Md. Awal Hadi

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Library Management System

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Dear sir,

Re: Enclosed Application Agreement for Library Management System.

At HADI IT, we are aware that creating client-oriented Application takes a mixture of technical excellence and clear communication and our firm hires only the very best to ensure you receive both. We know that every client is unique and we strive to deliver an individual, innovative and affordable proposal every time and to follow it through with an outstanding delivery which is both on time and within budget.

According to your business requirement we design Library Management System for you, In this agreement paper we right each and every part and all possible feature which covered our

Application. So please read carefully and if it satisfy you then sign and confirm the agreement.

Yours Truly,

Md. Awal Hadi

SRS Builder

Application Development Branch

HADI IT Enclosed,1200

# **Introduction**

With the increase in the number of readers, better management of libraries is required. This Library Management System is developed not only for web access but also available as phone applications that focus on issuing, renewing, reserving, and managing books.

## Problem Statement

The purpose of this system is to maintain the details of books, magazines, research papers, DVDs, and Library members. It provides an easy circulation system between members and libraries, to issue books, search books, return books, renew book, requesting reading sources and reserve books, also to maintain details about the members (fine, address, phone number). All these features are available from MOBILE also. It helps the Librarian to manage the daily library activity in electronic format.

The objectives are as follows:

* A Public Website which can be accessed only by the resident of Ireland and must be a registered member of a public library.
* An Admin Website that can only be accessed by the librarian, which include the functionality like managing Oracle database.
* A Mobile application that reflects the functionality of the public website.

## Intended Audience and Reading Suggestions

The purpose of this document is to convey information about the user requirement, both functional and non-functional, to the reader. This document provides:

* A description of the user expectation.
* A definition of website and mobile application capabilities.
* A specification of functional and non-functional requirements.

## Scope

* Updating the library system into the mobile application so that users can know the details of the books/research paper/Magazines/DVDs available in the library and maximum limit on borrowing through their phones and computer.
* The AIL system provides information's like details of books, insertion of books, deletion of lost books, fine on keeping the book more than the due date, handling RFID system, request processing for Nat Coll by member.

# **Software Requirement Specification**

## **Product Perspective**

The AIL system will allow the user to perform all the functionality online which was previously not possible like, issuing books or all reading material online, getting the information about the nearby library, requesting a book from National Specialist Collection, user can search a book and can put it on hold. Also, the user can check for the fine and can make payment for the fine online. This system will save time in searching for a record that was previously very difficult because records are large in number.

## **User Classes and Characteristics**

"AIL " has basically 3 types of users.

Member:

* Availability of the books
* Issue Books
* Reserve Books
* Return Books
* Renew Books
* Fine Details
* Watch Trailer
* Locating Library
* Request for Book from National Specialist Collection Librarian:
* Add new books
* Remove book
* Cancel membership
* Issue Smart card
* Add RFID information
* Update details of book

Admin:

* Register User
* Book Search
* Fine Calculation
* RFID tag Information
* Update Member's information
* Report Generation Fine Details

## Software Requirement

Front End:

* Application Developer Tool
* Advance Java
* HTML5 and CSS Back End:
* Oracle Database

## Hardware Requirement

* Operating System: Windows 7/8/8.1/10, Android version 2.3 gingerbread or more.
* Memory: 2GB RAM or more
* Processor Speed: 1.2GHz processor
* Processor: Intel i3 or more
* Hard Disk Space: Min 3GB for Database usage.

## Functional Requirement

1 Register:

* Description: First user must register into the system. There are two types of users.
* Librarian: It must provide details about the name of library, address of library, phone number, email-id.
* Member: The user must provide details of full name, address, nationality, Identity Number, phone number, email-id. Login
* Input: Enter the membership and password that is already provided.
* Output: Member will be able to use the features of system. 2. Manage Items

by Member

Items Issued:

* Description: List of all the books, magazines, research paper and DVDs will be displayed along with the date of return.

Search:

* Input: Insert the price, name of author, publisher, ISBN/ISSN, Edition, category of book, magazine, DVDs to be issued.
* Output: books, magazine, DVD found related to the typed keyword will be displayed in list format.

Issues Book:

* State: Search the item that the user what to issue.
* Input: Member will Select the book, magazine, DVD which they want to issue.
* Output: Conformation for the issue and apology for failure in issue
* Processing: If a selected product is available then it will be issued otherwise next available date will be displayed.

Renew Book:

* State: Item is issued and is about to reach the due date.
* Input: Select Item that user wants to renew.
* Output: Confirmation will be sent via phone and email.
* Processing: If the Issued book is already reserved by another member, then the next available date will be shown and if not, then confirmation will be displayed.

Return:

* Input: Place the book in front of RFID scanner in order to return book.
* Output: The returned book will be removed from the issued table of the user.

Reserve book:

* Input: Enter the details of Magazine/Research Paper/DVD/books.
* Output: Reserved conformation message will be displayed.
* Description: If the book/Magazine/Research Paper/DVD is already issued then the user can hold it, so that members can issue it later.

Fine:

* Input: Identifying Fine.
* Output: Details about fines on different book issued by member.
* Processing: If the member does not return a book on the date of return and did not renew it then fine will be applied daily. 3.Manage Books/DVD by Librarian

Update Details:

Addition:

* Input: Enter the details of Book like name, author, edition, quantity, category, ISBN, RFID tag information.
* Output: Confirmation of addition.

Remove:

* Input: Enter the book and the quantity that the user wants to remove.
* Output: Update the list books available.

Book Request:

* Input: Request for NSC books by the member.
* Output: If the member's request is accepted by the NSC then books will be provided otherwise apology message will be displayed.
* Description: If member requests for some special book via API call to the system, then that request will be transferred to the NSC by Netcool. The response will be displayed as output.

## Non-Functional Requirement:

* Availability Requirement: The system should be available all the time to the user.
* Efficiency Requirement: Mean Time to Repair - even if the system fails it will recover quickly.
* Accuracy: It will precisely provide real-time information about members data and library, taking into consideration various concurrency issues.
* Hardware Constraints: The system requires a database to store data related to the library and its members. The database should have backup capabilities.
* Privacy Requirements: No one without registered users cannot enter-into the website. Every user has its own personalized view in the system.

# User Requirement

* New user Registration: This is performed by a new user to create an account. Here a user should enter the personal details like – full name, address, phone number, official id number (Passport number, license number) in addition to this librarian must enter some extra details like library name, address.
* Existing user Update: All existing user which are already present in our system are need to add and will be pulled and saved in database.
* Login: This feature used by the user to login to the system. User are required to enter the member and password before they can enter the system. The member and password will be verified and if the invalid id is there the user cannot enter the system.
* Security Question for new user creation: A set of three security questions will be set when the user is registering first time and it can be used when the user forgets the used or password to its respective email-id.
* Register New book: This feature will be accessible by the librarian only to add a new book, magazine, research paper, DVD to the library database.
* Search book: This feature will allow the user to search for any book using author name, publisher, book title, ISBN.
* Issue book and Return book: this feature allows the user to issue and return the books. It will also tell the user the issued book detail with the return date.
* Renew book: This feature will allow the user to renew the book only if the given book is available to reissue.
* Request: This feature provides a user to make a request call for some special book to the librarian, also user can request for booking a room. Also, the user can put a hold on some book that is not available in the library.
* Geo-Locator: This feature will allow the user to get the information about the nearby library with their opening and closing time. Also, give them information about the availability of the room.
* Fine: If the user will not return a book on the due date, then this feature will calculate the fine and will display the amount that the user needs to pay. Also, it will display some payment methods.
* Logout: This will help the user to come out from the system after successful execution.
* Database:
  1. User table: where new and existing user data will be given including full name, email-id, phone number, address, passport number.
  2. Admin table: for Admin details like name of the librarian, email-id of the library, name of the library, address of library, phone number of library and librarian.
  3. Authentication table: for keeping encrypted user information which checks whether a user is resident of IRELAND or not, have a correct email id and phone number.
  4. Book Issued table: which includes the data of the number of books issued with book details and return date, also the details of members who have issued the books.
  5. Fine Record table: This table will include Wear-tear of hard copies, lost books, expiry of the due date.
  6. Payment table: This will store the information of all the payment that is whether made by a member or librarian. Payment date, payment reason, and payment mode column are created.
  7. Payroll table: for resourcing working in a library, infrastructure maintenance