

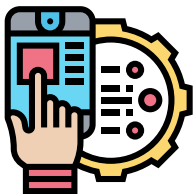


## Library Management Application



### Database:

1. User Data
2. Borrower Data
3. Books Data



### User Application

#### App.py

1. User.py
2. Book\_Library.py



### Owner Application

#### main.py

1. Book.py
2. Borrower.py
3. owner\_services.py
4. User.py

# Library Management System

## Project Description:

The Library Management Application is designed to streamline the management of library resources, including user data, borrower records, and book inventory. The application features two main interfaces: one for users and one for library owners, each tailored to meet their specific needs.

## Components

The application is structured into two primary modules: User Application and Owner Application. Each module consists of multiple Python files that handle different functionalities related to library management.

### User Application

- **App.py:** The main entry point for the user interface, facilitating interaction between users and the library system.
- **User.py:** Manages user-related functionalities, including user registration, profile management, and assigning id.
- **Book\_Library.py:** Handles operations related to book searches, viewing book details, and checking book availability, borrow books.

### Owner Application

- **main.py:** The main entry point for the owner interface, managing the overall functionality of the owner application.
- **owner\_services.py:** Provides administrative functionalities for accessing other owner services like user data, library data etc.
- **Book.py:** Manages book-related data, including adding, updating, and maintaining book records from the library inventory.
- **Borrower.py:** Tracks borrower information, including their borrowing history, due dates, to know about overdue books.
- **User.py:** Manages owner-specific user functionalities, including maintaining library user directory, details total books borrowed.

**Code Link:** <https://github.com/koushuuu/Library-Management-system>

## Output:

### User Application:

```
Windows PowerShell (x86)
d----- 03-10-2024 21:43 Data
d----- 03-10-2024 22:30 Owner
d----- 04-10-2024 17:00 User

PS C:\Users\HP\Documents\Library Application> cd .\User\
PS C:\Users\HP\Documents\Library Application\User> ls

Directory: C:\Users\HP\Documents\Library Application\User

Mode                LastWriteTime         Length Name
----                -
d----- 04-10-2024 08:51          1949 __pycache__
-a----- 04-10-2024 17:00          4535 app.py
-a----- 04-10-2024 17:00          2891 Book_Library.py
-a----- 04-10-2024 17:00          2891 User.py

PS C:\Users\HP\Documents\Library Application\User> python app.py
Welcome to the Library Management System!
Error: The file users.csv was not found. Creating a new one.
Error: The file Books_data_.csv was not found.
Users and books loaded.
Do you want to register as a new user? (yes/no): █
```

### *Running Python app.py file*

```
Users loaded successfully from CSV!
Books loaded successfully from CSV!
Users and books loaded.
Do you want to register as a new user? (yes/no): yes
Enter Your Name: Pavan
Enter email id: pavanvignesh001@gmail.com
Enter mobile number: 9898989878
Enter City: Hyderabad
Registered successfully! Your UID number is: 23

===== Library Menu =====
1. Display Books Table
2. Search a Book by Title or Author
3. Borrow a Book
4. Exit
Enter your choice: █
```

### *User Registration and User Id Assignment*

```
===== Library Menu =====
1. Display Books Table
2. Search a Book by Title or Author
3. Borrow a Book
4. Exit
Enter your choice: 1

===== Books Available =====
ID      Title                      Author          Category        Status      Stock Count
-----
1       Steve Jobs                     Walter Issacson  Biography       available   5
-----
2       Discovery of India              Jawaharlal Nehru History         available   6
-----
3       My Experiments with Truth       Mahatma Gandhi  Autobiography   available   6
-----
4       Object Oriented Programming with C++ E Balagurusamy Education       available   6
-----
5       Thinking with type              Ellen Lupton     Arts            available   6
-----
```

## *All Books Display*

```
Books loaded successfully from CSV
Users and books loaded.
Do you want to register as a new user? (yes/no): no
Enter your UID number: 20

===== Library Menu =====
1. Display Books Table
2. Search a Book by Title or Author
3. Borrow a Book
4. Exit
Enter your choice: 2
Enter the title or author to search: 1984

Search Results for '1984':
ID: 45, Title: '1984', Author: George Orwell, Category: Story, Status: available, Stock Count: 8

===== Library Menu =====
1. Display Books Table
2. Search a Book by Title or Author
3. Borrow a Book
4. Exit
Enter your choice: █
```

## *Search Books by Name*

```
Enter your choice: 2
Enter the title or author to search: 1984

Search Results for '1984':
ID: 45, Title: '1984', Author: George Orwell, Category: Story, Status: available, Stock Count: 8

===== Library Menu =====
1. Display Books Table
2. Search a Book by Title or Author
3. Borrow a Book
4. Exit
Enter your choice: 3
Enter the title of the book you want to borrow: 1984
User data updated successfully.
Borrower record updated successfully!

Confirmation: You have successfully borrowed '1984'.
Due date to return the book: 2024-10-18

===== Library Menu =====
1. Display Books Table
2. Search a Book by Title or Author
3. Borrow a Book
4. Exit
Enter your choice:
```

## *Book borrowing*

## *Everything updates in CSV Database*

Code Link: <https://github.com/koushuuu/Library-Management-system>

## Owner Application

```
Windows PowerShell (x86)
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\HP> cd .\Documents\
PS C:\Users\HP\Documents> cd '..\Library Management Application\'
PS C:\Users\HP\Documents\Library Management Application> cd ..\Owner\
PS C:\Users\HP\Documents\Library Management Application\Owner> python .\main.py
Welcome to the Library Owner Application!
Please select the service you need:
1. To know about book stock and the types of books available.
2. To display user data.
3. To know about current borrowers' data.
4. To exit.
Enter the number of the service you'd like to access (1/2/3/4): 1
You chose to know about book stock and types of books.
Error: The file 'C:\Users\HP\Documents\Library Application\Data\Books_data_.csv' does not exist.
Please ensure the file is in the correct location and try again.
PS C:\Users\HP\Documents\Library Management Application\Owner> python .\main.py
Welcome to the Library Owner Application!
Please select the service you need:
1. To know about book stock and the types of books available.
2. To display user data.
3. To know about current borrowers' data.
4. To exit.
Enter the number of the service you'd like to access (1/2/3/4):
```

## Entry Point of Application

```
5. Exit
Enter your choice (1/2/3/4/5): 1
Available genres: ['Biography' 'History' 'Autobiography' 'Education' 'Arts' 'Photography'
'Economics' 'Management' 'Law' 'Health' 'Fiction' 'Philosophical fiction'
'Personal Development' 'Business' 'High Fantasy' 'SPACE' 'Story'
'Philosophy' 'Historical novel' 'Historical fiction' 'Philosophical']
Enter the genre you want to view: Health
Books under genre 'Health':
+-----+-----+-----+-----+-----+-----+-----+
| | Unnamed: 0 | bid | title | author | category | status | Stock Count |
+-----+-----+-----+-----+-----+-----+-----+
| 9 | 9.0 | 10 | Eat to Live | Joel Fuhrman | Health | available | 6 |
+-----+-----+-----+-----+-----+-----+-----+

Library Management System
1. View books by genre
2. View books by name
3. View all books
4. Add a new book
5. Exit
Enter your choice (1/2/3/4/5):
```

## View Books by Genre

```
5. Exit
Enter your choice (1/2/3/4/5): 2
Enter the name you want to search for: 1984
+-----+-----+-----+-----+-----+-----+-----+
| | Unnamed: 0 | bid | title | author | category | status | Stock Count |
+-----+-----+-----+-----+-----+-----+-----+
| 44 | 44.0 | 45 | 1984 | George Orwell | Story | available | 8 |
+-----+-----+-----+-----+-----+-----+-----+

Library Management System
1. View books by genre
2. View books by name
3. View all books
4. Add a new book
5. Exit
Enter your choice (1/2/3/4/5):
```

## View Books by Name

```
2. View books by name
3. View all books
4. Add a new book
5. Exit
Enter your choice (1/2/3/4/5): 3
All books in the library:
+-----+-----+-----+-----+-----+-----+
| | Unnamed: 0 | bid | title | author | category | status | Stock Count |
+-----+-----+-----+-----+-----+-----+
| 0 | 0.0 | 1 | Steve Jobs | Walter Issacson | Biography | available | 5 |
| 1 | 1.0 | 2 | Discovery of India | Jawaharlal Nehru | History | available | 6 |
| 2 | 2.0 | 3 | My Experiments with Truth | Mahatma Gandhi | Autobiography | available | 6 |
| 3 | 3.0 | 4 | Object Oriented Programming with C++ | E Balagurusamy | Education | available | 6 |
| 4 | 4.0 | 5 | Thinking with type | Ellen Lupton | Arts | available | 6 |
| 5 | 5.0 | 6 | The Photographer's | Lindsay Adler | Photography | available | 6 |
| 6 | 6.0 | 7 | Think and Grow | Napoleon Hill | Economics | available | 6 |
| 7 | 7.0 | 8 | The Fifth Discipline : The Art | Peter M.Senge | Management | available | 6 |
| 8 | 8.0 | 9 | A Theory of Justice | John Rawls | Law | available | 6 |
| 9 | 9.0 | 10 | Eat to Live | Joel Fuhrman | Health | available | 6 |
| 10 | 10.0 | 11 | City of Heavenly Fire | Cassandra Clare | Fiction | available | 6 |
| 11 | 11.0 | 12 | Da Vinci Code | Dan Brown | Fiction | available | 6 |
| 12 | 12.0 | 13 | War and Peace | Leo Tolstoy | Philosophical fiction | available | 6 |
| 13 | 13.0 | 14 | Python For All | John Shovic | Education | available | 6 |
| 14 | 14.0 | 15 | Automate The Boring Stuff With Python | Al Sweigart | Education | available | 6 |
| 15 | 15.0 | 16 | Wings Of Fire | APJ Abdul Kalam | Autobiography | available | 6 |
| 16 | 16.0 | 17 | Ikigai | Hector Garcia | Personal Development | available | 6 |
| 17 | 17.0 | 18 | Who Will Cry When You Will Die | Robin Sharma | Personal Development | available | 6 |
| 18 | 18.0 | 19 | Rich Dad Poor Dad | Robert T. Kiyosaki | Business | available | 8 |
| 19 | 19.0 | 20 | Immortals of Meluha | Amish Tirthathi | High Fantasy | available | 8 |
| 20 | 20.0 | 21 | A Brief History Of Time | Stephen Hawking | SPACE | available | 8 |
| 21 | 21.0 | 22 | I Know Why The Cage Bird Sings | Maya Anguelo | Story | available | 8 |
| 22 | 22.0 | 23 | Lord Of Flies | William Golding | Fiction | available | 8 |
| 23 | 23.0 | 24 | Leana Dune | R. D Blackmore | Fiction | available | 8 |
| 24 | 24.0 | 25 | Jamacia Inn | Daphne | Fiction | available | 8 |
| 25 | 25.0 | 26 | Kidnapped | Robert Louis | Fiction | available | 8 |
| 26 | 26.0 | 27 | Treasure Island | Robert Louis | Fiction | available | 8 |
| 27 | 27.0 | 28 | The Call Of Wild | Jack London | Fiction | available | 8 |
| 28 | 28.0 | 29 | Charlottes Web | E. B White | Fiction | available | 8 |
| 29 | 29.0 | 30 | The Wind In Willows | Kenneth Grahame | Fiction | available | 8 |
| 30 | 30.0 | 31 | Being and Time | Martin Heidegger | Philosophy | available | 8 |
| 31 | 31.0 | 32 | The Republic | Rocha Pereira | Philosophy | available | 8 |
```

```
+-----+-----+-----+-----+-----+-----+
| 61 | nan | 62 | Tuesdays With Morrie | Mitch Albom | Philosophical Fiction |
| 62 | nan | 62 | Ikigai | Francesc Miralles | Philosophical |
+-----+-----+-----+-----+-----+-----+

Library Management System
1. View books by genre
2. View books by name
3. View all books
4. Add a new book
5. Exit
Enter your choice (1/2/3/4/5): 4
Enter Book ID: 63
Enter Book Title: Engineering Mathematics
Enter Author Name: B.S Grewal
Enter Book Category: Mathematics
Enter Book Status (available/unavailable): available
Enter Stock Count: 8
Book 'Engineering Mathematics' added successfully!

Library Management System
1. View books by genre
2. View books by name
3. View all books
4. Add a new book
5. Exit
Enter your choice (1/2/3/4/5): █
```

```

6 7 Zachary Stevens dennis@example.org 278-123-8978 West Morgan Hayesburgh 0 Python For All
7 8 Kyle Sutton james22@example.net 001-372-865-5410 West Abigailborough 1 Lord Of Files
8 9 Karen Santana rhodesjennifer@example.org (484)601-9640x24852 Franktown 9 NaI
9 10 Thomas Garner frazierchristopher@example.com (822)255-2546x0036 Andreaberg 0 NaI
10 11 Kevin Foster kevincarter@example.org 3596419925 North Jesse 11 NaI
11 12 Joseph Jennings thickman@example.com 001-623-598-7874x4470 Griffiththton 0 NaI
12 13 Geoffrey Stewart chasedawson@example.com 001-594-781-5757x105 New Thomas 13 NaI
13 14 Andrea Marshall shannonwhite@example.org 001-627-770-6018x9892 Shawnside 14 NaI
14 15 Kyle Duffy david52@example.com 5095867643 North John 15 NaI
15 16 David Wells bfernandez@example.net 704-656-1193 North Michelle 16 NaI
16 17 Diana Bautista jessica79@example.org 001-836-769-5192x4573 Patriciamouth 5 Kidnapped
17 19 Denise Butler chuffman@example.org 001-576-901-2563 East Stephaniestad 19 NaI
18 20 Jessica Jones daniellehancock@example.net 6302648559 South Adam 2 1984
19 21 Pavan pavanvignesh001@gmail.com 6302648559 Visakhapatnam 0 NaI
20 22 Koushik koushik123@gmail.com 9899968999 Warangal 0 NaI
21 23 Pavan pavanvignesh001@gmail.com 9898989878 Hyderabad 0 NaI

User Management System
1. Display all the users data
2. Search user data by name
3. delete any user data
4. Exit
Enter your choice (1/2/3/4): 2
Enter the name you want to search for: David Wells
No users found with the given name.

User Management System
1. Display all the users data
2. Search user data by name
3. delete any user data
4. Exit
Enter your choice (1/2/3/4): 2
Enter the name you want to search for: David
uid name email mobile city total_books_borrowed current_issued_book
15 16 David Wells bfernandez@example.net 704-656-1193 North Michelle 16 NaI

User Management System
1. Display all the users data
2. Search user data by name
3. delete any user data
4. Exit
Enter your choice (1/2/3/4): 2

```

```

1. To know about book stock and the types of books available.
2. To display user data.
3. To know about current borrowers' data.
4. To exit.
Enter the number of the service you'd like to access (1/2/3/4): 3
You chose to know about borrowers' data.
Loaded 8 borrowers.

Borrower Management System
1. Display all borrowers
2. Search borrower by name
3. Check due dates of Borrowers
4. Delete any user data
5. Exit
Enter your choice (1/2/3/4/5): 1
Unamed: 0 uid name city books_borrowed borrow_dates return_dates
0 0 6 Paige Klein West Morgan Python For All 11-09-2024 2024-10-01
1 1 7 Zachary Stevens Hayesburgh Python For All 12-09-2024 2024-10-02
2 2 8 Kyle Sutton West Abigailborough Python For All 13-09-2024 2024-10-03
3 4 11 Kevin Foster North Jesse Python For All 15-09-2024 2024-10-05
4 5 12 Joseph Jennings Griffiththton Python For All 16-09-2024 2024-10-06
5 6 13 Geoffrey Stewart New Thomas Python For All 17-09-2024 2024-10-07
6 7 14 Andrea Marshall Shawnside Python For All 18-09-2024 2024-10-08
7 8 15 Kyle Duffy North John Python For All 19-09-2024 2024-10-09

Borrower Management System
1. Display all borrowers
2. Search borrower by name
3. Check due dates of Borrowers
4. Delete any user data
5. Exit
Enter your choice (1/2/3/4/5): 3
Borrowers with near due dates:
Paige Klein (ID: 6) - Due: 10-01-2024
Zachary Stevens (ID: 7) - Due: 10-02-2024
Kyle Sutton (ID: 8) - Due: 10-03-2024
Kevin Foster (ID: 11) - Due: 10-05-2024
Joseph Jennings (ID: 12) - Due: 10-06-2024
Geoffrey Stewart (ID: 13) - Due: 10-07-2024
Andrea Marshall (ID: 14) - Due: 10-08-2024
Kyle Duffy (ID: 15) - Due: 10-09-2024

Borrower Management System
1. Display all borrowers
2. Search borrower by name
3. Check due dates of Borrowers
4. Delete any user data
5. Exit
Enter your choice (1/2/3/4/5):

```

Outputs from various operations done.

Books_data - Microsoft Excel															
<div> <div>Home</div> <div>Insert</div> <div>Page Layout</div> <div>Formulas</div> <div>Data</div> <div>Review</div> <div>View</div> </div>															
<div> <div>Clipboard</div> <div>Font</div> <div>Alignment</div> <div>Number</div> <div>Conditional Formatting</div> <div>Format as Table</div> <div>Styles</div> <div>Cells</div> <div>Editing</div> </div>															
M63															
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
34	32	33 Critique For Pure Reason	Paul Guyer	Philosophy available		8									
35	33	34 The Prince	Rufus Godwin	Philosophy available		8									
36	34	35 Ethics	Stuart Hampshire	Philosophy available		8									
37	35	36 Long Walk To Freedom	Nelson Mandela	Autobiogr available		8									
38	36	37 The Dairy Of Young Girl	Anne Frank	Autobiogr available		8									
39	37	38 Mark Twain	Mark Twain	Autobiogr available		8									
40	38	39 Mein Kampf	Adolf Hitler	Autobiogr available		8									
41	39	40 Freakonomics	Steveb D.Levit	Economics available		8									
42	40	41 Thinking Fast and Slow	Daniel Kahneman	Economics available		8									
43	41	42 Tell You About Capitalism	HA-Joon Chang	Economics available		8									
44	42	43 Animal Spirits	Akerlof and Shiller	Economics available		8									
45	43	44 The Black Swan	Nassim Nicholas Taleb	Economics available		8									
46	44	45	1984 George Orwell	Story available		8									
47	45	46 The Lord Of Wings	J.R.R.Tolken	Story available		8									
48	46	47 Kite Runner	Khaled Hosseini	Story available		5									
49	47	48 Harry Potter	J.K.Rowling	Story available		5									
50	48	49 The Book Thief	Markus Zusak	Story available		5									
51	49	50 History Of 20th Century	Martin Gilbert	History available		5									
52	50	51 Guns,Germes,and Steel	Jared Daimond	History available		5									
53	51	52 A World It Only by Fire	William Manchestar	History available		5									
54	52	53 The Crusades	Thomas Asbridge	History available		5									
55	53	54 Over The Edge Of The World	Laurence	History available		5									
56	54	55 A Beautiful Mind	Sylvia Nasar	Biography available		5									
57	55	56 The Enigma	Andrew Hodges	Biography available		5									
58	56	57 Alexander Hamilton	Ron Chernow	Biography available		5									
59	57	58 Barracoon	Zora Neale Hurston	Biography available		5									
60	58	59 CHURCHILL : A Life	Martin Gilbert	Biography available		5									
61	59	60 A Tale of Two Cities	Charles Dickens	Historical available		5									
62	60	61 Les Misérables	Victor Hugo	Historical available		5									
63	0	62 Tuesdays with Morrie	Mitch Albom	Philosophi available		10									
64		62 Ikigai	Francesc Miralles	Philosophi available		10									
65		63 Engineering Mathematics	B.S Grewal	Mathemat available		8									

## Books\_data.csv File

borrowers - Microsoft Excel										
<div> <div>Home</div> <div>Insert</div> <div>Page Layout</div> <div>Formulas</div> <div>Data</div> <div>Review</div> <div>View</div> </div>										
<div> <div>Clipboard</div> <div>Font</div> <div>Alignment</div> <div>Number</div> <div>Conditional Formatting</div> <div>Format as Table</div> <div>Styles</div> <div>Cells</div> <div>Editing</div> </div>										
D16										
A	B	C	D	E	F	G	H	I	J	K
1	uid	name	city	books_borrowed	borrow_dates	return_dates				
2	0	6 Paige Klein	West Morgan	Python For All	11-09-2024	01-10-2024				
3	1	7 Zachary Stevens	Hayesburgh	Python For All	12-09-2024	02-10-2024				
4	2	8 Kyle Sutton	West Abigailborough	Python For All	13-09-2024	03-10-2024				
5	4	11 Kevin Foster	North Jesse	Python For All	15-09-2024	05-10-2024				
6	5	12 Joseph Jennings	Griffithton	Python For All	16-09-2024	06-10-2024				
7	6	13 Geoffrey Stewart	New Thomas	Python For All	17-09-2024	07-10-2024				
8	7	14 Andrea Marshall	Shawnside	Python For All	18-09-2024	08-10-2024				
9	8	15 Kyle Duffy	North John	Python For All	19-09-2024	09-10-2024				
10										
11										
12										

## Borrowers.csv

<div> <div>Home</div> <div>Insert</div> <div>Page Layout</div> <div>Formulas</div> <div>Data</div> <div>Review</div> <div>View</div> </div>															
<div> <div>Clipboard</div> <div>Font</div> <div>Alignment</div> <div>Number</div> <div>Conditional Formatting</div> <div>Format as Table</div> <div>Styles</div> <div>Cells</div> <div>Editing</div> </div>															
J9															
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	uid	name	email	mobile	city	total_bool	current_issued_book								
2	1	Brent Wyatt	wgomez@example.com	(809)487-4399	West Cathyhaven	1	1984								
3	2	Michael Webb	eric00@example.org	864-756-0467x3174	Lake Stanleyburgh	2									
4	3	Helen Scott	barbara19@example.org	661-543-0181	Rebeccaville	3	1984								
5	4	Linda Smith	snyderkathleen@example.net	(313)579-6620	North Elizabeth	4									
6	5	Brenda Green	reyeschristopher@example.net	001-406-828-4513x1374	Cooperhaven	5									
7	6	Paige Klein	stephen77@example.org	278-216-6576	West Morgan	6	Python For All								
8	7	Zachary Steven	dennisharmon@example.org	860.327.4841	Hayesburgh	0									
9	8	Kyle Sutton	james22@example.net	001-372-865-5410	West Abigailborough	1	Lord Of Files								
10	9	Karen Santana	rhodesjennifer@example.org	(484)601-9640x24852	Franktown	9									
11	10	Thomas Garner	frazierchristopher@example.com	(822)255-2546x0036	Andreaberg	0									
12	11	Kevin Foster	kevincarter@example.org	3596419925	North Jesse	11									
13	12	Joseph Jennings	thickman@example.com	001-623-598-7874x4470	Griffithton	0									
14	13	Geoffrey Stevi	chasedawson@example.com	001-594-781-5757x105	New Thomas	13									
15	14	Andrea Marsh	sharmonwhite@example.com	001-627-770-6018x9892	Shawnside	14									
16	15	Kyle Duffy	davidh52@example.com	5095867643	North John	15									
17	16	David Wells	bfernandez@example.net	704-656-1193	North Michelle	16									
18	17	Diana Bautista	jessica79@example.org	001-836-769-5192x4573	Patriciamouth	5	Kidnapped								
19	19	Denise Butler	chuffman@example.org	001-576-901-2563	East Stephaniestad	19									
20	20	Jessica Jones	daniellehancock@example.net	6302648559	South Adam	2	1984								
21	21	Pavan	pavanvignesh001@gmail.com	6302648559	Visakhapatnam	0									
22	22	Koushik	koushik123@gmail.com	9899968999	Warangal	0									
23	23	Pavan	pavanvignesh001@gmail.com	9898989878	Hyderabad	0									
24															
25															
26															
27															

## Users\_data.csv