INDIAN INSTITUTE OF INFORMATION TECHNOLOGY

Bhagalpur-83210, Bihar ,INDIA

Department Of Computer Science Engineering

SOFTWARE ENGINEERING

LAB(CS311)

GROUP 11

MINI PROJECT REPORT ON

ONLINE LIBRARY MANAGEMENT SYSTEM OF AN INSTITUTE

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Submitted to:-

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Head of Department, CSE

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY

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Department Of Computer Science Engineering

CERTIFICATE

This is to certify that this mini project titled

ONLINE LIBRARY MANAGEMENT SYSTEM OF AN INSTITUTE

Done by

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Ravikant Sharma   (1901053)

Shivank Bhardwaj (1901066)

has satisfactorily completed the 5th semester mini project in **SOFTWARE ENGINEERING LAB(CS311)** during academic year 2021-22.

Date-29/11/2021

Place- Bhagalpur   **Dr Pradeep Kumar Biswal**

Head of Department

ACKNOWLEDGEMENT

We take this occasion to thank God, almighty for blessing us with his grace and taking our endeavor to a successful culmination.We extend our sincere and heartfelt thanks to our esteemed guide,**Dr. Pradeep Kumar Biswal** for providing us with the right guidance and advice at the crucial junctures and for showing us the right way.We would like to thank the other faculty members also, at this occasion. Last but not the least,we would like to thank our friends and family for the support and encouragement they have given us during the course of our work.

Contents

PROBLEM STATEMENT

PROBLEMS FACED BY THE CLIENTS

1. **File lost :**When a computerized system is not implemented a file is always lost because of the human environment/mistakes.Some times due to some human error there may be a loss of records . Since physical Cards maintained for books may get lost or Individual ID cards issued to Library Members may get misplaced. Thus, such a system leads to inefficeincy.

2. **File damaged :**In absence of a computerized system, file is always lost due to some accident like spilling of water by some member on file accidentally.Besides some natural disaster like floods or fires may also damage the files.

3. **Difficult to search records When there is no computerized system:** there is always a difficulty in searching for records if the records are large in number . It becomes a time taking process and is unproductive.

4. **Space consuming :**After the number of records becomes large the need for physical storage of file and records also increases.

5. **Cost consuming :**Since each record is on paper ,files and other stationery will be needed which will increase the cost for the management of the library to some extent.

6. **Time Consuming:** A Library member will have to visit the library to do inquiries like what is fine due, or what ID of Book was issued to him in case the Library card is lost. If a library member requests a new library card that too will take time and effort.

PROJECTS AIMS & OBJECTIVES

The aims and objectives are as follows:

To make a User-friendly interface for the Library Admin, which is Time efficient.A login portal where Admin can issue books to students & add,delete books to library and can also make other Clerks who can issue books.

Login portal where students can find books issued to him/her and date of return and fine (if any) too.

To make both Admin and Library Members not worry of physical Library Cards as it gets DIGITAL here.

//A search column to search availability of books.

ABOUT THE SYSTEM

Library Management System is an application which refers to library systems which are generally small or medium in size. It is used by librarians to manage the library using a computerized system where he/she can record various transactions like issue of books, return of books, addition of new books, addition of new students etc. Books and student maintenance modules are also included in this system which would keep track of the students using the library and also a

detailed description about the books a library contains. With this computerized system there will be no loss of book record or member record which generally happens when a non computerized system is used. If the user's position is admin, the user is able to generate different kinds of reports like lists of students registered, list of books,list of clerks, list of payments. All these modules are able to help librarians to manage the library with more convenience and in a more efficient way as compared to library systems which are not computerized.

PRODUCT DESCRIPTION

Library Management System is a tool which helps users(librarians) to manage the library daily activity in electronic format. It reduces the risk of paper work such as file loss, file damage and time consuming. It can help users to manage the transaction or record more effectively and time-saving.

One of the unique features of this product is that admin has the power to create Clerks who work as LIBRARIANS .Also, Admin has access to a list of all activities performed by any member.

SYSTEM ANALYSIS

SYSTEM OBJECTIVES

1. **Improvement in control and performance:** The system is developed to cope - up with the current issues and problems of the library .The system can add users, validate users and is also bug free.

2. **Save cost:** After this system is implemented less human force will be required to maintain the library thus reducing the overall cost.

3. **Save time:** Librarian is able to search records by using a few clicks of mouse and few search keywords thus saving his valuable time. Most inputs are auto-filled, Only relevant information is asked for and User-friendly interface saves a lot of time.

SOFTWARE REQUIREMENT SPECIFICATION

PURPOSE:-

The purpose of this SRS document is to give readers detailed information about the project structure which includes descriptions and requirements of the project . After reading this document it is

expected that the reader has a clear understanding of what the project is about as a whole, the purpose of the project and how the delivered software is supposed to meet its requirement.

PROJECT SCOPE:-

1. The document only covers the requirements specifications for the Library Management System.
2. All the external interfaces and the dependencies are also identified in this document.
3. The feasibility study is to provide sufficient information to allow a decision to be made as to whether the Library Management System project should proceed and if

so, its relative priority in the context of other existing Library Management Technology.

Goals of the system's desktop component:

1. Give the authorized person the ability to control book transactions such as lending books for a fixed period

2. Give the authorized person the ability to search books ,access
   Records and generates reports.
3. Give the authorized person the ability to search members, add members and remove members.
4. Use an authentication method to assure only authorized Personals are accessing the desktop application.

Goals of the system's Website platform includes:
1. Provide students with a user account.
2. Enable students to search for a book they want to reserve.
3 Enable students to see their fine due, if any.
4. Students can see the time to return the books they have been allotted.

FUNCTIONAL REQUIREMENTS

The Library Management System must have the following functional requirements:

1. The Library Management System should store all information about librarians/Admin/Clerks and other users(students and faculty members) –their login info, books issued,etc.

2. The LibraryManagement System should store all information about the books, users, ID and password,books issued, Clerks in separate charts.

3. TheLibraryManagement System should allow searching books/journals by author,title, key words or availability.

4. The Library Management System should generate books issued and not returned ones list

5. The LibraryManagement System should allow users to view their personal information and status(numbers of books issued,books issued to them previously etc.)

6. The LibraryManagement System should provide modules to search, request and renew books.

7. The users should be able to view their fine due

8. The librarian must be able to add/remove books,manage users, process dues etc.

9. Users can change passwords from time to time ,to avoid any other issues.

10. Admin has the list of activities other users are doing on the platform, it may be essential in some deadlock/critical situations.

NON-FUNCTIONAL REQUIREMENTS

1. UsabilityRequirements:

The user interface should be interactive, simple and easy to understand and use. The system should prompt the user and administrator to login to the application for proper input criteria and proper message and hints should guide the users.

2. Error Handling:

Library management systems shall handle expected and unexpected errors in ways that prevent loss in information and long down time periods. It should alert the user about all the happenings.

3. Security Requirements:

The **LibraryManagementSystem** should provide databases' modification only for the highest authority after proper authorization. The system shall accommodate a high number of books and users without any fault.

4. Software Requirements:

          a. HTML, CSS, Bootstrap
          b. ORACLE DATABASE
          c. JAVA SERVER PROGRAMMING
          d. NET BEANS

5. Hardware Requirements :

          a. PROCESSOR: Inteli5, Inteli3, AMD Ryzen 5
          b. RAM: 8GB
          c. OPERATING SYSTEM: WINDOWS
          d. HARDDISK: 1TB

EXTERNAL INTERFACE REQUIREMENTS

User Interfaces:

The software provides a good graphical interface for the user and the administrator can operate on the system, performing the required

task such as create, update, and view the details of the book.

1. It allows users to view quick reports like Book Issued/Return in between particular times.
2. It provides a search facility based on different criteria.
3. The user interface must be resizable.
4. All the modules provided with the software must fit into this graphical user interface and accomplish the standard defined.
5. The Design should be simple and all the different interfaces should follow a standard template.
6. The user interface should be able to interact with the user management module and a part of the interface must be dedicated to the login/logout module.

SOFTWARE TOOLS USED

The whole Project is divided in two parts: the <u>front end</u> and the <u>back end</u>.
1. FRONT END

The front is designed by using html , CSS & Bootstrap.

a. **HTML:** HTML or HyperText Markup Language is the main markup language for creating web pages and other information that can be displayed in a web browser.HTML is written in the form of HTML elements consisting of tags enclosed in angle brackets
(like), within the web page content. HTML tags most commonly come in pairs like <h1> and </h2>, although some tags represent empty elements and so are unpaired, for example <img> The first tag in a pair is the start tag, and the second tag is the end tag

(they are also called opening tags and closing tags). In between these tags web designers can add text, further tags, comments and other types of text-based content. The purpose of a web browser is to read HTML documents and compose them into

visible or audible web pages. The browser does not display

the HTML tags, but uses the tags to interpret the content of the page.HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items.

b. **CSS:** CSS is the language for describing the presentation of Web pages, including colors, layout, and fonts. It allows one to adapt the presentation to different types of devices, such as large screens, small screens, or printers. CSS is independent of HTML and can be used with any XML based markup language. The separation of HTML from CSS makes it easier to maintain sites, share style sheets across pages, and tailor pages to different environments. This is referred to as the **separation of structure (or: content) from presentation.**

c. Bootstrap: Bootstrap is a free and open-source tool collection for creating responsive websites and web applications. It is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first websites. Nowadays, the websites are perfect for all the browsers (IE, Firefox, and Chrome) and for all sizes of screens (Desktop, Tablets, Phablets, and Phones).

- It is a Faster and Easier way for Web-Development.
- It creates Platform-independent web-pages.
- It creates Responsive Web-pages.
- Designed responsive web pages for mobile devices too.
- It is Free and open-source framework available

2. BACK END

The back end is designed by HTML, java in JSP which is server side technology. And Oracle database is used for storage.

Oracle Database: An Oracle database is a collection of data treated as a unit. The purpose of a database is to store and

retrieve related information. A database server is the key to solving the problems of information management. In general, a server reliably manages a large amount of data in a multiuser environment so that many users can concurrently access the same data. All this is accomplished while delivering high performance. A database server also prevents unauthorized access and provides efficient solutions for failure recovery.

JAVA:

- Java has been one of the most popular programming languages for many years.

- Java is Object Oriented. However, it is not considered as pure object-oriented as it provides support for primitive data types (like int, char, etc)

- The Java codes are first compiled into byte code (machine-independent code). Then the byte code runs on Java Virtual Machine (JVM) regardless of the underlying architecture.

- Java syntax is similar to C/C++. But Java does not provide low-level programming functionalities like pointers. Also, Java codes are always written in the form of classes and objects.

- Java is used in all kinds of applications like Mobile Applications (Android is Java-based), desktop applications, web applications, client-server applications, enterprise applications, and many more.

- When compared with C++, Java codes are generally more maintainable because Java does not allow many things which may lead to bad/inefficient programming if used incorrectly. For example, non-primitives are always references in Java. So we cannot pass large objects (like we can do in C++) to functions, we always pass references in Java. One more example, since there

are no pointers, bad memory access is also not possible.

- When compared with Python, Java kind of fits between C++ and Python. The programs are written in Java typically run faster than corresponding Python programs and slower than C++. Like C++, Java does static type checking, but Python does not.

JSP:

It stands for **Java Server Pages**. It is a server side technology,**not a framework.** It is used for creating web applications. It is used to create dynamic web content. In this JSP tags are used to insert JAVA code into HTML pages. It is an advanced version of Servlet Technology. It is a Web based technology that helps us to create dynamic and platform independent web pages. In this, Java code can be inserted in HTML/ XML pages or both. JSP is first converted into servlet by JSP container before processing the client's request.

- **Coding in JSP is easy :- As it is just adding JAVA code to HTML, does not require much advanced knowledge of java.**
- **Reduction in the length of Code :- In JSP we use action tags, custom tags etc.**
- **Connection to Database is easier :-It is easier to connect website to database and allows to read or write data easily to the database.**
- **Make Interactive websites :- In this we can create dynamic web pages which helps user to interact in a real time environment.**
- **Portable, Powerful, flexible and easy to maintain :- as these are browser and server independent.**
- **No Redeployment and No Re-Compilation :- It is dynamic, secure and**

platform independent so no need to re-compilation.

- **Extension to Servlet :- as it has all features of servlets, implicit objects and custom tags**

SYSTEM DESIGN

E-R DIAGRAM

An **Entity Relationship (ER) Diagram** is a type of flowchart that illustrates how "entities" such as people, objects or concepts relate to each other within a system. They mirror grammatical structure, with entities as nouns and relationships as verbs.
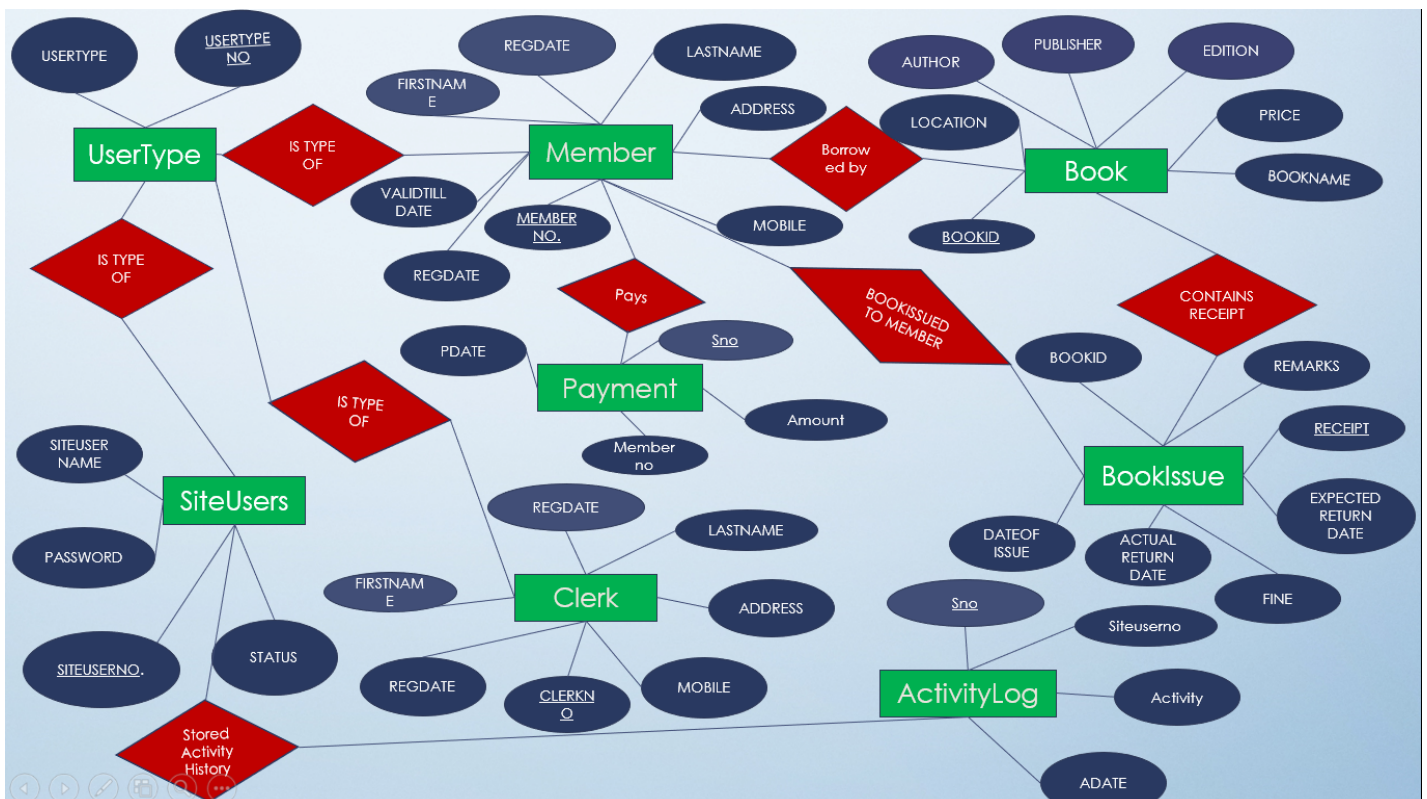
DATA FLOW DIAGRAM

      A **data-flow diagram** is a way of representing a **flow** of **data** through a **process** or a system (usually an information system). The **DFD** also provides information about the outputs and inputs of each entity and the **process** itself. The **data-flow diagram** is part of the structured-analysis modeling tools.

Level 0 Data Flow Diagram:-
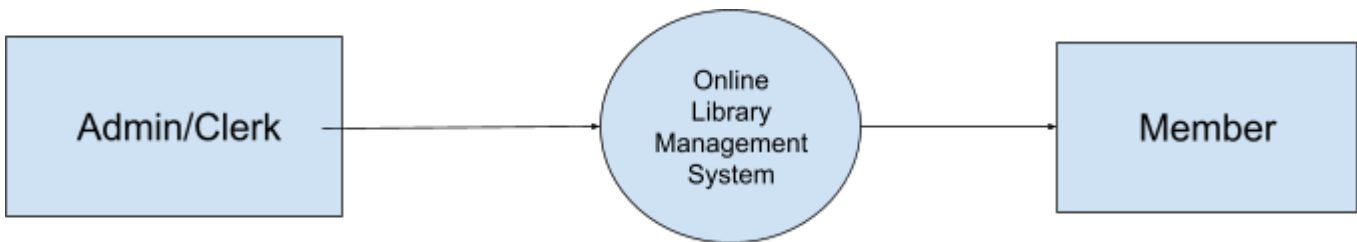
Level 1 Data Flow Diagram
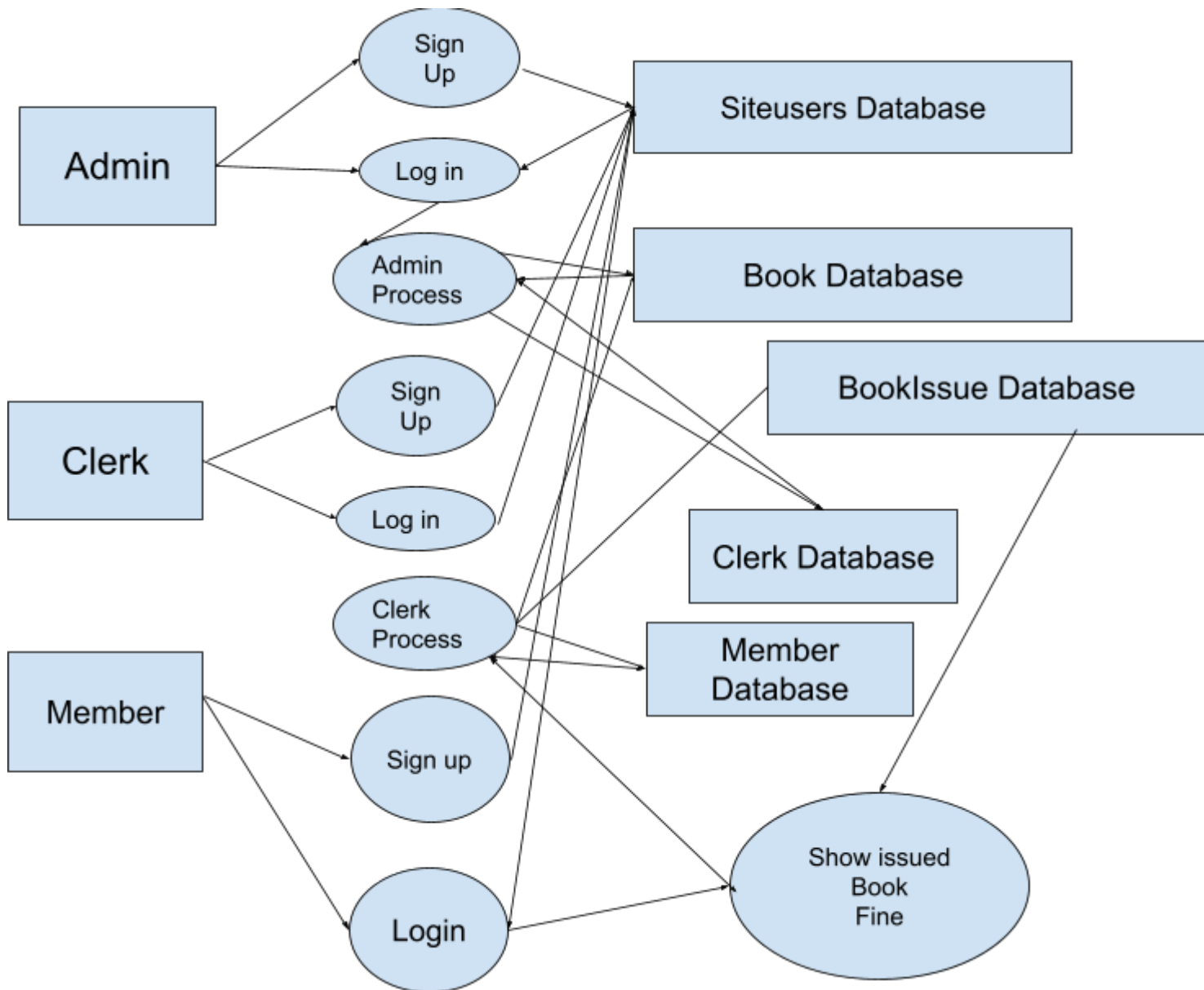
Level 2 Data Flow Diagram

DECISION TREE

A **decision tree** is a graph that uses a branching method to illustrate every possible outcome of a **decision**. **Decision trees** can be drawn by hand or created with a graphics program or specialized **software**. Informally, **decision trees** are useful for focusing discussion when a group must make a **decision.**

Login Decision Tree:-

Student/Admin Login
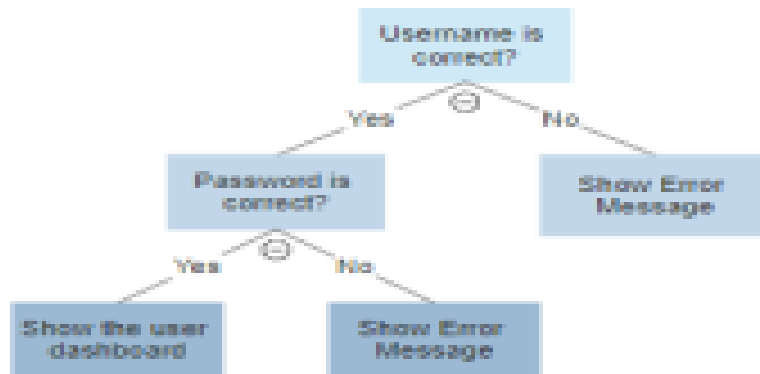
Decision Tree of Books issue to the students:-

Issuance of Books to Students
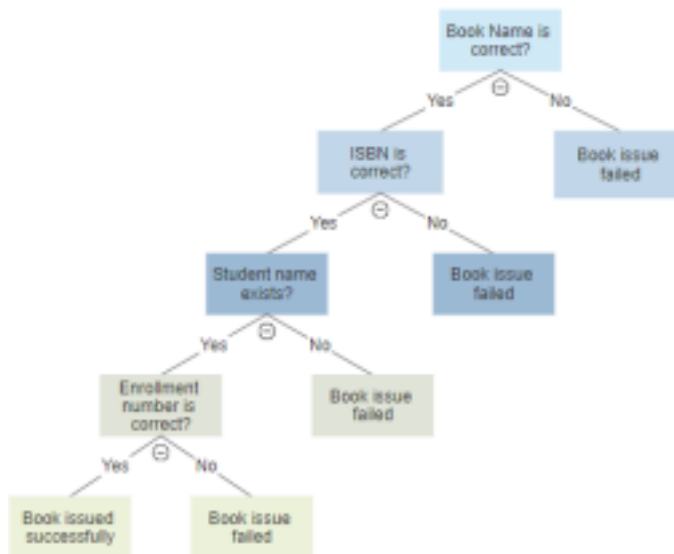
DECISION TABLE

The **decision table** is a **software testing** technique which is used for **testing** the system behavior for different input combinations. This is a systematic approach where the different input combinations and their corresponding system behaviors are captured in a tabular form.

Login Decision Table:-

Login:

Condition	case1	case2	case3
UserId	T	F	T
Password	F	T	T
Output	E	E	S

T = Correct Data Entry

F=Invalid Input

E = Error Message/Failure

S =Success

Issued Book to Student:

Decision Table of Books issue to the students:-

Condition	case1	case2	case3
UserId	T	F	T
BookId	F	T	T
Output	E	E	S

T = Correct Data Entry

F=Invalid Input

E = Error Message/Failure

S =Success

TABLE DESIGN

UserTypes Table

Field Name	Data Type	Comment
USERTYPENO	Number	PRIMARY KEY
USERTYPE	Varchar2 (50)	UNIQUE , NOT NULL

SiteUsers Table

Field Name	Data Type	Comment
SITEUSERNO	Number	PRIMARY KEY
SITEUSERNAME	Varchar2 (16)	UNIQUE, NOT NULL
PASSWORD	Varchar2 (16)	NOT NULL
USERTYPENO	Number	NOT NULL
STATUS	Varchar2 (30)	NOT NULL

Members Table

Field Name	Data Type	COMMENT
MEMBERNO	NUMBER	PRIMARY KEY
FIRSTNAME	Varchar2 (20)	NOT NULL
LASTNAME	Varchar2 (20)	NOT NULL
USERTYPENO	Number	REFRENCES USERTYPES(USERTYPENO), NOT NULL
ADDRESS	Varchar2 (80)	NOT NULL
REGDATE	Date (7)	NOT NULL
VALIDTILLDATE	Date (7)	NOT NULL
MOBILE	Varchar2 (10)	NOT NULL
SITEUSERNO	Number	REFRENCES SITEUSERS(SITEUSERNO)

Clerk Table

Field Name	Data Type	COMMENT
CLERKNO	NUMBER	PRIMARY KEY
FIRSTNAME	Varchar2 (20)	NOT NULL
LASTNAME	Varchar2 (20)	NOT NULL
USERTYPENO	Number	REFRENCES USERTYPES(USERTYPENO), NOT NULL
ADDRESS	Varchar2 (80)	NOT NULL
REGDATE	Date (7)	NOT NULL
MOBILE	Varchar2 (10)	NOT NULL
SITEUSERNO	Number	REFRENCES SITEUSERS(SITEUSERNO)

Books Table

Field Name	Data Type	Comment
BOOKID	Number	PRIMARY KEY
BOOKNAME	Varchar2 (60)	NOT NULL
PUBLISHER	Varchar2 (50)	NOT NULL
AUTHER	Varchar2 (50)	NOT NULL
PRICE	Number	NOT NULL
EDITION	Varchar2 (10)	NOT NULL
LOCATION	Number	REFRENCES MEMBERS(MEMBERNO)

BookIssue Table

Field Name	Data Type	Content
RECEIPT	Number	Primary Key
USERID	Number	REFERENCES MEMBERS(MEMBERNO)
BOOKID	Number	NOT NULL
DATEOFISSUE	Date	NOT NULL
EXPECTEDRETURNDATE	Date (7)	NOT NULL
ACTUALRETURNDATE	Date (7)	
REMARKS	Varchar2 (40)	
FINE	Number	NOT NULL
EXTRAFINE	Number	NOTNULL

Payments Table

Field Name	Data Type	Comment
SNO	Number	PRIMARY KEY
MEMBERNO	NUMBER	REFERENCES MEMBERS (MEMBERNO) NOT NULL
AMOUNT	Number	NOT NULL
PDATE	DATE	NOT NULL

ActivityLog Table

Field Name	Data Type	Comment
SNO	Number	PRIMARY KEY
SITEUSERNO	Number	REFERENCES SITEUSERS(SITEUSERNO), NOT NULL
ACTIVITY	VARCHAR(300)	NOT NULL
ADATE	DATE	NOT NULL

SOFTWARE SNAPSHOT/IMPLEMENTATION
FRONT- END SNAPSHOTS:-

Library Management System

Log In

username

password

Remember Me

Login

Indian Institute of Information Technology Bhagalpur

Library Management System

Library photo
scene-2

Latest Book

- HC Verma
- Organics Chemistry
- Theory of Relativity
- Internet of Things

Latest Book

- HC Verma
- Organics Chemistry
- Theory of Relativity
- Internet of Things

Latest Book

- HC Verma
- Organics Chemistry
- Theory of Relativity
- Internet of Things

Latest Books

- HC Verma
- Organics Chemistry
- Theory of Relativity
- Internet of Things

Developed by: Shivank Bhardwaj, Ravikant Sharma, Abhishek Maurya

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Library Management System

Book Entry

Book Name

Book Name

Publisher

Publisher

Author

Author

Price

Price

Edition

Edition

Submit

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Library Management System

Book List

Search

Enter Anything to Search

BOOKID	BOOKNAME	PUBLISHER	AUTHOR	PRICE	EDITION	LOCATION	Action
57	Ram Charit Manas	Awadh	Tulsidas	199999	1600	61	Edit
58	C programming	Macro	David	120	2017	0	Edit
59	Art of Programming	King Kong	william	133	2019	0	Edit
60	c++ programming	rewa boy	Aakash	399	2017	0	Edit
80	Ram Charit Manas	Abhishek	BNB	1000	1	0	Edit
81	Ram Charit Manas	IIIT Bhagalpur	abcd	500	4	64	Edit
82	Operating System	IIIT Bhagalpur	Dr. Pradeep Biswal	500	1	64	Edit
55	Operating System	Oswal	Aakash	190	2014	46	Edit
56	Operating System	Oswal	Aakash	199	2018	0	Edit

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Library Management System

Book Return

Search

Enter Anything to Search

RECEIPT	USERID	BOOKID	DATEOFISSUE	EXPECTEDRETURNDATE	ACTUALRETURNDATE	REMARKS	FINE	EXTRAFINE	Action
70	61	57	2021-11-30	2021-12-15	null	null	0	0	Return
71	64	82	2021-11-30	2021-12-15	null	null	0	0	Return
72	64	81	2021-11-30	2021-12-15	null	null	0	0	Return
62	46	55	2021-11-16	2021-12-01	null	Naya book hai	0	0	Return

Clerk Registration

First Name

First Name

Last Name

Last Name

Mobile

Mobile no

Address

Address

Registration Date

11/30/2021

Usertype

Clerk

User Name

User Name

Password

Password

Register

Indian Institute of Information Technology Bhagalpur

Library Management System

Due List

Total Fine	Amount Collected	Remaining Fine
230	114	116

Search

Enter Anything to Search

MEMBERNO	NAME	MOBILE	DUE	Action
47	Champak Roy	5655655656	15	Pay
46	Abhishek bhau	898989	101	Pay

Developed by: Shivank Bhardwaj, Ravikant Sharma, Abhishek Maurya

Indian Institute of Information Technology Bhagalpur

Library Management System

Member Registration

First Name

First Name

Last Name

Last Name

Mobile

Mobile no

Address

Address

Registration Date

11/30/2021

Registration Expiry Date

11/30/2022

Usertype

Student

User Name

User Name

Password

Password

Register

Back-end Database:-
Activity-log:

SNO	SITEUSERNO	ACTIVITY	ADATE
100	1	Book 55 Inserted	16-NOV-21
101	1	Book 56 Inserted	16-NOV-21
102	1	Member no. 46 added with Siteuserno 51	16-NOV-21
103	1	Book 55 Updated	16-NOV-21
104	1	Book 55 Issued with Receipt 62	16-NOV-21
105	1	Book 57 Inserted	16-NOV-21
106	1	Member no. 47 added with Siteuserno 52	16-NOV-21
107	1	Book 58 Inserted	16-NOV-21
108	1	Book 59 Inserted	16-NOV-21
109	1	Book 57 Updated	16-NOV-21

More than 10 rows available. Increase rows selector to view more rows.

Book details table:

BOOKID	BOOKNAME	PUBLISHER	AUTHOR	PRICE	EDITION	LOCATION
57	Ram Charit Manas	Awadh	Tulsidas	199999	1600	61
58	C programming	Macro	David	120	2017	0
59	Art of Programming	King Kong	william	133	2019	0
60	c++ programming	rewa boy	Aakash	399	2017	0
80	Ram Charit Manas	Abhishek	BNB	1000	1	0
81	Ram Charit Manas	IIIT Bhagalpur	abcd	500	4	64
82	Operating System	IIIT Bhagalpur	Dr. Pradeep Biswal	500	1	64
55	Operating System	Oswal	Aakash	190	2014	46
56	Operating System	Oswal	Aakash	199	2018	0

Book Issue status table:

RECEIPT	USERID	BOOKID	DATEOFISSUE	EXPECTEDRETURNDATE	ACTUALRETURNDATE	REMARKS	FINE	EXTRAFINE
64	46	56	16-NOV-21	01-DEC-21	17-NOV-21	book phada isine	0	100
65	46	60	16-NOV-21	01-DEC-21	16-NOV-21	ghar lejao	0	90
70	61	57	30-NOV-21	15-DEC-21	-	-	0	0
71	64	82	30-NOV-21	15-DEC-21	-	-	0	0
72	64	81	30-NOV-21	15-DEC-21	-	-	0	0
62	46	55	16-NOV-21	01-DEC-21	-	Naya book hai	0	0
63	47	57	16-NOV-21	01-DEC-21	18-NOV-21	cover torn	0	40

Clerk info table:

CLERKNO	SITEUSERNO	FIRSTNAME	LASTNAME	ADDRESS	MOBILENO	REGISTRATIONDATE	USERTYPENO
9	59	Shyam	kumar	UP	7878	28-NOV-21	1
7	53	Shivank	Bhardwaaj	Lanka	8080808080	21-NOV-21	1
8	58	Ramu	kumar	bihar	5757575	28-NOV-21	1

Member table:

MEMBERNO	FIRSTNAME	LASTNAME	USERTYPENO	ADDRESS	REGDATE	VALIDTILLDATE	MOBILE	SITEUSERNO
47	Champak	Roy	2	Pandeypur	17-NOV-21	18-NOV-22	5655655656	52
61	Sanjeev	Kumar	2	adsfalkj	27-NOV-21	27-NOV-22	8090934	54
62	Ravikant	Sharma	2	Patna	28-NOV-21	28-NOV-22	8080808080	55
64	Abhishek	Maurya	174	SA 15/58 Mawaiya Sarnath Varanasi , Uttar Pradesh	28-NOV-21	28-NOV-22	8957057183	57
0	Library	Library	2	Library	01-JAN-21	01-JAN-00	0000000000	0
46	Abhishek	bhau	2	Sarnath	17-NOV-21	25-NOV-21	898989	51

Payments sheet table:

SNO	MEMBERNO	AMOUNT	PDATE
21	46	4	16-NOV-21
22	46	30	16-NOV-21
23	47	5	16-NOV-21
24	47	1	16-NOV-21
25	47	5	16-NOV-21
26	47	5	21-NOV-21
27	47	5	21-NOV-21
28	46	50	27-NOV-21
19	46	5	16-NOV-21
20	47	4	16-NOV-21

UserId and Password Table:

SITEUSERNO	SITEUSERNAME	PASSWORD	USERTYPENO	STATUS
50	shiv	asdfa	1	Active
51	abhi	shek	2	Active
52	Champak	roy	2	Active
53	shiva	lanka	1	Active
54	sanjeev	galgotia	2	Active
55	Ravi	sharma	2	Active
56	Abhi	8957	2	Active
57	Abhish	8957	174	Active
58	ramu	kaka	1	Active
59	shyam	ram	1	Active

UserType Table:

USERTYPENO	USERTYPE
2	Student
174	Teacher
0	Admin
1	Clerk

SYSTEM TESTING

The aim of the system testing process was to determine all defects in our project .The program was subjected to a set of test inputs and various observations were made and

based on these observations it will be decided whether the program behaves as expected or not. Our Project went through two levels of testing

1.Unit testing

2.Integration testing

UNIT TESTING

Unit testing is undertaken when a module has been created and successfully reviewed .In order to test a single module we need to provide a complete environment i.e. besides the module we would require The procedures belonging to other modules that the module under test calls Non local data structures that module accesses. A procedure to call the functions of the module under test with appropriate parameters.

1. Test For the login

i) **Testing login form**-This form is used for login of admin/clerk/student on the system. In this we enter the username and password if both are correct, the administration page will open, otherwise if any of data is wrong it will again ask for username and password and print a message as INVALID USERID or PASSWORD.

ii) **Student book issue** - In this section the admin just needs student ID and the book ID and then issues the book from the main library database . It also contains a fine calculation feature in which if a student fails to return their book then a fine will be added day by date which is displayed in the side menu.

ii) **Book Addition**- Admin can enter details of a book and can add the details to the main book table ,update it, also delete it ,if required.

2.Creating New Account

Test for account creation- This form is used for new account creation when Admin/clerk fill the form completely ,assign a user id and password (this can be changed later). Now User is a library member and can ask the clerk to issue him any book of his choice.

INTEGRATION TESTING

In this type of testing we test various integration of the project module by providing the input .The primary objective is to test the module interfaces in order to ensure that no errors are occurring when one module invokes the other module.