Software Requirements Specification

FOR LIBRARY MANAGEMENT SYSTEM

PREPARED BY :-   **SUBMITED TO:-**

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1.Introduction

1.1.Purpose

The main objective of this document is as an instance the wants of the project Library Management system. The document provides the elaborate description of the each purposeful and non purposeful needs planned by the shopper. The document is developed when variety of consultations with the shopper and considering the whole demand specifications of the given Project. the ultimate product of the team are going to be meeting the wants of this document.

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1.2. Document Conventions

The following square measure the list of conventions and acronyms employed in this document and therefore the project as well:

Administrator: A login id representing a user with user administration privileges to the package

➢ User: A general login id assigned to most users

➢ Client: supposed users for the package

➢ SQL: Structured question Language; accustomed retrieve data from a database

➢ SQL Server: A server accustomed store knowledge in Associate in Nursing organized format

➢ ASP: Active Server Pages: an online Page formatted on the server and delivered to the browser.

➢ Layer: Represents a district of the project

➢ User Interface Layer: The section of the assignment relating what the user interacts with directly.

➢ Application Logic Layer: The section of the assignment pertaining to the online Server. this can be wherever all computations are completed.

➢ Data Storage Layer: The section of the assignment pertaining to wherever all information is recorded

➢ Data flow diagram: It shows the dataflow between the entities.

➢ Use Case: A broad level diagram of the project showing a basic summary

➢ Boolean: A true/false notation

➢ Interface: Something used to communicate across different mediums

➢ Unique Key: accustomed differentiate entries in an exceedingly info

1.3.Intended Audience and Reading Suggestions

The meant audiences for this document are:

➢ The team members of Innovative library Solutions.

➢ The body employees of University of Ballarat at IIBIT World Health Organization is that the shopper.

➢ The Project Supervisor Mr. Pramesh Khadka and Project arranger Mr. Hari Gande.

This document are going to be reviewed ofttimes by the higher than audiences to ascertain if the various phases of the project ar being completed by meeting the given needs.

If there ar any changes within the needs within the course of the project they must be enclosed during this document by creating the mandatory changes.

1.4.Project Scope

Project Title : Library Management System
Date: 18-12-2022   Prepared By: Abhishek prakash
Project Justification: This project is essentially changing the manual library system into a net based mostly application in order that the users will apprehend the main points of their account, availability of books etc.,
Product Characteristics and Requirements :   1)Secured database.   2)User tracking   3)Search feature   4)Calculating fines Checking the availability of books.   5)Students will get an E-mail before the due date to avoid fines
Project Management Deliverables: Project set up, analysis finding report, Work breakdown structure, Scope statement, Project charter, coaching manuals, lessons learned report etc.   **Product-related deliverables:**   Research reports, design documents, software code, hardware test plan, project benefit measurement plan etc.,

Project Success Criteria: Our main goal is to finish this project at intervals assigned deadline and additionally at intervals the budget assigned. it's necessary to develop a way for capturing the advantages whereas the library management system is being developed, tested, and once it's extended. If the project takes a bit longer to finish or prices a bit quite planned, the firm can still read it as successful if it's a decent payback and helps promote the firm's image as a superb management organization

1.5. References

1. R.S PRESSMAN SOFTWARE ENGINEERING: A PRACTIITIONER'S APPORACH, McGraw-HILL,ED 7,2010

2. IEEE Recommended Practice for software Requirements Specification.

3. P. Jalote, An integrated approach to software Engineering.

2.Overall Description

2.1. Product Perspective

The planned Library Management System that is being developed by Innovative Library Management Solutions team is AN on-line Library Management System. this technique can give a pursuit practicality to facilitate the search of resources. This search is going to be supported varied classes viz. book name or the ISBN. additionally Advanced Search feature is provided to look varied classes at the same time. Additionally, the library workers personnel will add/update/remove the resources and the resource users from the system.The University of Ballarat has varied campuses distributed across Australia. any every branch is managed one by one and domestically by that branch library employees. The System ought to replicate and support this suburbanized structure. A provision ought to any be allowed to feature a branch. The System also will have AN ADMIN UN agency has full-fledged rights with regards to managing resources across branches – like transferring books across these branches. The users will apprehend the quantity of obtainable books, info regarding their account etc.

2.2 Product Features

There square measure two totally different users World Health Organization are going to be victimization this product:

➢ Librarian World Health Organization are going to be acting because the administrator .

➢ Student of the University World Health Organization are going to be accessing the library on-line. The options that square measure on the market to the professional person are.

➢ A professional person will issue a book to the coed.

➢ Can read the various classes of books on the market within the library.

➢ Can read the List of books on the market in every class.

➢ Can take the book came back from students.

➢ Add books and their info of the books to the information.

➢ Edit the data of the prevailing books.

➢ Can check the report of the issued Books.

➢ Can access all the accounts of the scholars. The options on the market to the scholars are.

➢ Can read the List of books on the market in every class.

➢ Can own AN account within the library.

➢ Can read the books issued to him.

➢ Can place a call for participation for a replacement book.

➢ Can read the history of books issued to him antecedently.

➢ Can explore for a specific book.

2.3. User Classes and Characteristics

There are numerous styles of users for the merchandise. Typically internet product are visited by numerous users for various reasons.The users embrace :

➢ Students UN agency are going to be mistreatment the higher than options by accessing the Library on-line.

➢ Librarian UN agency are going to be acting because the controller and he can have all the privileges of associate administrator.

2.4. Operating Environment

The product is going to be operational in windows setting. Additionally, it'll be compatible with the i.e., 60. Most of the options are going to be compatible with the Mozilla fire fox & Opera seven zero or higher version. the sole demand to use this on-line product would be the net affiliation.

2.5. Design and Implementation Constraints

He Product is developed victimization ASP. The backend info for this SQL Server. the merchandise is accomplished with login facility so specific operate is offered to specific student

2.6. User Documentation

The product can embody user manual. The user manual can embody product summary, complete configuration of the used software system (such as SQL server), technical details, backup procedure and speak to data which can embody email address. there'll be no on-line facilitate for the merchandise at this moment. the merchandise are compatible with the net someone half dozen. or higher. The databases are created within the Microsoft SQL server 2000.

2.7. Assumptions and Dependencies

- The product needs following third party product.
- Microsoft SQL server to store the database.
- ASP to develop the Product.

3.System Features

3.1. Database – Storage

Description and Priority

Proposed Database is intended to store, retrieve, update, and manipulate information related to university which include
Books availability
Staff information
Student details
My Account
Calculation of fines

Stimulus / Response Sequences

Responses for Administrator: The administrator can Login and Logout. When the Administrator Logs into the Library system. The system will check for validity of login. If the Login and password are valid, the response to this ACTI able to modify, view, add, deleting and all other functions that can be performed on the data base. on is the administrator will be.

3.2. Function Requirements

This section gives the list of Functional and nonfunctional requirements which are applicable to the Library Management System.

3.3.1 Interface Requirements

This section describes how the software interfaces with other software products or users for input or output.

<u>User Interfaces</u>

Describes how this product interfaces with the user.

<u>GUI</u>

Describes the graphical user interface if present. This section should include a set of screen dumps or mockups to illustrate user interface features.

<u>Description</u>

The user interface must be customizable by the administrator

1. Criticality

This issue is essential to the overall system. All the modules provided with the software must fit into this graphical user interface and accomplish to the standard defined.

Technical issues

In order to satisfy this requirement, the design should be simple, and all the different interfaces should follow a standard template. There will be the possibility of changing colors and images, plus switching between

Risks

To reduce the circumstances under which this requirement might not able to be satisfied, all the designers must have been developed web sites previously and they must be aware of html restriction and cross browsers implementations before starting the designing. In order to reduce the probability of this occurrence the entire design team will be trained in basic html development and macromedia fireworks; this tool will be used instead of Photoshopn interfaces with the minimum impact for the users

3.1.2 Dependencies with other requirements

All user interfaces should be able to interact with the user management module and a part of the interface must be dedicated to the login/logout module

4.Non-Functional Requirements

4.1 User Interfaces

Hardware Interfaces

Server:
- ➢ Operating System: Windows 9x/xp , Windows ME
- ➢ Processor: Pentium 3.0 GHz or higher
- ➢ RAM: 256 Mb or more
- ➢ Hard Drive: 10 GB or more

Client side:

- ➢ Operating System: Windows 9x or above, MAC or UNIX.
- ➢ Processor: Pentium III or 2.0 GHz or higher.
- ➢ RAM: 256 Mb or more

Software Interfaces

- ➢ Database: SQL Server.
- ➢ Application: ASP (Active Server Pages)
- ➢ Web Server: IIS (Internet Information Services (IIS) is a powerful Web server that provides a highly reliable, manageable, and scalable Web application infrastructure)

4.2. Communications Interfaces

- ➢ The Customer must connect to the Internet to access the Website:
- ➢ Dialup Modem of 52 kbps
- ➢ Broadband Internet
- ➢ Dialup or Broadband Connection with a Internet Provider.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The proposed system that we are going to develop will be used as the Chief performance system within the different campuses of the university which interact with the university staff and students. Therefore, it is expected that the database would perform functionally all the requirements that are specified by the university.

5.2 Safety Requirements

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup.

5.3 Security Requirements

We are going to develop a secured database for the university .There are different categories of users namely teaching staff, administrator, library staff.
, students etc., Depending upon the category of user the access rights are decided. It means if the user is an administrator, then he can be able to modify the data, delete, append etc., All other users other than library staff only have the rights to retrieve the information about database.

Software Quality Attributes

The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database.

5.4 Hardware Constraints

The system requires a database to store persistent data.

The database should have backup capabilities.

5.5 Software Constraints

The development of the system will be constrained by the availability of required software such as web servers, data base and development tools. The availability of these tools will be governed by the University of Ballarat. The most recent versions of software devel

5.6. Design Constraints.

The system must be designed to allow web usability. That is, the system must be designed in such a way that will be easy to use and visible on most of the browsers.
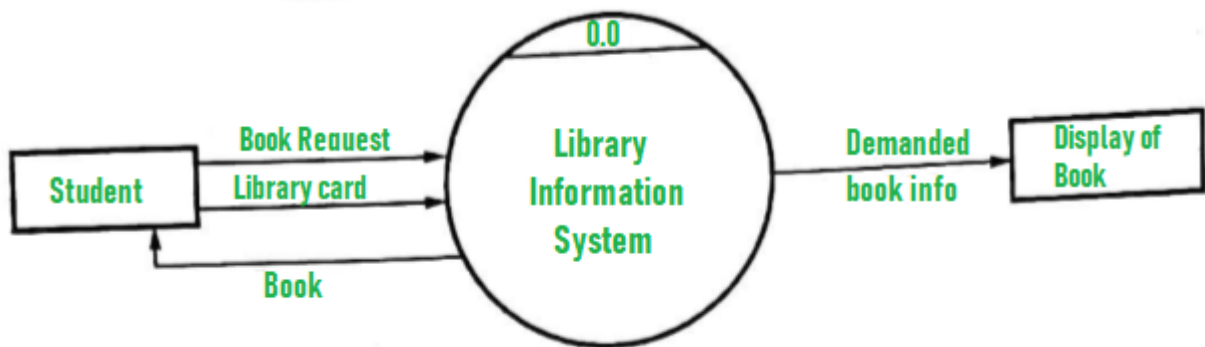open tools may not be installed at the University of Ballarat.

6. Data Flow Diagram (DFD)

Data Flow Diagram is depicts the flow of information and the transformation applied when a data moves in and out from a system. The overall system is represented and described using input, processing and output in the DFD. The inputs can be:

- Book request when a student requests for a book.

- Library card when the student has to show or submit his/her identity as a proof. The overall processing unit will contain the following output that a system will produce or generate:

- Book will be the output as the book demanded by the student will be given to them.
- Information of demanded book should be displayed by the library information system that can be used by the student while selecting the book which makes it easier for the student.
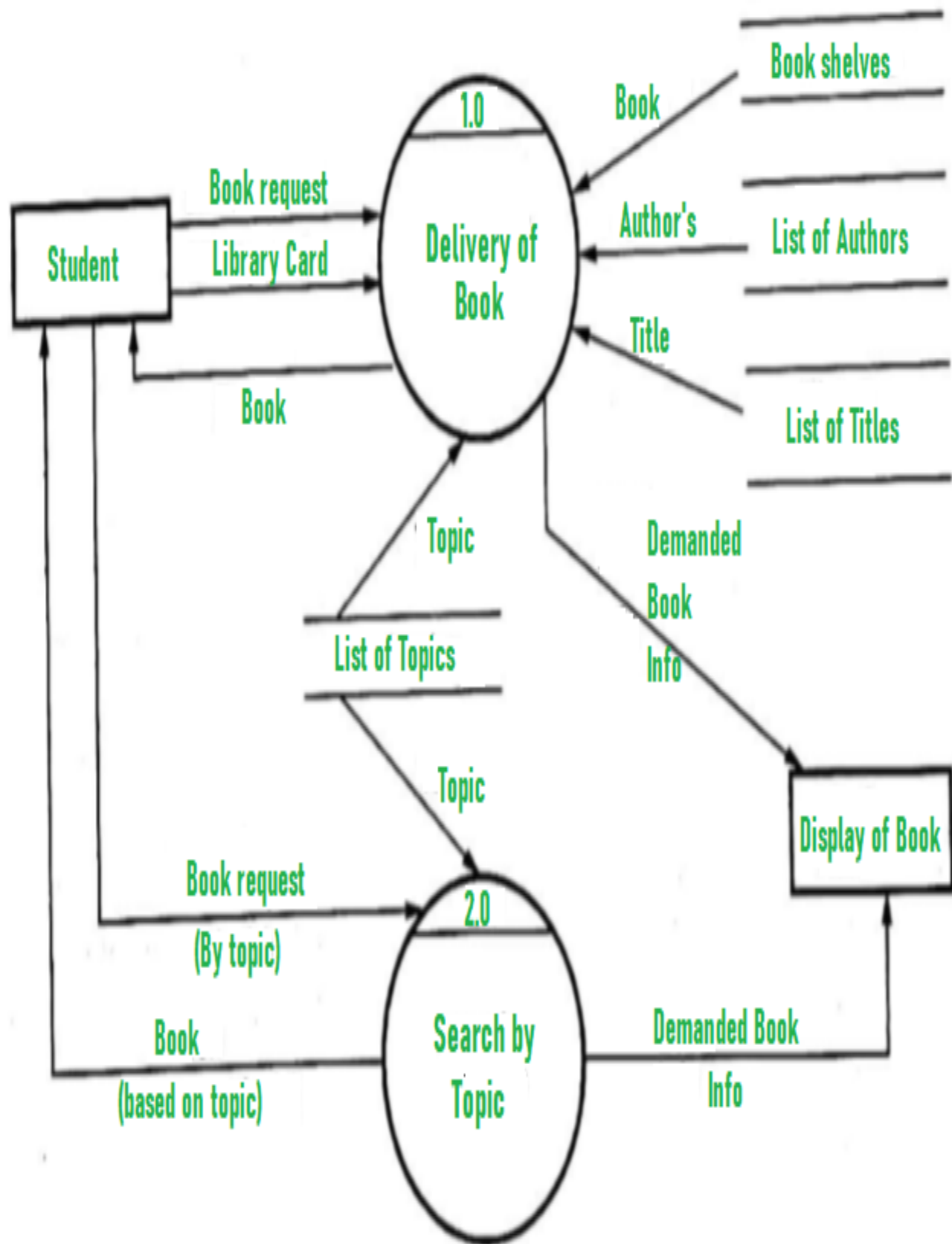
1.Level 0 DFD:-

2.Level 1 DFD :-

At this level, the system has to show or exposed with more details of processing.

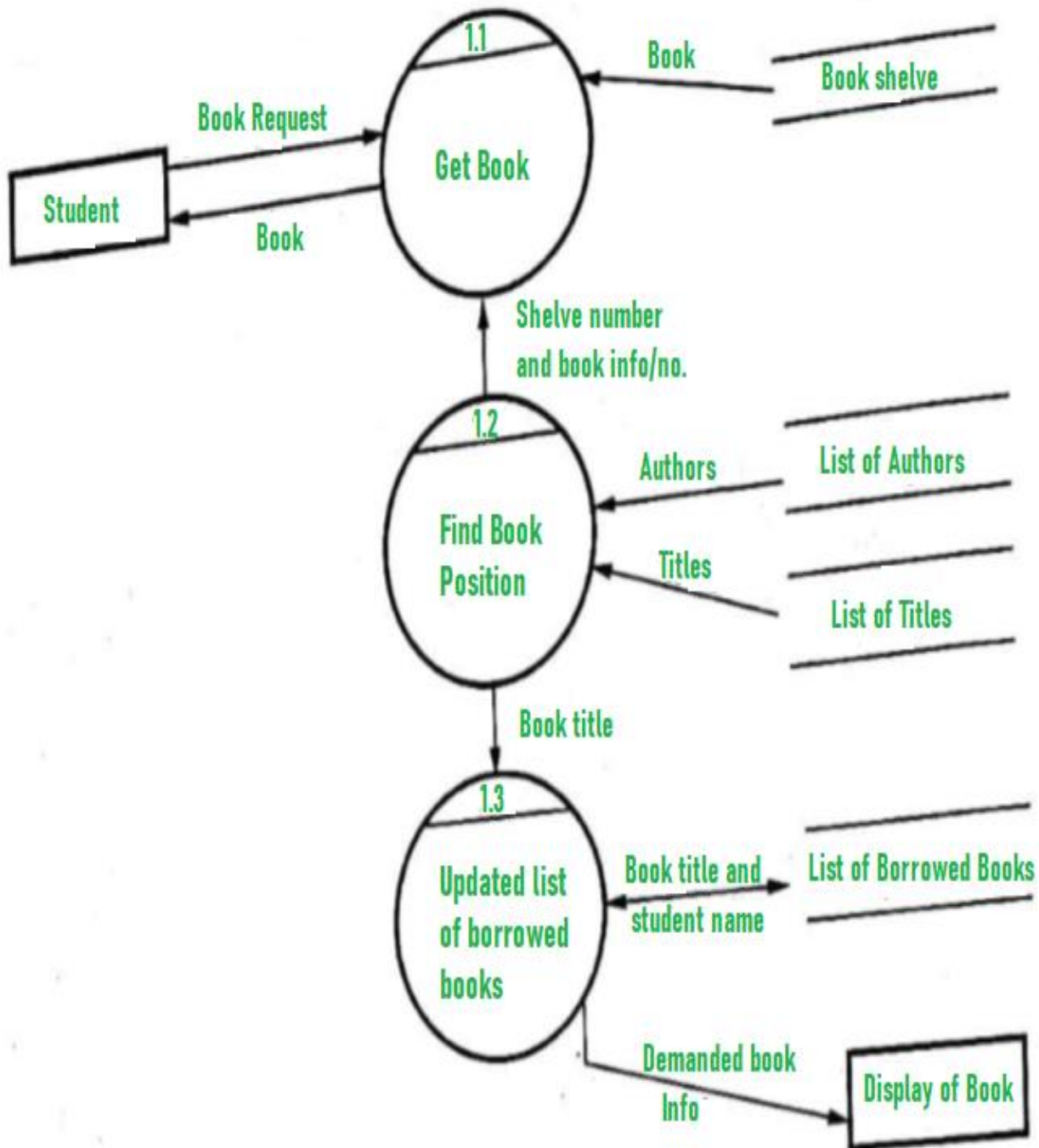The processes that are important to be carried out are:

- Book delivery
- Search by topic

List of authors, List of Titles, List of Topics, the bookshelves from which books can be located are some information that is required for these processes. Data store is used to represent this type of information.
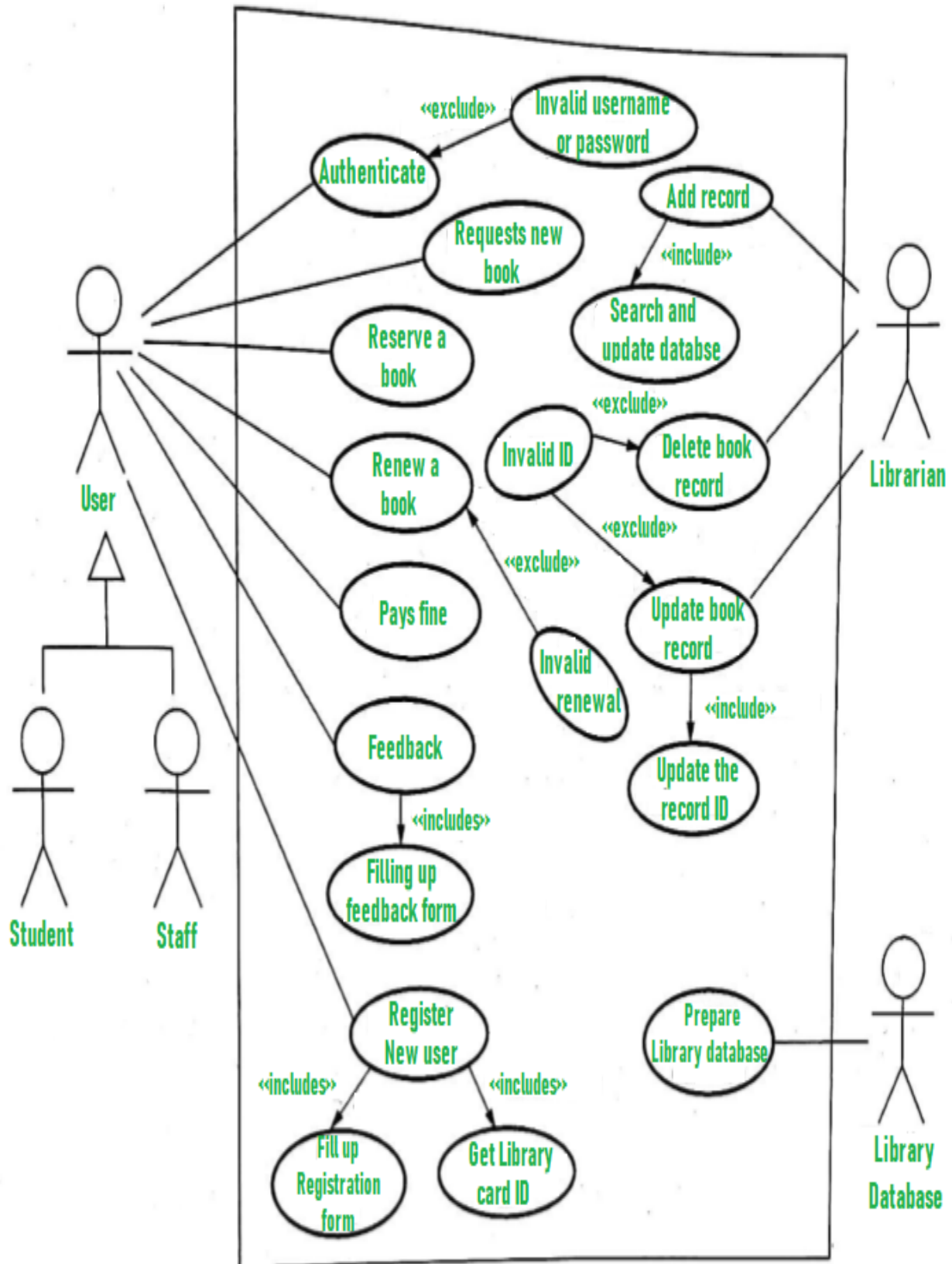
Book shelves

Book

1.0

Book request

Author's

List of Authors

Student

Library Card

Delivery of Book

Title

Book

List of Titles

Topic

Demanded Book Info

List of Topics

Topic

Display of Book

Book request (By topic)

2.0

Book (based on topic)

Search by Topic

Demanded Book Info

Level 1 DFD

3.Level 2 DFD:-

Level 2 DFD

Out of scope: Other activities like purchasing of new books, replacement of old books or charging a fine are not considered in the above system.

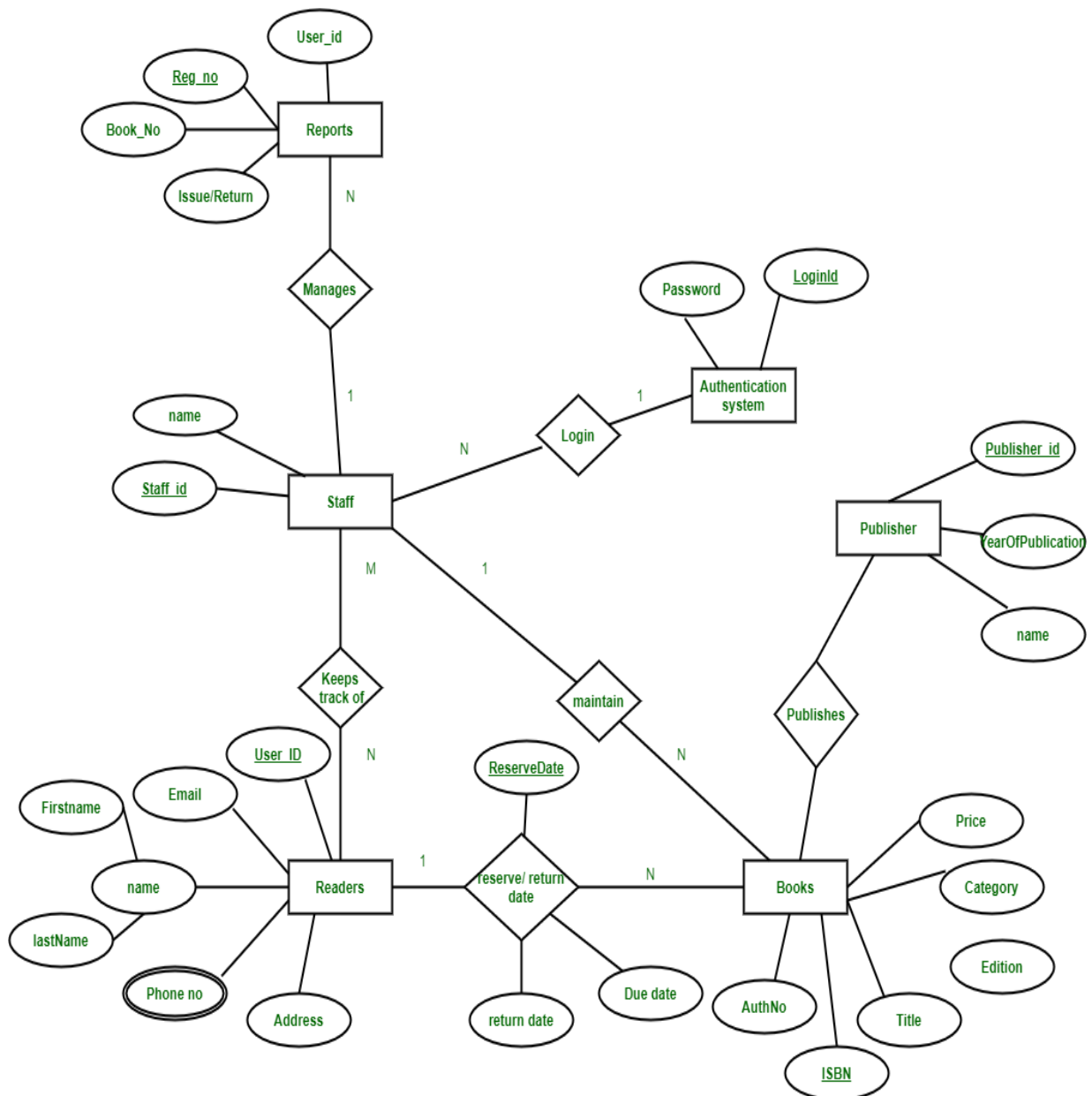# 7.Use Case Diagram for Library Management System

8.ER Diagram

It is known as Entity-Relationship Diagram, it is used to analyze the structure of the Database. It shows relationships between entities and their attributes. An ER Model provides a means of communication.

- The Library Management System database keeps track of readers with the following considerations –

- The system keeps track of the staff with a single point authentication system comprising login Id and password.

- Staff maintains the book catalog with its ISBN, Book title, price(in INR), category(novel, general, story), edition, author Number and details.

- A publisher has publisher Id, Year when the book was published, and name of the book.

- Readers are registered with their user_id, email, name (first name, last name), Phone no (multiple entries allowed), communication address. The staff keeps track of readers.

- Readers can return/reserve books that stamps with issue date and return date. If not returned within the prescribed time period, it may have a due date too.

- Staff also generate reports that has readers id, registration no of report, book no and return/issue info.
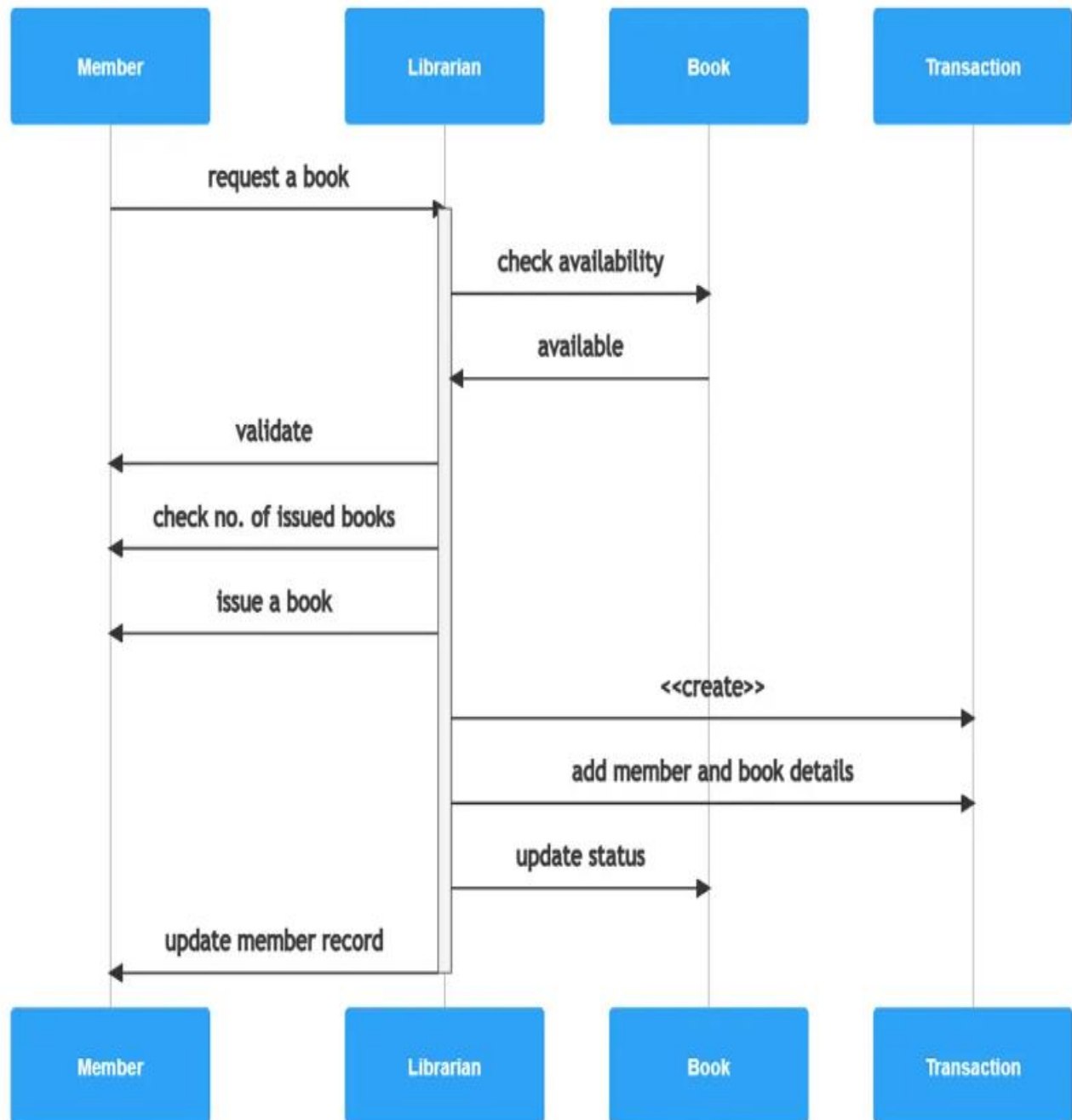
This Library ER diagram illustrates key information about the Library, including entities such as staff, readers, books, publishers, reports, and authentication system. It allows for understanding the relationships between entities.

9.Sequential Diagram.

Librarian-check availability->Book

Sequential Diagram For Library Management Syste

10.Conclusion

- The Library Management System allows the user to store the book details and the person's details.
- This software allows storing the details of all the data related to library.
- The implementation of the system will reduce data entry time and provide readily calculated reports.