-12-2023
      4569, Eunice Wong, Traded, 01-06-2023, 11-06-2023, (null)
     1589,Lydia Ting,November,05-09-2023,15-09-2023,30-12-2023
     9521, Kelly Ngu, Underlying, 01-11-2023, 10-11-2023, 26-11-2023
     4568,Amy Kim,Prisoner,10-11-2023,20-11-2023,25-11-2023
      5632, Eunice Wong, Control, 04-06-2023, 11-06-2023, (null)
      1589, Fayth Lee, November, 05-10-2023, 15-10-2023, 04-10-2023
      9521, Samantha Tan, Underlying, 01-11-2023, 10-11-2023, 25-11-2023
      4568,Elvira Wong,Prisoner,10-10-2023,20-10-2023,(null)
      7852, Michelle Yeo, Drunk_Text, 15-10-2023, 25-10-2023, (null)
      1459, Shannon Liong, Muffin, 20-07-2023, 30-07-2023, 11-08-2023
      5632, Natalie Song, Control, 15-09-2023, 25-09-2023, 28-09-2023
     1589, Eunice Wong, November, 01-08-2023, 10-08-2023, 20-08-2023
      7852,Lydia Ting,Drunk Text,10-09-2023,20-09-2023,(null)
      9521, Fayth Lee, Underlying, 20-09-2023, 30-09-2023, 25-09-2023
      4568, Michelle Yeo, Prisoner, 01-06-2023, 10-06-2023, 15-06-2023
      5632, Kelly Ngu, Control, 15-06-2023, 25-06-2023, 28-07-2023
      2547,Elvira Wong,Undesirable,10-10-2023,20-10-2023,25-10-2023
      9521, Natalie Song, Underlying, 20-11-2023, 30-11-2023, (null)
      7852, Kelly Ngu, Drunk_Text, 14-08-2023, 21-08-2023, 20-08-2023
     1459, Samantha Tan, Muffin, 15-09-2023, 25-09-2023, 26-09-2023
      9521, Eunice Wong, Underlying, 20-12-2023, 30-12-2023, (null)
      5632, Shannon Liong, Control, 20-08-2023, 27-08-2023, 28-09-2023
      7856, Shannon Liong, Teahouse, 05-10-2023, 15-10-2023, (null)
     2547, Kelly Ngu, Undesirable, 10-08-2023, 20-08-2023, 25-08-2023
     4569, Kelly Ngu, Traded, 20-08-2023, 30-08-2023, 25-09-2023
      4586, Amy Kim, Forgotten, 01-11-2023, 10-11-2023, (null)
      7852, Eunice Wong, Drunk_Text, 10-06-2023, 17-06-2023, 20-06-2023
      7856, Elvira Wong, Teahouse, 10-07-2023, 20-07-2023, 29-07-2023
      2547, Samantha Tan, Undesirable, 15-08-2023, 25-08-2023, (null)
      9521, Shannon Liong, Underlying, 20-07-2023, 30-07-2023, (null)
```

Figure 3: dates.txt

Column 1: Book's ISBN.

Column 2: Student's Name.

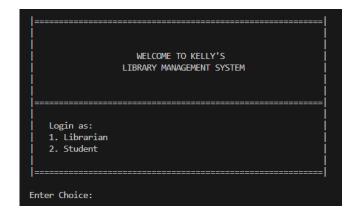
Column 3: Book's Title.

Column 4: Borrow Date of the Book.

Column 5: Due Date of the Book Borrowed.

Column 6: Return Date of the Book Borrowed.

3.0 User Login



3.1 Librarian Login

- Choose **option 1** during login and enter the appropriate credentials when prompted.
- Librarians must enter the **password "librarian"** to access the system.



3.2 Student Login

- Choose **option 2** during login and provide the required information.
- Students should enter their **Student ID** and **associated password** for login.
- Students are provided with unique passwords which can be found on Figure 2 (students.txt file)

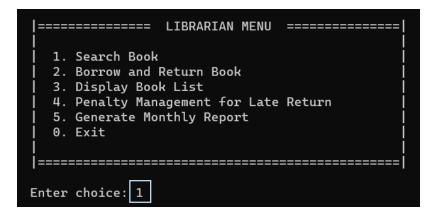


4.0 Librarian Menu

Upon successful login, librarians can choose from various functions such as search books, manage book transactions (Students Borrowing and Returning Books), display book list, penalty management for late returns, and generate monthly reports.

4.1 Search Book:

Step 1: Choose option 1 in the librarian menu.



Step 2: **Enter the ISBN** to search for a book.

```
Enter ISBN to search for a book: 9521
```

Step 3: Detailed information of the book will be showed in tabular format if the book is found.

I	DISPLAYING INFORMATION	OF THE BOOK WITH ISBN	9521				
	 Title	Author	ISBN	Year of Publication	Available Copies	Total Copies	Borrowed Copies
	Underlying	Angel	9521	2013	0	6 6	6

Step 4: Enter 1 to continue searching. Enter 0 to exit search book function.

```
Do you want to continue searching? (1 for Yes / 0 for No):
```

Step 5: (if you choose 1, to continue searching) Enter ISBN again to search for your desired book.

```
Do you want to continue searching? (1 for Yes / 0 for No): 1

Enter ISBN again:
```

Step 5: (if you choose 0, to exit searching function) Enter 1 to continue with the program and return to librarian menu. Enter 0 to exit the program.

```
Do you want to continue searching? (1 for Yes / 0 for No): 0

Do you want to return back to the librarian main menu? (1 for Yes / 0 for No):
```

4.2 Borrow and Return Book:

Overview:

The "Borrow or Return Book" function provides a menu for the librarian to choose between borrowing or returning a book. Librarian can choose to **borrow or return** a book. Corresponding function is executed based on user's choice (1 for borrow, 2 for return). These functions collectively facilitate efficient book transactions, ensuring accurate record-keeping and availability management in the library system.

Step 1: Choose option 2 in the librarian menu to access borrow and return book function.

Step 2: Selects an option (1 for Borrow, 2 for Return)

```
Choose an option:
1. Borrow a book
2. Return a book
Enter your choice (1 or 2):
```

4.2.1 Borrow Book

Overview:

The "Borrow Book" function allows a student to borrow a book from the library. The librarian initiates the process by entering the student's student ID and the ISBN of the book the student wish to borrow.

Step 1: Choose **Option 1** to borrow book.

Step 2: Enter student's ID.

Step 3: Enter book's ISBN. Available copies will be displayed and librarian is prompted to proceed if book is available.

D.	isplaying Selected Boo	k:					
	Title	Author	ISBN	Year of Publication	Available Copies	Total Copies	Borrowed Copies
	Underlying	Angel	9521	2013	1	6	5

This book is AVAILABLE! Number of copies available: 1

Step 4: Enter borrow date and due date (format: "DD-MM-YYYY").

Enter Borrow Date (DD-MM-YYYY): 11-11-2023
Enter Due Date (DD-MM-YYYY): 18-11-2023

Step 5: Messages confirming successful borrowing and updated available copies are displayed.



Updated Book Informatio	on:					
Title	Author	ISBN	Year of Publication	Available Copies	Total Copies	Borrowed Copies
Underlying	Angel	9521	 2013 	 0 		 6

Step 6: Enter 1 to continue with the program and return to librarian menu. Enter 0 to exit the program.

Do you want to return back to the librarian main menu? (1 for Yes / 0 for No):

4.2.2 Return Book

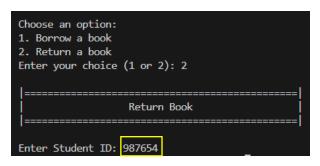
Overview:

The "Return Book" function enables a student to return a book to the library. The librarian initiates the process by entering the student's student ID and the ISBN of the book being returned.

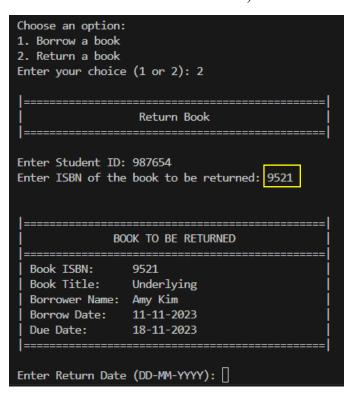
Step 1: Choose Option 2 to return book.

```
Choose an option:
1. Borrow a book
2. Return a book
Enter your choice (1 or 2): 2
```

Step 2: Enters student ID.



Step 3: Enter book's ISBN. (This is also to check whether the student did really borrow/has not returned the book with entered ISBN.)



Step 4: (ONLY for when the student DID REALLY BORROW/HAS NOT RETURNED a book with the entered ISBN) Enter return date (format: "DD-MM-YYYY").

```
Enter Return Date (DD-MM-YYYY): 25-11-2023
                BOOK RETURN RECEIPT
  Borrower Name : Amy Kim
  Book ISBN
                :9521
  Book Title
                :Underlying
  Borrow Date
                :11-11-2023
  Due Date
                :18-11-2023
  Return Date :25-11-2023
  Fine
                :RM 7.00
Amy Kim has returned the book "Underlying" late.
BOOK RETURNED SUCCESSFULLY!!
Do you want to return back to the librarian main menu? (1 for Yes / 0 for No):
```

(in the previous borrow book function, student with student ID 987654 has borrowed a book with ISBN 9521)

```
No matching entry found for return. Please double-check the information.
```

(If no record can be found, meaning student did not borrow the book OR already returned the book, the above error message will be displayed)

Step 5: Enter 1 to continue with the program and return to librarian menu. Enter 0 to exit the program.

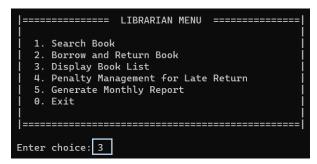
Do you want to return back to the librarian main menu? (1 for Yes / 0 for No):

4.3 Display Book List:

Overview

The display book list function is responsible to present a sorted list of all available books in the library. It utilizes bubble sort algorithm to sort the array of books based on their titles in ascending alphabetical order (from A to Z). The function then prints the book information in tabular format, including details such as title, author, ISBN, year of publication, available copies, total copies, and borrowed copies. This function provides a clear and organized display of book information, making it easy for librarians and students to explore the available books in the library.

Step 1: Choose option 3 in the librarian menu to view and explore the entire list of available books in the library.



Step 2: Entire list of available books in the library is displayed based on books' titles arranged in ascending alphabetical order. (from A to Z)

i _i≕	DISPLAYING LIST OF BOOKS IN ASCENDING ORDER ACCORDING TO BOOKS' TITLES							
Title	Author	ISBN	Year of Publication	Available Copies	Total Copies	Borrowed Copies		
Control	Cordelia	5632	2014	4	5	1		
Drunk_Text	Adele	7852	2011	2	5	3		
Forgotten	Amanda	4586	2012	1	2	1		
Muffin	Grace	1459	2010	3	3	0		
November	Jasmine	1589	2011	3	3	0		
Prisoner	Oliver	4568	2013	2	3	1		
Teahouse	Junius	7856	2012	2	3	1		
Traded	Joanne	4569	2013	1	2	1		
Underlying	Angel	9521	2013	3	6	3		
Undesirable	Stephanie	2547	2010	3	4	1		

Step 3: Enter 1 to continue with the program and return to librarian menu. Enter 0 to exit the program.

Do you want to return back to the librarian main menu? (1 for Yes / 0 for No):

4.4 Penalty Management for Late Return:

Overview

A table displays detailed penalty information for each late return. Librarians have the option to either observe the total fines for all students (choice 1) or view individual total penalty and the corresponding books that are being returned late by the student (choice 2).

Step 1: Choose option 4 in the librarian menu to manage and view penalties for late returns.

Step 2:

- Choose option 1 to view total fines for all students.
- Choose option 2 and enter a specific student ID to view the student's total fine and books that are being returned late by the student.

```
Enter 1 to view total fine for every student.
Enter 2 to find total fine for specific student using student ID.
Enter Choice (1 or 2):
```

Step 3: (ONLY for option 2) Enter Student ID to view a specific student's total fine.

```
Enter 1 to view total fine for every student.
Enter 2 to find total fine for specific student using student ID.
Enter Choice (1 or 2): 2

Enter Student ID: 987654
```

Step 4: Enter 1 to continue with the program and return to librarian menu. Enter 0 to exit the program.

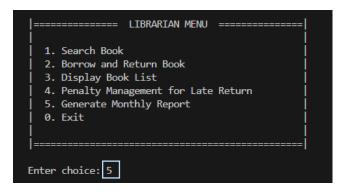
```
Do you want to return back to the librarian main menu? (1 for Yes / 0 for No):
```

4.5 Generate Monthly Report:

Overview

To generate detailed monthly reports to track the library's performance and usage for a specific month in the year 2023 (from June 2023 until December 2023 ONLY). A table displays information for number of books borrowed, number of books returned, number of books to be returned and total fines collected within a specific month.

Step 1: Choose **option 5** in the librarian menu.



Step 2:

- Enter the desired month when prompted.
- Enter the **complete name of the month** with the **first letter capitalized**, for instance, (June, July, August, September, October, November, and December)

```
Monthly report is available from June until December 2023 ONLY

Enter the complete name of the month with the first letter capitalized, for instance, (June, July, or August):

June
```

Step 3: Enter 1 to continue generate a report for another month. Enter 0 to exit the generate monthly report function.

```
Do you want to generate a report for another month? (1 for Yes / 0 for No):
```

Step 4: (if you choose 1, to generate a monthly report again) Enter the name of your desired month again to generate a monthly report.

```
Do you want to generate a report for another month? (1 for Yes / 0 for No): 1

Monthly report is available from June until December 2023 ONLY

Enter the complete name of the month with the first letter capitalized, for instance, (June, July, or August) :
```

Step 5: (if you choose 0, to exit generate monthly report function) Enter 1 to continue with library management system and return to the librarian menu. Enter 0 to exit the program.

```
Do you want to generate a report for another month? (1 for Yes / 0 for No): 0

Do you want to return back to the librarian main menu? (1 for Yes / 0 for No):
```

5.0 Student Menu

Upon successful login, students can search for books, view the book list, and find their respective total penalty for late return of books.

5.1 Search Book:

Step 1: Choose option 1 in the student menu.

Step 2: Enter the ISBN to search for a book.

```
Enter ISBN to search for a book: 9521
```

Step 3: Detailed information of the book will be showed in tabular format if the book is found.

ISPLAYING INFORMATION OF THE BOOK WITH ISBN 9521							
 Title	 Author 	 ISBN	Year of Publication	 Available Copies	Total Copies	Borrowed Copies	
Underlying	 Angel 	 9521 	2013	3	6	3	

Step 4: Enter 1 to continue searching. Enter 0 to exit search book function.

```
Do you want to continue searching? (1 for Yes / 0 for No):
```

Step 5: (if you choose 1, to continue searching) Enter ISBN again to search for your desired book.

```
Do you want to continue searching? (1 for Yes / 0 for No): 1

Enter ISBN again:
```

Step 5: (if you choose 0, to exit searching function) Enter 1 to continue with library management system and return to student menu. Enter 0 to exit the program.

```
Do you want to continue searching? (1 for Yes / 0 for No): 0

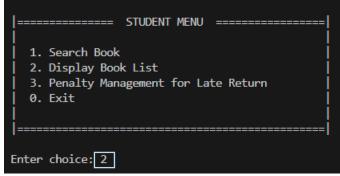
Do you want to return back to the student main menu? (1 for Yes / 0 for No):
```

5.2 Display Book List:

Overview

The display book list function is responsible to present a sorted list of all available books in the library. It utilizes bubble sort algorithm to sort the array of books based on their titles in ascending alphabetical order (from A to Z). The function then prints the book information in tabular format, including details such as title, author, ISBN, year of publication, available copies, total copies, and borrowed copies. This function provides a clear and organized display of book information, making it easy for librarians and students to explore the available books in the library.

Step 1: Choose option 2 in the student menu to view and explore the entire list of available books in the library.



Step 2: Entire list of available books in the library is displayed based on books' titles in ascending alphabetical order (from A to Z).

	DISPLAYING LIST OF BOOKS IN ASCENDING ORDER ACCORDING TO BOOKS' TITLES							
=						·======		
 Title		ISBN	Year of Publication	Available Copies	Total Copies	Borrowed Copies		
Control	Cordelia	5632	2014	4	5	1		
Drunk_Text	Adele	7852	2011	2	5	3		
Forgotten	Amanda	4586	2012	1	2	1		
Muffin	Grace	1459	2010	3	3	0		
November	Jasmine	1589	2011	3	3	0		
Prisoner	Oliver	4568	2013	2	3	1		
Teahouse	Junius	7856	2012	2	3	1		
Traded	Joanne	4569	2013	1	2	1		
Underlying	Angel	9521	2013	3	6	3		
Undesirable	Stephanie	2547	2010	3	4	1		

Step 3: Enter 1 to continue with the program and return to student menu. Enter 0 to exit the program.

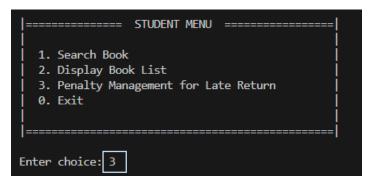
Do you want to return back to the student main menu? (1 for Yes / 0 for No):

5.3 Penalty Management for Late Return:

Overview

Students do not have 2 options like librarians do for penalty management for late return (to either observe the total fines for all students or view individual penalty). Students are required to enter their student ID to view their total fine to be paid. The corresponding books that are being returned late by the student will also be displayed.

Step 1: Choose option 3 in the student menu to view respective penalties for late returns.



Step 2: Enter Student ID to view total fine.

```
Enter your Student ID to view your total fine: 987654
```

Step 3: Enter 1 to continue with the program and return to student menu. Enter 0 to exit the program.

```
Do you want to return back to the student main menu? (1 for Yes / 0 for No):
```

Note: If you have any enquiries regarding Kelly's Library Management System user manual, do not hesitate to email me at ecykn2@nottingham.edu.my. Thank you very much for your time.