System Name:

Simple library system

System Description:

Developing a system for a small library that enables librarians who are working at a work station to perform the following:

- The librarian should be able to register (add) a new person , which would like to join the library, to the library membership.
    - The new application needs to be verified by a senior librarian during the registration process.
- The librarian should be able to manage the processes of an existing member borrowing a book from the library and an existing member returning a book to the library.
- The librarian should be able to get a status of an existing member by scanning the barcode on the member's library card.
    - The status of a member includes:
        - Card number
        - Person information:
            - forename & surname
            - address
            - phone number
            - fax
            - email address
        - list of borrowed books and return dates
        - includes possible fines at a fixed rate
- The librarian should be able to retrieve details of a book by scanning the barcode of the book.
    - The data that is retrieve includes:
        - Unique book number
        - Title
        - Author
        - ISBN
        - Year of publication
    - A borrowed book is marked as unavailable and the card number of the borrow is included.
- Receive a fine that has been paid by a member and updating the member's status.
    - The system must interact with accounting software to record the detail of money paid to the library.
    - Only a senior librarian is allowed to void a fine.

List of Actors:

Senior Librarian: The Senior Librarian actor handles the verifications in the system in which include: ensuring the verification of a *librarian's* registration of a new person that would like to be added to the library's membership; ensuring that fines that *members* receive due to late returns is valid.

Librarian: The librarian actor is the main actor of the system and handles the majority of the system functions: the management of members (add, modify & delete); rental of books; verification of *member's* status.

Member: The member actor is handles their own record details via their library card and interacts with the *librarian* to borrow or return books and to pay fines.

Accounting System: The accounting system is a system that is referenced when a fine is being paid by the *member*. The system must interact with an accounting software to record the detail of money paid to the library.

List of Use Cases:

Title: | *Description*

Member's Library Membership

Scan Member's Library Card | A member has scanned their library card or a librarian has scanned a member's card and has identified either: a possible fine that the member is being charged for books being returned late; retrieved the member's details.

Check Fine | The system refers a senior librarian to verify that the fine being charged to a member is valid. The senior librarian is able to void any fines under certain circumstances.

Charge Account | The system charges the member with the fine by interacting with an accounting software, that records the detail of money being paid by the member. Once the fine has been paid or void, the member's status is updated.

Management of Member Records

Manage Member Records | Librarians are able to manage the member's records that are stored in the system. The system allows the librarian to add, modify or delete member records.

Add Member Record | A librarian has identified a person that wishes to become a library member. The librarian will add a record holding the person's card details: card number; her personal info, such as name, address, phone, fax and email. This record will be sent off for verification by a senior librarian.

Modify Member Record | A librarian has identified a member that wishes to update or change their details stored in the system. The librarian is able to modify details, such as, as name, address, phone, fax and email.

Delete Member Record | A librarian has identified a member that is no longer going to the library or has expressed that they do not want to be part of the library any longer and wishes their record to be deleted, so the librarian is able to remove this record.

Verification | A librarian has submitted a record for a new member and wishes that the record can be verified so that the new member can start borrowing books.

Borrowing and returning process

Scan Book's | A librarian has scanned a book and has identified: that a member would like

Barcode	to know more about the book (retrieve book details); a member would like to check availability, so that they are able to borrow the book; verify the issue count or a member wishes to return a book.
Retrieve book details	A book has been scanned into the system and the system outputs the book's details. Such details includes a unique book number, title, author, ISBN, year of publication. A borrowed book is marked as unavailable and the card number of the borrower is included.
Availability	A book has been identified by the system and the librarian would like to know the availability of the book.
Issue Book	A book has been identified and the librarian would like to issue the book to a member. An issued book is marked as unavailable and the card number of the borrower is included.
Renew Book	A book has been identified and is being returned, however the member wishes to renew the book, so the librarian is able to re-issue the book to the same member.
Return Book	A book has been identified that is unavailable, thus the book is being returned. The system changes the status of the member and the status of the book and then checks if there is any fine for late return.

Member's Status

Retrieve Member's Status	The system has identified that an action has taken place that requires the status of the member to be updated. The system also allows the librarian to retrieve the member's details.
Retrieve member's details	The system has identified that the librarian would like to retrieve the member's details and has displayed the details: card number; her personal info, such as name, address, phone, fax and email.

Use Case Name	Scan Member's Library Card
Participating Actor(s)	Member, Librarian
Flow of Events	Normal path: 1. Member asks librarian to check their membership (fines / retrieve details) 2. Member gives librarian their membership card to scan 3. Librarian scans the member's card Alternative path: 4. Member askes librarian to check their membership (fines / retrieve details) 5. Member scans their membership card
Entry Condition(s)	Member scans the card Librarian scans the card
Exit Condition(s)	Librarian has retrieve account details

Use Case Name	Check Fine
Participating Actor(s)	Senior Librarian,

Flow of Events	Normal path:
	1. Member's details are retrieved from the system identifying that there is a fine
	2. The details are sent to a senior librarian
	3. The senior librarian checks to see if the fine is valid
	4. The fine is valid and the member is charged
	5. The system updates the member's status
	Alternative path:
	1. Member's details are retrieved from the system identifying that there is a fine
	2. The details are sent to a senior librarian
	3. The senior librarian checks to see if the fine is valid
	4. The fine is not valid and the member is not charged
	5. The system updates the member's status
Entry Condition(s)	Member is returning a book Member's library book has been scanned and a fine is found
Exit Condition(s)	Senior librarian has found that the fine is void Senior librarian has not found that the fine is void

Use Case Name	Charge Account
Participating Actor(s)	Accounting Software Member
Flow of Events	Normal path:
	1. The member has been charge with a fine
	2. The system interacts with an accounting software to record the detail of money paid to the library
	3. The member pays the amount
	4. The system updates the member's status
Entry Condition(s)	A senior librarian has found that the fine was not void
Exit Condition(s)	Member has paid their fine

Use Case Name	Manage Member Records
Participating Actor(s)	Librarian
Flow of Events	Normal Path
	1. The Librarian enters the system
	2. The librarian browses the member's records
	3. The librarian manages the records (add, remove or modify)
Entry Condition(s)	Librarian needs to manage the records
Exit Condition(s)	Record has been managed

Use Case Name	Add Member Record
Participating Actor(s)	Librarian
Flow of Events	Normal Path 1. A person has expressed interest in joining the library's membership 2. The person fills out a form with their details into it 3. The Librarian copies the data from the form to the system in a new member record 4. The new member record is then submitted by the librarian to be verified
Entry Condition(s)	Librarian must be managing the records New person must want to join the library
Exit Condition(s)	The record must be filled out The registration must be cancelled

Use Case Name	Modify Member Record
Participating Actor(s)	Librarian
Flow of Events	Normal Path 1. A member has expressed interest in modifying their membership 2. The member fills out a form with their new or modified details on it 3. The Librarian copies the data from the form to the system into existing member record. 4. The members record is then saved.
Entry Condition(s)	Member would like to modify their membership records
Exit Condition(s)	The member's records were modified

Use Case Name	Delete Member Record
Participating Actor(s)	Librarian
Flow of Events	Normal Path 5. A member has expressed interest in deleting their membership 6. The member signs a form saying they requested the membership to end 7. The Librarian deletes the member's record 8. The members record is deleted Alternative path 1. Member has not used their library card in 5 years and have not expressed interest in using it 2. The librarian will be able to delete the record 3. Record deleted
Entry	Member would like to delete their membership records

Condition(s)	Member has not been to library in 5 years.
Exit Condition(s)	The member's records were modified

Use Case Name	Verification
Participating Actor(s)	Senior Librarian
Flow of Events	Normal path 1. A member's record has been sent to be verified 2. The senior librarian checks the record 3. The senior librarian then approves or disapproves of the record
Entry Condition(s)	A record has been created and needs verification
Exit Condition(s)	The record has been verified

Use Case Name	Scan Book's Barcode
Participating Actor(s)	Librarian
Flow of Events	Normal path 1. A member that wishes to retrieve information on a book, borrow a book or return a book 2. The member hands the book to the librarian 3. The librarian scans the book 4. The system retrieves the books details 5. The system outputs the book's details
Entry Condition(s)	A member wishes to scan a book
Exit Condition(s)	The book is found

Use Case Name	Retrieve book details
Participating Actor(s)	Librarian
Flow of Events	Normal path 1. A member that wishes to retrieve details of a book 2. The member passes the book to the librarian 3. The librarian scans the book 4. The system retrieves the books details 5. The system outputs the book's details 6. The librarian prints off the details for the member
Entry Condition(s)	A member wishes to retrieve a book's details
Exit Condition(s)	The member gets the book's information

Use Case Name	Availability

Participating Actor(s)	Librarian
Flow of Events	Normal path 1. A member that wishes to find out if a book is available 2. The member asks the librarian about the book 3. The librarian scans the book / searches 4. The system retrieves the books details 5. The system outputs the book's details 6. The librarian checks to see if the book is available 7. The librarian tells the member if the book is avaible
Entry Condition(s)	A member wishes to find out whether a book is avaliable
Exit Condition(s)	The member finds out whether the book is available

Use Case Name	Issue Book
Participating Actor(s)	Librarian Member
Flow of Events	Normal path 1. A member that wishes to borrow a book 2. The member hands the book to the librarian 3. The librarian scans the book 4. The system retrieves the books details 5. The system outputs the book's details 6. The Librarian askes for the member's Library Card 7. The member gives the librarian their member's card 8. The librarian scans the member's card 9. The system updates the member's status to say they have borrowed a book 10. The system updates the book's availability 11. The librarian then gives the book the member
Entry Condition(s)	A member wishes to borrow a book
Exit Condition(s)	The member borrows the book

Use Case Name	Renew Book
Participating Actor(s)	Librarian Member
Flow of Events	Normal path 1. A member that wishes to renew a book 2. The member hands the book to the librarian 3. The librarian scans the book 4. The system retrieves the books details 5. The system outputs the book's details. 6. The system shows that the book is unavailable 7. The Librarian askes for the member's Library Card

	8. The member gives the librarian their member's card 9. The librarian scans the member's card 10. The system changes the return date 11. The system updates the book's availability 12. The librarian then gives the book back to the member
Entry Condition(s)	A member wishes to renew a book
Exit Condition(s)	The member renews the book

Use Case Name	Return Book
Participating Actor(s)	Librarian
Flow of Events	Normal path 1. A member that wishes to return a book 2. The member hands the book to the librarian 3. The librarian scans the book 4. The system retrieves the books details 5. The system outputs the book's details 6. The system shows that the book is unavailable 7. The system updates the member's status 8. The system updates the book's availability Alternative path 1. If the book is returned on a date that is after it's due date, the member is fined
Entry Condition(s)	A member wishes to return a book
Exit Condition(s)	The book is returned (doesn't have to be by member)

Use Case Name	Retrieve Member's Status
Participating Actor(s)	Librarian Member
Flow of Events	Normal path 1. The librarian scans the member's card 2. The system retrieves the status of the member 3. The system then displays the status of the member Alternative path 1. The system requires to update the member's status
Entry Condition(s)	Status of member needs to be updated or viewed
Exit Condition(s)	Status of member is updated or viewed

Use Case Name	Retrieve member's details
Participating Actor(s)	Librarian Member

Flow of Events	Normal path
	1. The librarian scans the member's card
	2. The system retrieves the status of the member
	3. The system retrieves the member's details
	4. The system displays the member's details to the librarian
Entry Condition(s)	The member wants to modify their member's details
	Librarian wants to look up member's details
Exit Condition(s)	Members details viewed