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ABSTRACT

Singh Library management system is a project which aims in developing a computerized system to maintain all the daily work of library .This project has many features which are generally not availiable in normal library management systems like facility of user login and a facility of teachers login .It also has a facility of admin login through which the admin can monitor the whole system .It also has facility of an online notice board where teachers can student can put up information about workshops or seminars being held in our colleges or nearby colleges and librarian after proper verification from the concerned institution organizing the seminar can add it to the notice board . It has also a facility where student after logging in their accounts can see list of books issued and its issue date and return date and also the students can request the librarian to add new books by filling the book request form.The librarian after logging into his account ie admin account can generate various reports such as student report , issue report, teacher report and book report Overall this project of ours is being developed to help the students as well as staff of library to maintain the library in the best way possible and also reduce the human efforts.

1. INTRODUCTION

The project titled Singh Library Management System is Library

Management Web Application for monitoring and controlling the transactions in a library .The project “Singh Library Management System” is developed in php, which mainly focuses on basic operations in a library like adding new books, and updating new information, searching books and students and return books.

This project of “SINGH LIBRARY MANAGEMENT” of gives us the complete information about the library. We can enter the record of new books and retrieve the details of books available in the library. We can issue the books to the students and maintain their records and can also check how many books are issued and stock available in the library. In this project we can maintain the late fine of students who returns the issued books after the due date.

Throughout the project the focus has been on presenting information and comments in an easy and intelligible manner. The project is very useful for those who want to know about Library Management System.

2. OBJECTIVE OF THE PROJECT:-

To achieve the **goal** of computerized work and simplifying work of a "**Library Management System**". For performing the task given to us these are the necessary hardware requirement **system.**

3. PROJECT CATEGORY :-

My undergoing project falls under **Web Based Application.**

Web based project management software is the collection of programs, processes and information that is used to manage various phases of a project and that is accessible on the Internet. Project management entails processes such as scheduling, calculating a critical path, building timelines, creating task lists, managing resources, controlling documents and providing audit trails. Each of these processes can be controlled and sometimes automated through project management software solutions.

Web based solutions are coded in a browser supported language such as HTML, CSS, JavaScript, PHP. So they can be accessed by clients through a web browser. One main software version is installed and maintained on a server so that more than one client can access this version.

One disadvantage to using Web-based software is that the program is usually slower to respond than a typical desktop or client application; Web-based applications are limited by the speed of one's Internet connection, while client applications operate as quickly as the client's processor speed. (If you can think of a better way to phrase this, by all means go ahead.) In addition, most information in Web-based applications is not accessible when a user is offline

4. SYSTEM ANALYSIS

In this chapter, we will discuss and analyze about the developing process of Library Management System including software requirement specification (SRS) and comparison between existing and proposed system . The functional and non functional requirements are included in SRS part to provide complete description and overview of system requirement before the developing process is carried out. Besides that, existing vs proposed provides a view of how the proposed system will be more efficient than the existing on

5.Tools and Platform

Operating Environment

OE-1: The SLMS will operate in latest version on Cross Browser (FireFox, Chrome, Opera , etc.)

OE-2: Operating System: Windows, Linux

OE-3: Software requirements: MySQL , XAMP, Browser.

OE-4: Languages used are PHP , HTML, CSS, JavaScript, MYSQL.

OE-5: Hardware Requirements: 2.0Ghz Core 2 Due Processer HDD 1 GB(minimum)/ 2 GB (recommended) RAM

Devlopment Environnent

- o

DE-1: Database Server MYSQL (XAMP)

Editor – Visual Studio

OS – Ubuntu(Firefox Browser)

HDD – 125 GB

RAM – 2 GB

Processor – 2.9Ghz Core 2 due Processor

6. SYSTEM REQUARMENT SPECEFICATION

Hardware Requirements

HDD – 125 GB

RAM – 2 GB

Processor – 2.9Ghz Core 2 due Processor

Software Requirements

Database : MySQL , XAMP Server ,

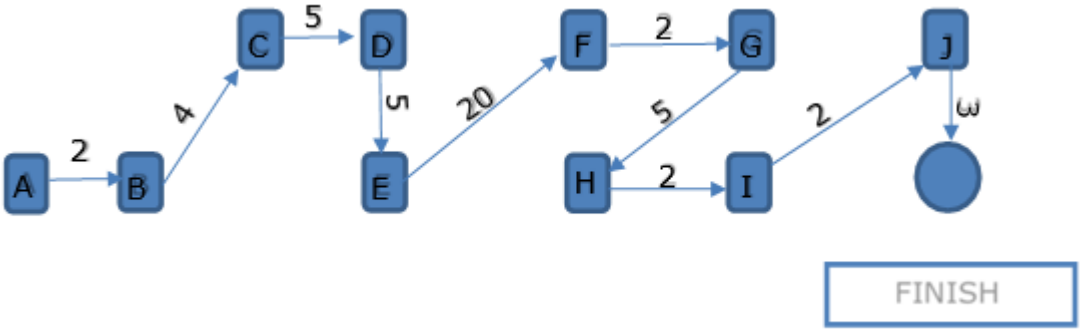
Browser: Chrome , Firefox etc.

7. SCHEDULING

Chart

Chart (program evaluation and review technique), is the scheduling project that can be applied to software development. This technique is used to allow software planner to determine the critical path the chain of tasks that determines the duration of the project.

Project Phases		Days	Activity
Feasibility Study		2	A
System Analysis		4	B
System Design		5	C
Database Design		5	D
Coding & Design		20	E
System Integration		2	F
System Testing		5	G
System Implementation		2	H
User Training		2	I
Post-Implementation Review		3	J
Total Days	50		

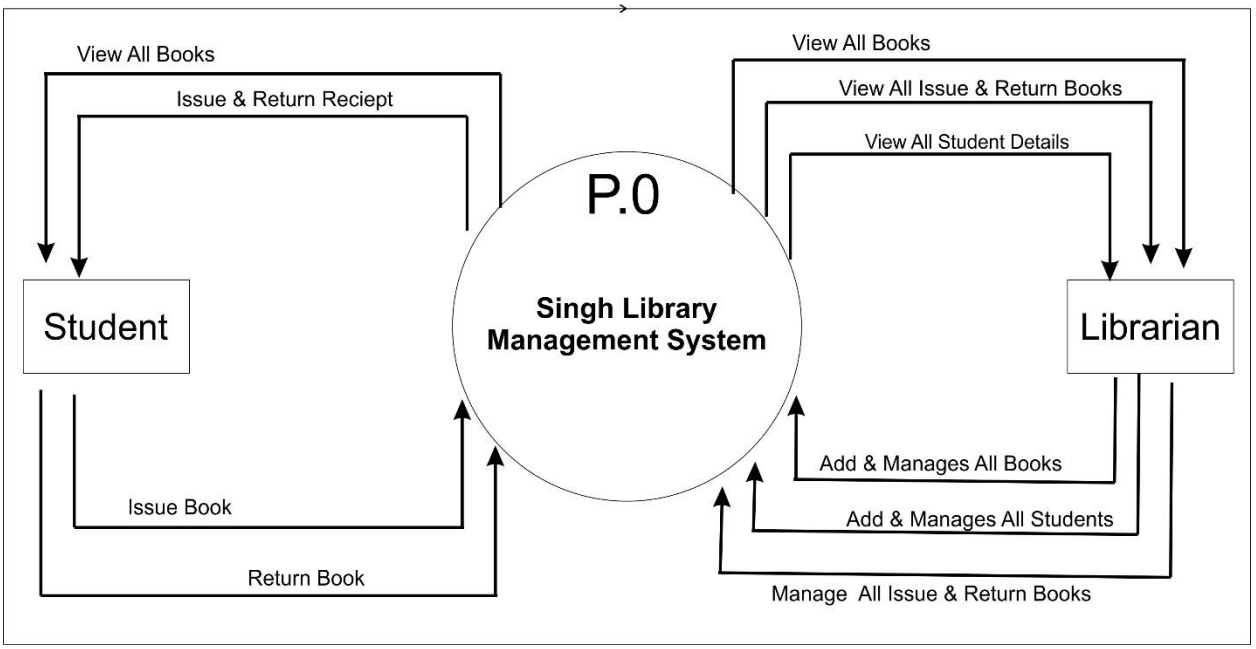


Gantt chart:

PHASE	TIME REQUIRED(IN WEEKS)					
	WK1	WK2	WK3	WK4	WK5	WK6
REQUIREMENT GATHERING	■					
REQUIREMENT ANALYSIS		■				
DESIGN			■	■		
CODING				■		
TESTING					■	■
IMPLEMENTA-TION						■

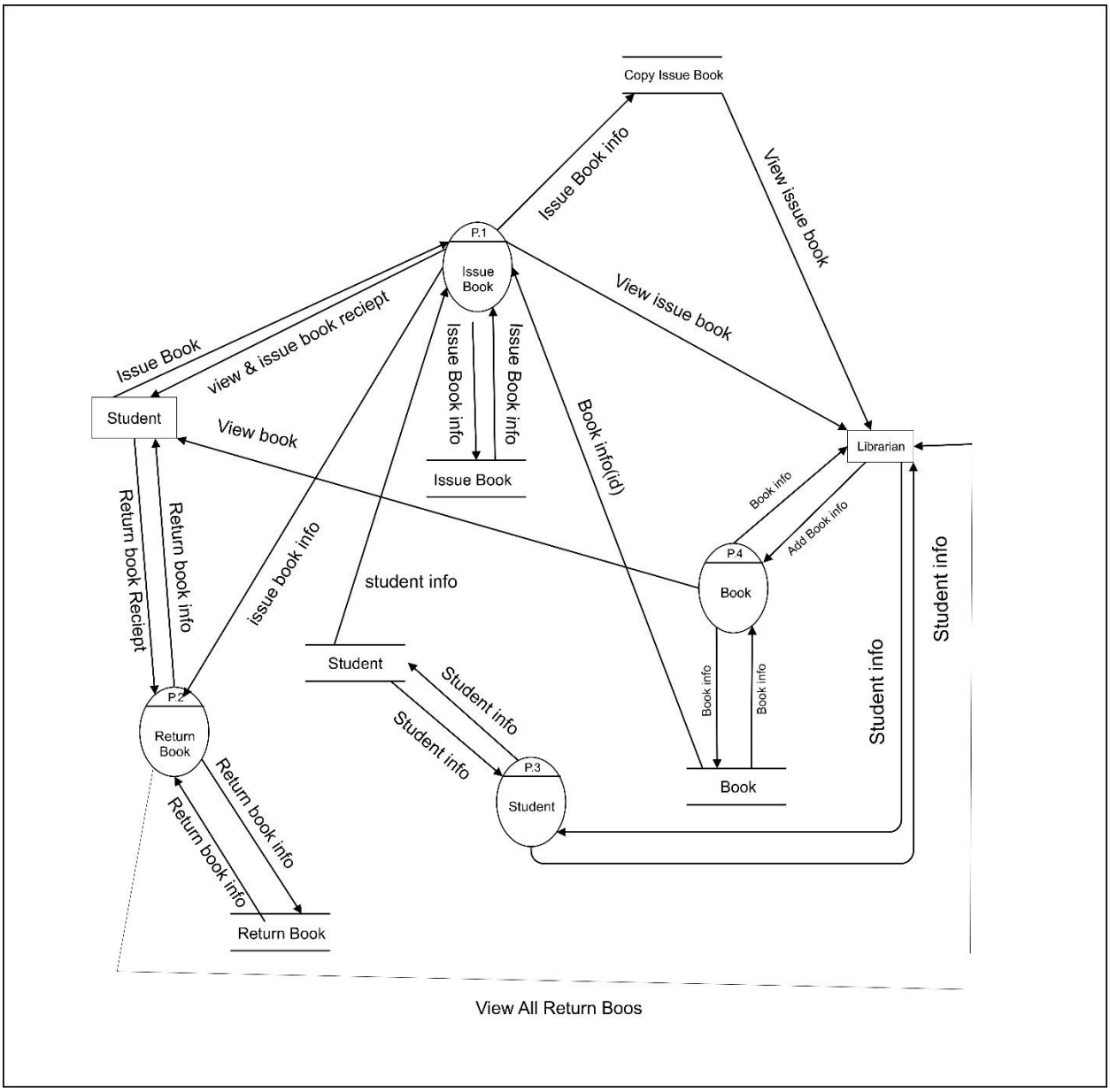
8. DATA FLOW DIAGRAM (DFD)

CONTEXT LEVEL DFD (0 LEVEL)



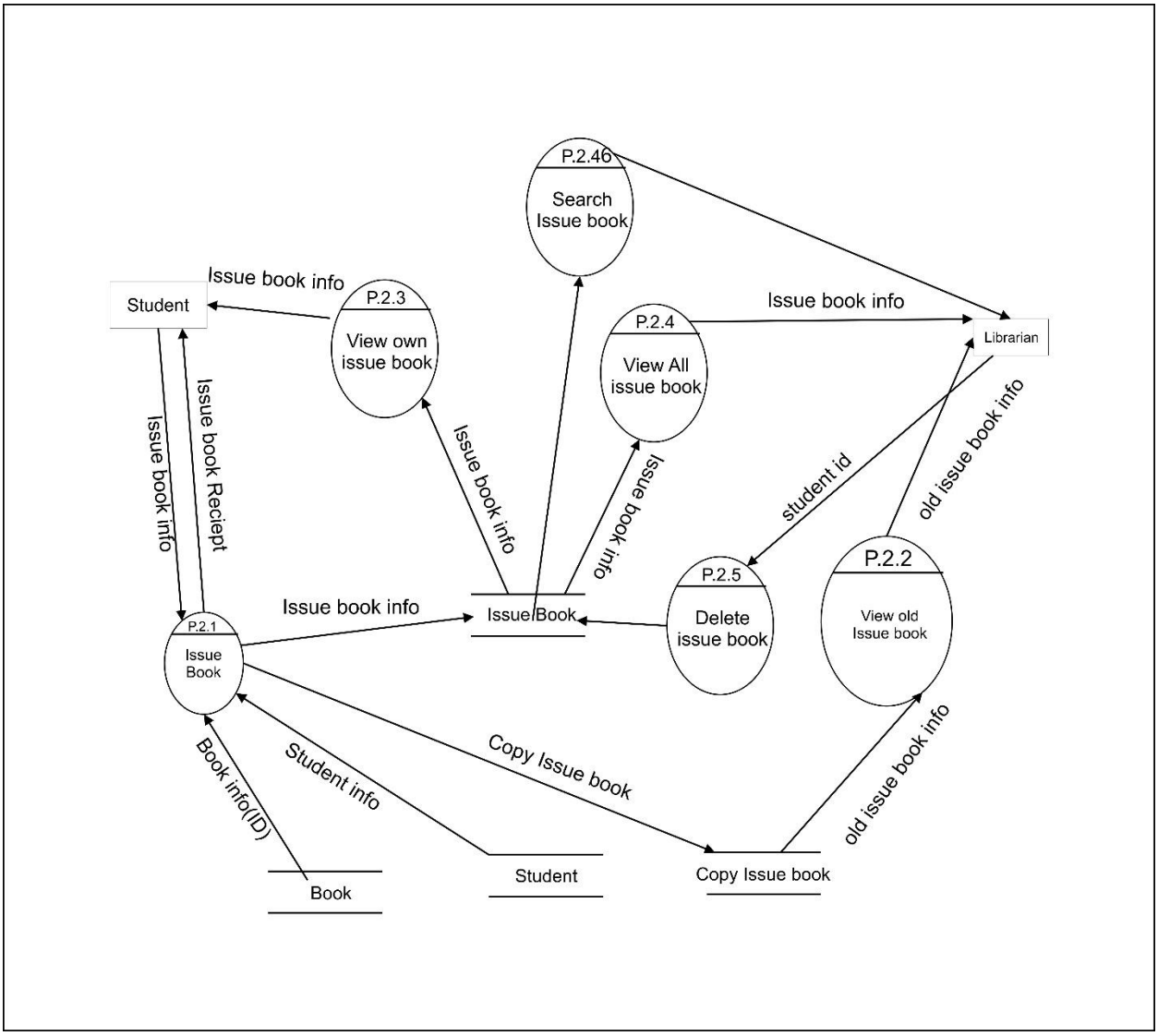
NOTE : STUDENT NOT ABLE TO ISSUE OR RETURN BOOK AND REGISTER BY OWN SELF THEY WILL NEED TO LIBRARIAN

1 LEVEL DFD

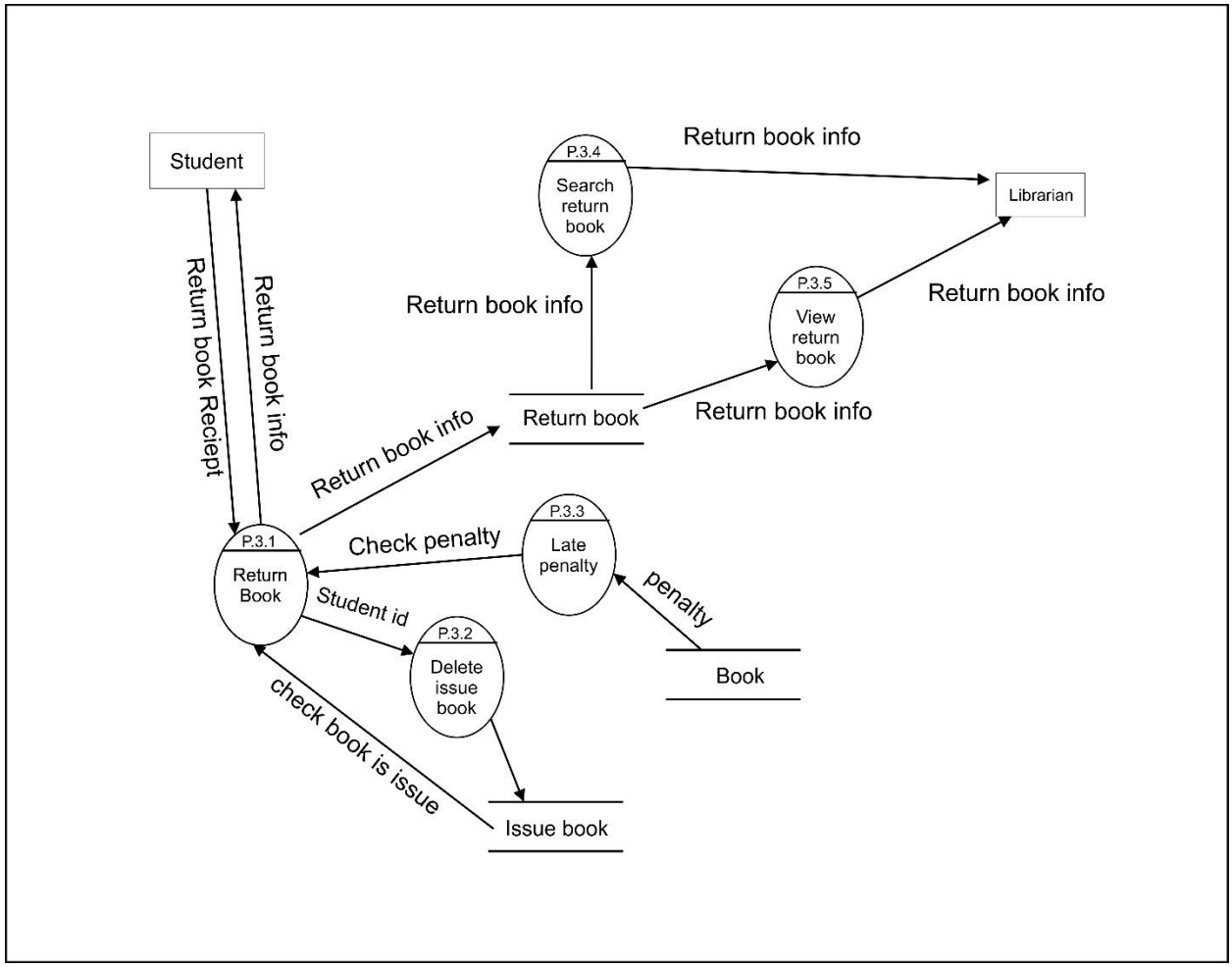


View All Return Boos

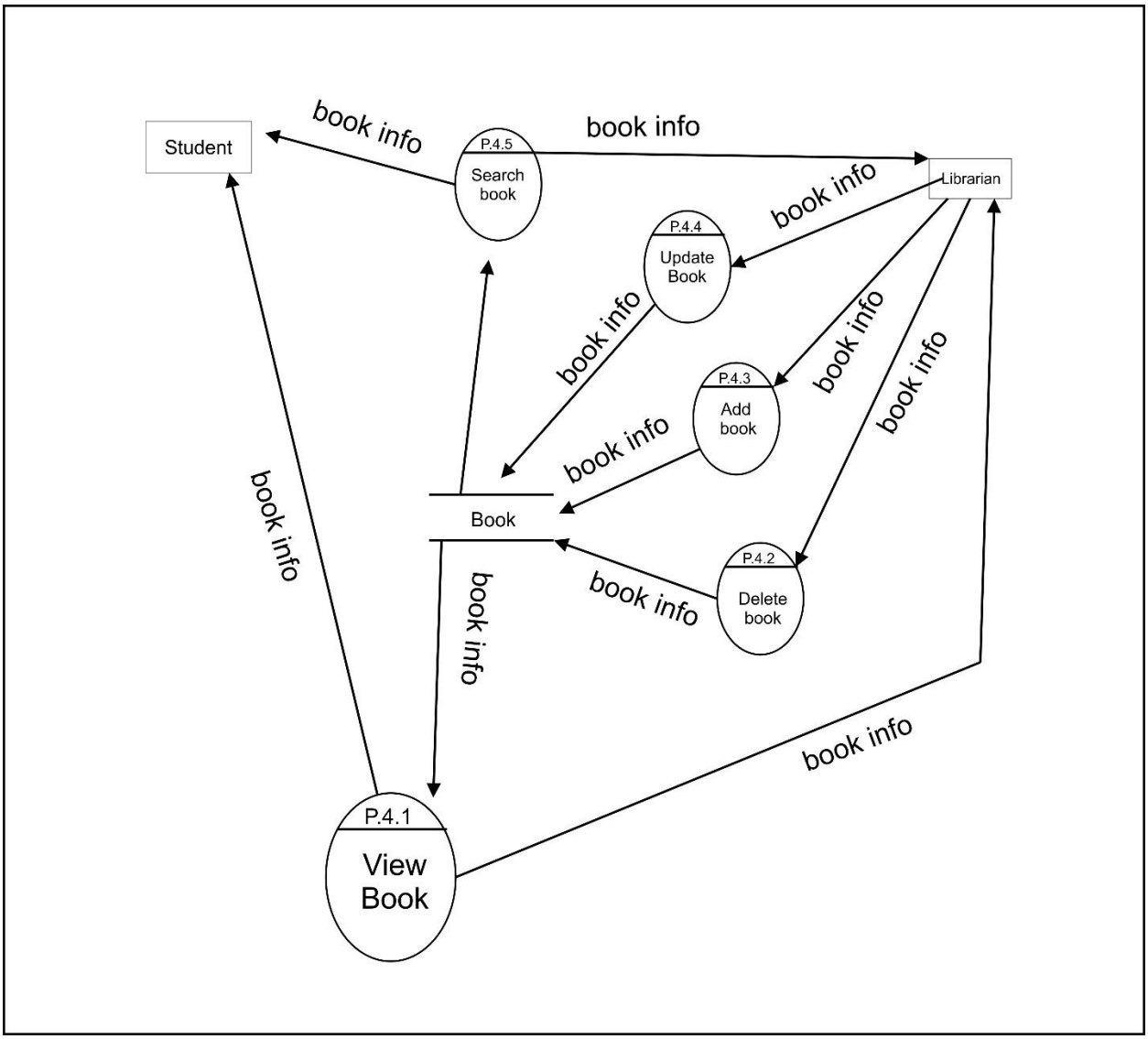
2.1 Issue Book Module



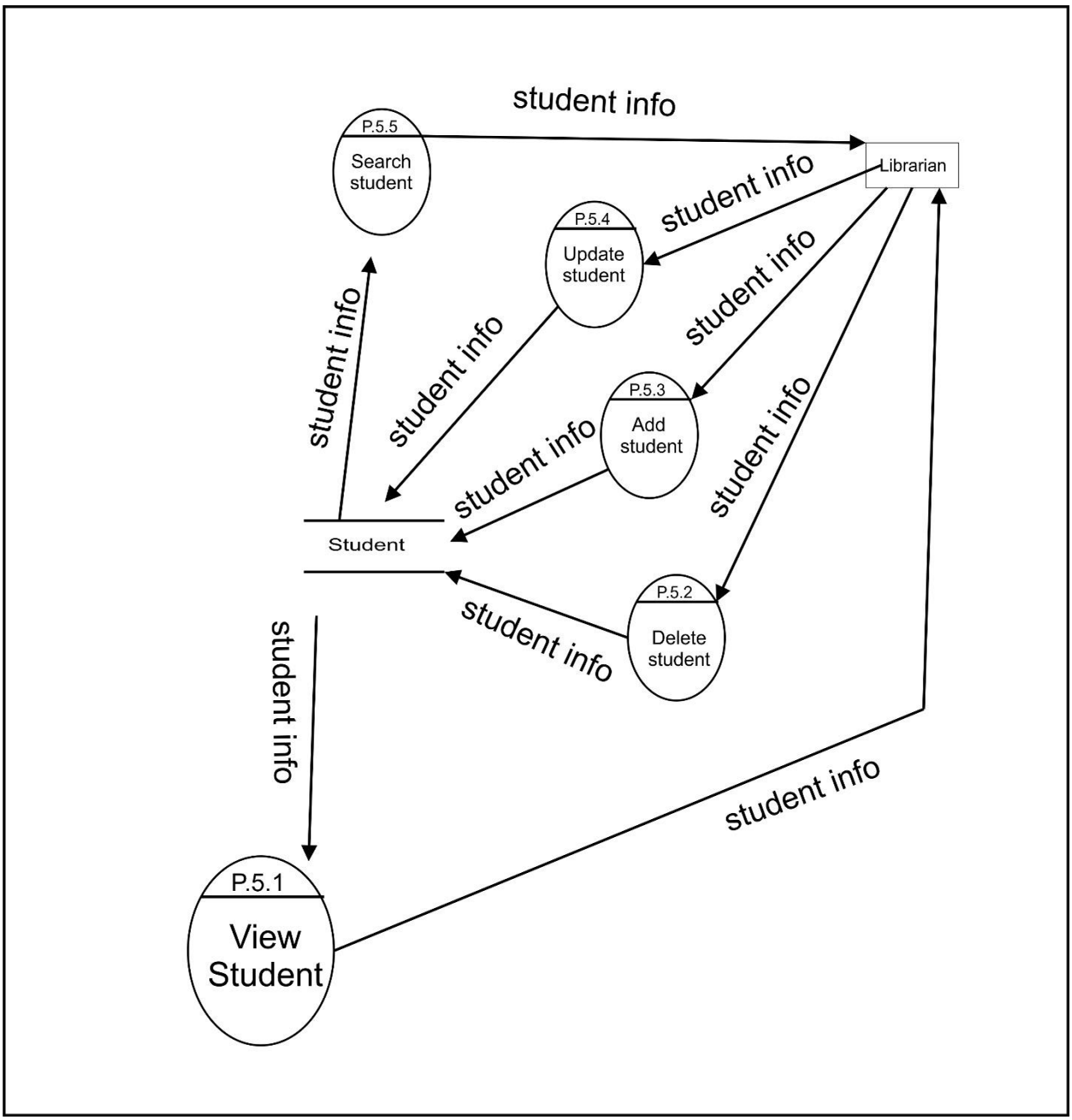
2.2 Return Book Module



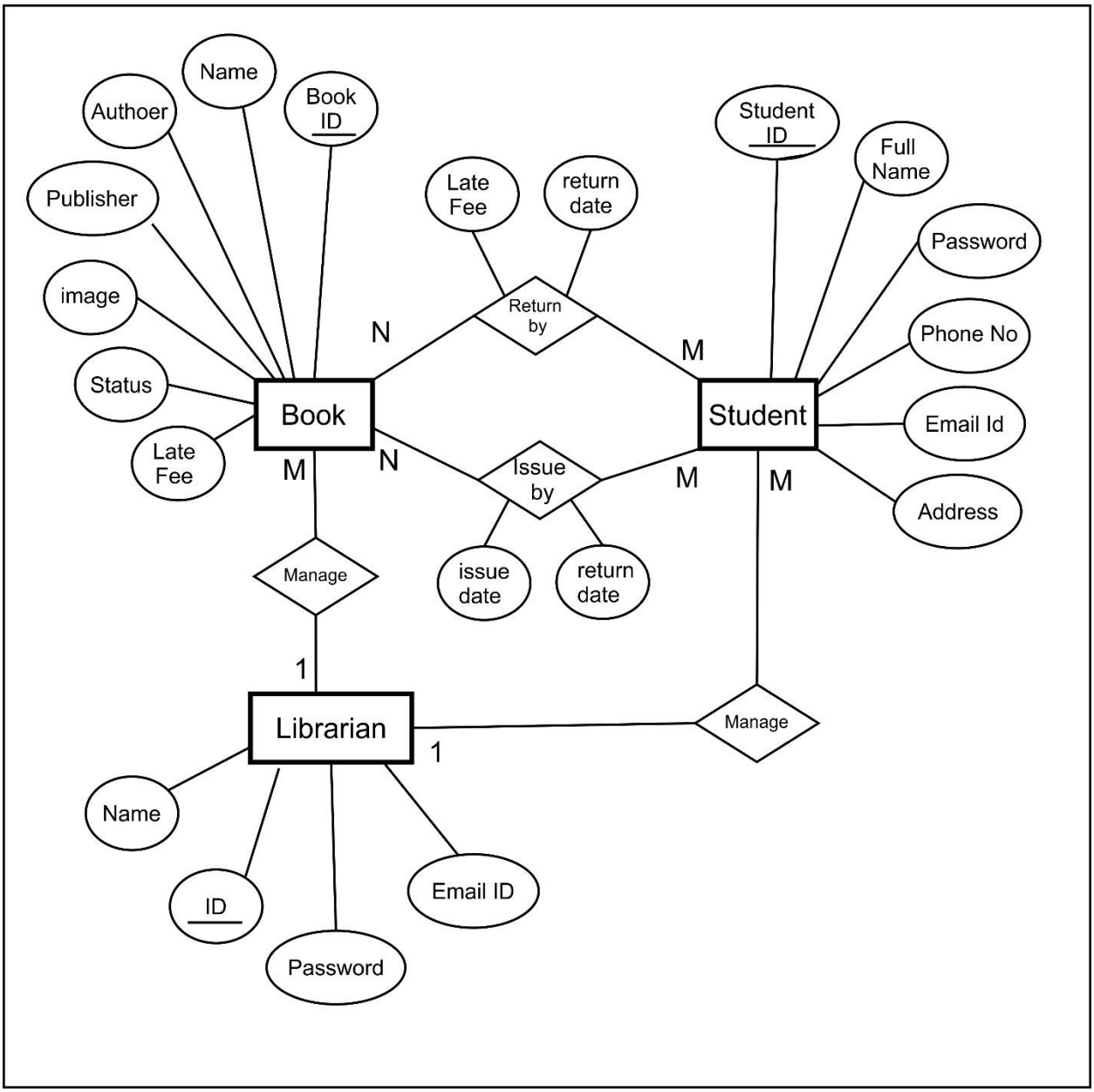
2.3 Book Module



2.4 Student Module



9. ENTITY RELATIONSHIP DIAGRAM (ERD)



10. Input & Output to the System

❖ **Student : -**	❖ **Librarian: -**
▪ Registration	▪ Login
▪ Login	▪ Search
▪ Search	▪ Manage All Book
▪ View the Book	▪ Manage All Students
▪ View Own Issue Book	▪ View All Book
▪ Issue Book	▪ Manage All Issue & Return Book
▪ Return Book	▪ View copy of Issue book
▪ Issue & Return Book Receipt	
▪ Help	

11. Module Description

Librarian Module: Librarian modules which define the process of maintain the records of library information. This can denote the details of books. Librarian have his or herown page in application by entering the login page.The librarian can be entered in the management system andmake the library transaction make as easy way. He can maintain a book transaction by the process of adding the book, view the issued book, Returnbook details

Student Modules: Student login has enrolled the activityof Student access in library bythis SLMS application. When the librarian have registeredthe student,they can get their own username and the password, by use of this they can entered and view the library information use of the login page. They can view the details of available book, return date and due amount from library

STUDENT MODULE

1. **Add Student Module:-**Student not able to register by own self they will need.to librarian . Librarian can register student and update and delete.

2. **Login Module:-**In this module a person can want to enter into this software project he/she must have pass through this module in this module user enter their student ID and password. In other word we can say that this is

authentication module because the user authenticates with his/her password and student ID.

3. **Search Module:-**In this module a person can easily find their Book name and its Book ID in search box. So the user find book without problem.

4. **View Book Module:-**Student can view all book and filter it.

5. **Issue Book Module :-** student can issue book for limit days(Using Book ID and Student ID) with librarian help and also get issue book receipt.
6. **Return Book Module:-** student can return the book under the provide days otherwise they will submit penalty fees and also get return book reciept

7. **View Own Issue Book:- St**udent can view all own issue books using student id.
8. **Help:-**Student can contact to librarian.

LIBRARIAN MODULE

1. **Manage Student Module:-** Librarian can add, edit, view & delete all student. Student details id ,name, password, phone no, Email ID, & address.

2. **Login Module:-**In this module a person can want to enter into this software project he/she must have pass through this module in this module user enter their Librarian ID and password. In other word we can say that this is

authentication module because the user authenticates with his/her password and librarian ID.

3. **Search Module:-** Librarian can search all student , book, issue book & return books.

4. **Manage Book Module:-**Librarian can add, edit, delete, & view all books Books details: Book id, book name, auther, publisher, image, status, and late fe**es**

5. **Copy Issue book :**This table is for backup because when student return the
6. book issue book table delete the issue book

12. Data Modelling (Data Dictionary/Data Table)

- **TABLE 1: -** book

Sr.no.	Field name	Data type	Constrain	Size	Description
1.	Book_id	int	Primary key	5	Auto generated book id
2.	Book_name	Varchar	Not null	60	Book Full Name
3.	auther	Varchar	Not null	30	Book Auther name
4.	Publisher	Varchar	Not null	30	Book publisher name
5.	Book_img	text	Not null	_	Book Image
6.	Status	Varchar	Not null	12	Status for book is available or not
7.	Late_fee	int	Not null	3	Late fee charge by book

- **TABLE 2: -** student

Sr.no.	Field name	Data type	Constrain	Size	Description
1.	student_id	int	Primary key	5	Auto generated Student id
2.	student_name	Varchar	Not null	20	Student Full Name
3.	password	Varchar	Not null	20	Student password
4.	Phone_no	int	Not null	13	Student Mobile number

5.	Email	varchar	Not null	30	Student email id
6.	Address	text	Not null	_	Student address

❖ **TABLE 3: -** issue_book

Sr.no.	Field name	Data type	Constrain	Size	Description
1.	student_id	int	Foreign Key	5	Student id for issue book
2.	Book_id	int	Foreign Key	5	Student Full Name
3.	Issue_date	date	Not null	_	Book issue date
4.	Return_date	date	Not null	_	Book return date

❖ **TABLE 4: -** copy_issue_book

This table is for backup because when student return the book issue book table delete the issue book

Sr.no.	Field name	Data type	Constrain	Size	Description
1.	student_id	int	Foreign Key	5	Student id for issue book
2.	Book_id	int	Foreign Key	5	Student Full Name
3.	Issue_date	date	Not null	_	Book issue date
4.	Return_date	date	Not null	_	Book return date

❖ **TABLE 5: -** return_book

Sr.no.	Field name	Data type	Constrain	Size	Description
1.	student_id	int	Foreign Key	5	Student id for issue book
2.	Book_id	int	Foreign Key	5	Student Full Name
3.	return_date	date	Not null	_	Return date When student return the book
4.	Late_fee	varchar	Not null(0)	3	Late submit charge when student return the book late

❖ **TABLE 6: -** librarian

Sr.no.	Field name	Data type	Constrain	Size	Description
1.	Librarian_id	int	Primary Key	5	Librarian id not auto generated
2.	password	varchar	Not null	20	Librarian password
3.	name	varchar	Not null	30	Librarian full name
4.	email	varchar	Not null	30	Librarian email id

13. Testing and Security:-

Software testing is a process of executing it (software and program) again and again with the purpose of finding error on it. In general test means checking something for fault, dysfunction and error. Similarly software testing simply means the process of checking software for any error in it.

WHITE BOX TESTING

White-box testing (also known as clear box testing, glass box testing, transparent box testing, and structural testing) is a method of testing software that tests internal structures or workings of an application, as opposed to its functionality (i.e. black-box testing). In white-box testing an internal perspective of the system, as well as programming skills, are used to design test cases. The tester chooses inputs to exercise paths through the code and determine the appropriate outputs. This is analogous to testing nodes in a circuit, e.g. in-circuit testing (ICT).

BLACK BOX TESTING

Black Box Testing, also known as Behavioural Testing, is a software testing method in which the internal structure/ design/ implementation of the item being tested is not known to the tester. These tests can be functional or non-functional, though usually functional.

This method is named so because the software program, in the eyes of the tester, is like a black box; inside which one cannot see. This method attempts to find errors in the following categories:

1. Interface errors
2. Errors in data structures or external database access
3. Behaviour or performance errors
4. Initialization and termination errors

Security:-

A. Basic System Security Measures

Password Protection: All accounts and resources must be protected by passwords which meet the following requirements, Must be at least eight characters long. Must NOT be dictionary or common slang words in any language, or be readily guessable. Must include at least three of the following four characteristics, in any order: upper case letters, lower case letters, numbers, and special characters

Firewall: Systems must be protected by a firewall that allows only those incoming connections necessary to fulfill the business need of that system. Client systems which have no business need to provide network services must deny all incoming connections.

B. Intermediate System Security Measures:-

Authentication and Authorization

Remove or disable accounts upon loss of eligibility: Accounts which are no longer needed must be disabled in a timely fashion using an automated or documented procedure.

Additional Requirements

Report potential security incidents: Potential security incidents must be reported to ITS Technology Security Services: security@nyu.edu.

Security review: During the design of the technical architecture, a review of the system must be requested from ITS Technology Security Services.

Physical access: The system must reside in a locked facility, to which only authorized personnel have access.

C. <u>Advanced System Security Measures</u>:-

Configuration and Maintenance:-

Follow advanced vendor security recommendations: This document cannot be comprehensive for all systems and applications available. Conform to best practices and recommendations outlined in vendor security whitepapers and documentation.

Partitioning: Systems may share hardware and resources only with other systems that have similar security requirements, regardless of their Criticality classification. Systems which share similar security requirements have user communities of similar size and character, similar firewall profiles, and similar technical requirements.

14. Scope of Future Application

Future Scope

FUTURE SCOPE OF APPLICATION :
This application can be easily implemented under various situations. We can add new features as and when we require. Reusability is possible as and when require in this application. There is flexibility in all the module
Extensibility
:
This software is extendable in ways that its original developers may not expect. The following principles enhances extensibility like hide data structure, avoid traversing multiple links or methods, avoid case statements on object type and distinguish public and private operations.

• Reusability
:
Reusability is possible as and when require in this application. We can update it next version. Reusable software reduces design, coding and testing cost by amortizing effort over several designs. Reducing the amount of code also simplifies understanding, which increases the likelihood that the code is correct. We follow up both types of reusability: Sharing of newly written code within a project and reuse of previously written code on new projects.

• Understandability:

A method is understandable if someone other than the creator of the method can understand the code (as well as the creator after a time lapse). We use the method, which small and coherent helps to accomplish this.

• Cost-effectiveness:

Its cost is under the budget and make within given time period. It is desirable to aim for a system with a minimum cost subject to the condition that it must satisfy the entire requirement
.

Scope of this document is to put down the requirements, clearly identifying the information needed by the user, the source of the information and outputs expected from the system

15. BIBLIOGRAPHY

I have consulted various books for the development of the project and preparing the documents:

- IGNOU STUDY MATERIAL
- WWW.GOOGLE.CO.IN
- PHP AND MY SQL WEB DEVELOPMENT
- EN.WIKIPEDIA.ORG
- http://www.w3schools.com/