System Analysis and Design SE13324
Semester 1_ 2023-2024
Project 3 Phases

LibraTech

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Phase 1

Vision

To revolutionize library experiences, and set the standard for the future of libraries worldwide.

Mission

Our mission is to empower libraries and their users through innovative technology solutions. We are dedicated to developing and implementing a user-friendly library management system that enhances efficiency for both users and librarians. By leveraging automation, accessibility, and data-driven insights, our mission is to transform libraries into dynamic spaces that inspire learning, foster community connections, and adapt to the evolving needs of the digital age.

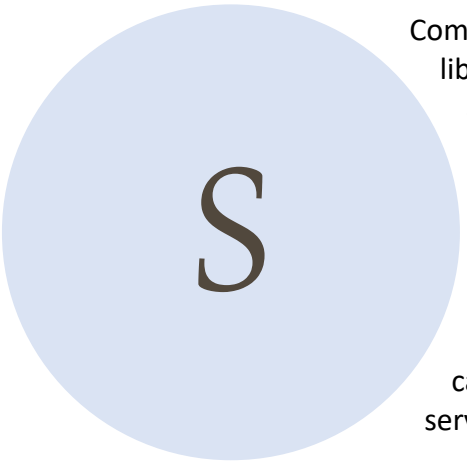
Objectives and Goals

* Enhance User Experience by developing features, interfaces, and functionalities to facilitate accessibility, ease of use, and overall satisfaction.
* Establish a culture of continuous improvement by gathering user feedback, conducting regular assessments, and implementing updates to meet evolving needs and expectations.
* Establish a global existence by initially expanding within local markets, perfecting our cutting-edge systems, and subsequently extending our influence on an international scale.
* Produce an active community in libraries by utilizing our systems to organize events, share announcements, and promote collaborative initiatives that unite individual.
* Optimize library operations by offering tools for efficient cataloging, ordering, and data analysis, enabling librarians to focus on curating engaging content and services.
* Lead in technological innovation by continuously implementing advancements, ensuring our library management solutions stay at the forefront and remain cutting-edge and adaptable.

SWOT Analysis

Strength

User-Friendly Interface: The system's design ensures that it is easy to use for both customers and librarians, regardless of their level of technical skills



Comprehensive Inventory Management: The system efficiently manages the library's inventory, allowing librarians to perform a variety of tasks, from adding and editing items to removal and checking. This guarantees the collection of the library stays current and well-organized.

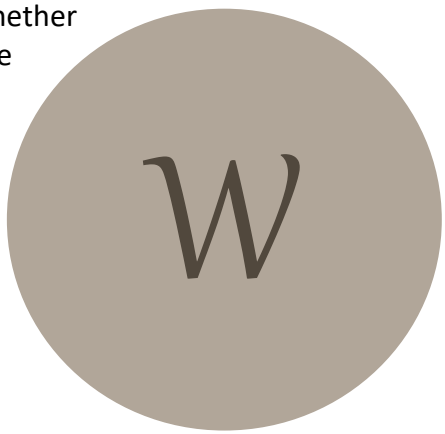
Efficient Book Borrowing Process: The system simplifies the book borrowing process, making it efficient for both librarians and customers

Members' Privilege Clarity and Access Enhancement: The virtual membership card simplifies the user experience, giving members instant access to all services as well as providing clear views of their privilege

Inventory Optimization Analysis: The system generates data to help improve the library's collection and ensure it stays updated with latest and trending books.

Weaknesses

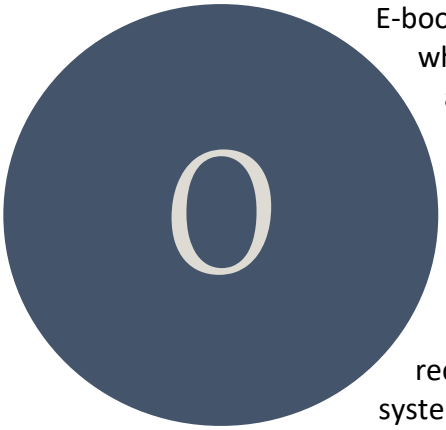
Data Entry and Migration Challenges: Entering all the books into the system, whether as part of the initial setup or during data migration from an older system, can be time-consuming and may require significant effort. This process should be carefully planned to ensure data accuracy and avoid data loss or corruption.



Training Needs: Users and librarians may need training to utilize the system effectively, especially for its advanced features.

Dependency on Mobile App: Both users who do not have the application and elderly people who are unfamiliar to using mobile devices may face challenges and may need assistance from librarians.

Opportunities

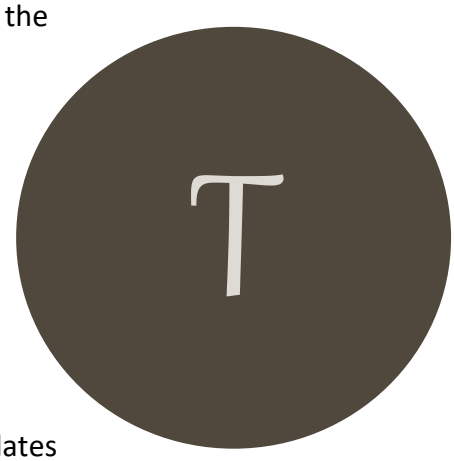


E-book Inclusion: Adding e-books to the library offers a way to attract more customers who are digital readers and also, readers will be able to access new releases from authors all over the world immediately, rather than having to wait weeks for physical copies to arrive at the library.

Market Expansion: Considering offering the library management system to other libraries to increase revenue and market share.

Enhancing User Interaction: Implementing features such as user reviews, book recommendations, and reading lists can improve how customers interact with the system.

Threats



Competition: There are several other library management systems available on the market, some of which offer more advanced features and may attract libraries away from your system.
Budget Constraints: Our ongoing financial limitations might make it difficult to invest in system improvements, updates, or security enhancements.

Technological Changes: Rapid advancements in technology might quickly make our system old-fashioned, which means we'll need to keep updating and adapting it constantly.

User Resistance: Existing users may resist changes to the current system or the adoption of new technology, making it challenging to implement necessary updates and improvements.

Business Case

What is our project about?

LibraTech is an all-inclusive library management system designed to optimize and improve a library's operations. For both staff and clients, LibraTech offers unique interfaces that are customized to meet their individual demands and functions within the library ecosystem with features that improve the library experience, offer tailored recommendations, and simplify library management tasks.

Why are we doing this project?

Local book-reading is plummeting and it has become difficult to find books, so we have decided to create this system to help readers find their books as well as make library management much easier and more transparent.

What are the risks of doing this project?

1-Since we gather data about our members, privacy violations and lack of data security are probable risks

2-Trading in contraband, pirated, or banned books may be a huge risk

3-Risks concerning library growth such as scalability concerns (system's inability of accommodating increasing data and user loads) and cost overrun (unforeseen obstacles and hindrances may cause misguided initial budget)

4-Losing customers during implementation and/or deployment

What are the risks of not doing this project?

1-The number of local book readers has deteriorated immensely, not doing this project will only cause the problem to worsen even more

2-Usage of older systems that no longer meet today's standards, which will cause:

- 2.1-the use of incompetent systems
- 2.2-reduction in competitiveness in this digital world

3-Reduced accessibility for readers as well as reduced member engagement

4-Reduced Collaboration between employees

Preliminary Investigation

Step 1-Understanding the Opportunity:

LibraTech is designed for a seamless experience, users benefit from simplified access, automated processes, and self-checkout options. Librarians enjoy enhanced efficiency with electronic orders and streamlined cataloging. Discover how our system transforms user interactions and empowers library staff for a more dynamic and engaging experience.

User Benefits:

It offers users a seamless experience by eliminating the need for physical library cards, making access quicker and more convenient. With automated classification, finding and retrieving books becomes faster. Self-checkouts empower users to independently manage their borrowing, and the online database extends access hours with advanced search options based on various criteria. Individual accounts simplify user management, storing relevant information and preferences. Additionally, the system enhances community engagement through announcements and event notifications.

Employee Benefits:

For librarians, the system streamlines processes, enabling efficient electronic book orders, seamless cataloging of new arrivals, and easy classification. It also facilitates statistical analyses for continuous improvement. The system ensures data security through regular backups, offering peace of mind. Overall, these features.

All in all, there isn't a single process in the library that this system does not enhance, simplify or replace with the exception of the fundamental act of reading itself, ensuring a more effective and streamlined workflow for library staff and a more comfortable and enjoyable user experience.

Step 2-SCOPE AND CONSTRAINTS

CONSTRAINTS

Copyright Compliance: The system must follow copyright laws to respect authors' rights and ensure proper management of books in the library.

Content Guidelines: The system will restrict books that promote ideas conflicting with societal and state values, ensuring the library's collection aligns with community standards and expectations

M Must-Have

Critical Library Operations: Including user registration, searching books, checkout, fine calculation, branch management, and real-time availability information, and overall control over all library features, including borrowing and membership.

Mobile App for the system to enhance accessibility and on-the-go services.

User Training: Training for librarians to use the library management system efficiently

S Should-Have

User Notifications: Implement notifications to remind users about due dates, reserved books, and other important updates.

Analytics for Inventory Optimization: Tools to optimize the library's collection based on data analysis and user preferences.

Security Enhancement: Make sure the system has solid safety features, such as user authentication, encryption, and frequent checks to protect user information and maintain system

C Could-Have

Advanced Search Features: Implementation of advanced search options, giving users the ability to easily find books using filters like topic, author, and more

Collaboration Tools: Let users work together by creating and sharing reading lists, reviews, and participating in community activities.

Event Planner Features: Extra tools to help event coordinators schedule events, send notifications, and view member data

W Won’t-Have

Automated Shelf Organization: The system won't detect how shelves are organized. Librarians are free to organize the books however they see fit, and they will enter their placement manually into the system.

Virtual Library Inclusion: The system only manages books physically on the library's grounds; it won't include a virtual library.

Step 5-Feasibility Analysis

Technical

A new hardware has to be bought to support the new system, with addition to network devices for internet, and a device for self check-in and check-out

The system will have capacity for future growth, in case a new branch for the library opens, it can easily be integrated with the system

The system will integrate with system of supplier companies for it to be able to automatically place orders

Operational

The library staff might not adapt to the new system easily, therefor training will be needed so that employees can effectively use the system

The system deployment might take time and might effect library operations until it's fully deployed

It will take time for users to adjust to the system change

The new system will result in workforce reduction, as the system will take care of many tasks that were done by employees

To borrow books, users will now need their phones and internet access

Economical

A technician should be hired to assure system runs smoothly and internet is properly working

Cost for hardware

Training cost

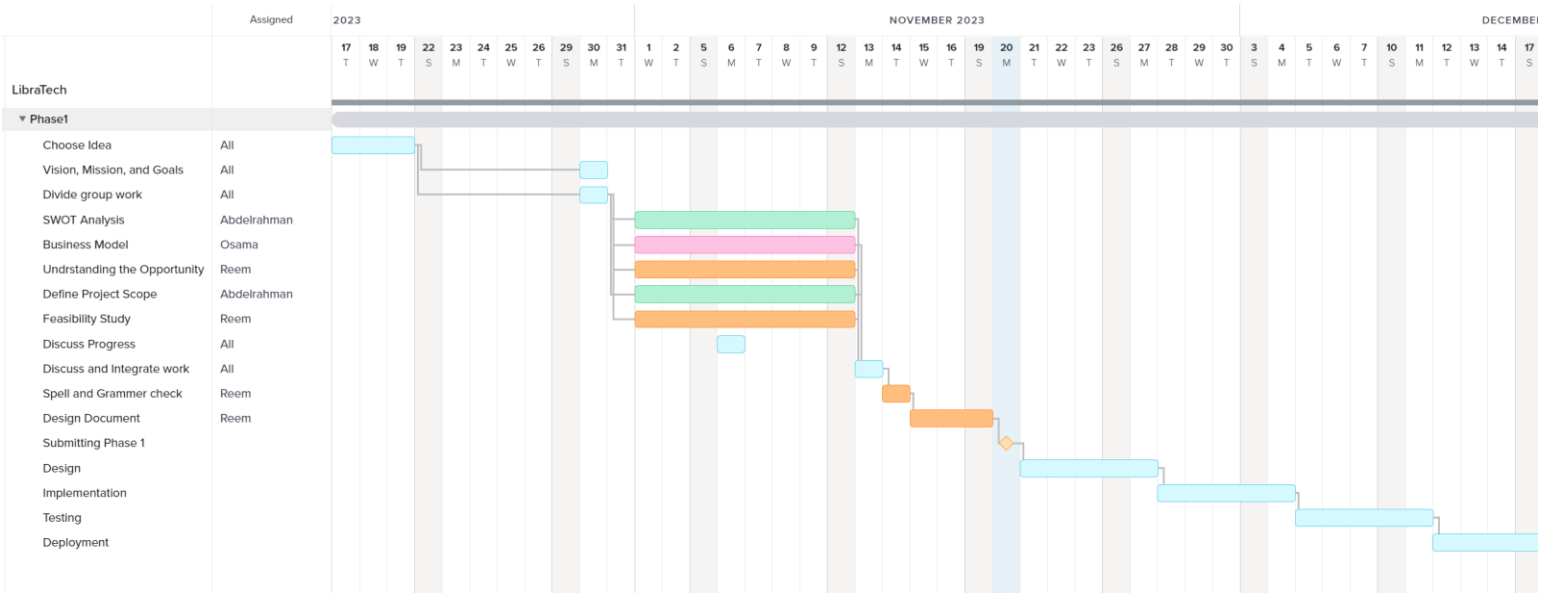
Internet subscription cost

Schedule

The system development time frame is adjustable but the implementation time is critical because it effects library operations, hence deployment should not take more than two weeks to assure least loss

Gantt Chart & Meeting Log Phase 1

Gantt Chart



Tool Used: Team Gantt

Meeting Log:

Meeting 1 on	17/10/2023	6:00-7:00 pm	60min	Choosing Project Idea
Meeting 2 on	31/10/2023	8:30-9:00 pm	60min	Dividing the group work and discussing vision, mission and goals, objectives and details
Meeting 3 on	6 /11/2023	12:00-1:00 pm	60min	Discussing progress and clear any questions
Meeting 4 on	12/11/2023	12:00-1:30 pm	90min	Discuss and Integrate work

All members were present in all the meetings

There were no specific roles, each member took the work they could manage and took responsibility for it. There was no conflict, all the work was divided fairly by all of us together. The work done by each of us is shown in the Gantt chart in the Assigned column.

Phase 2

Techniques used to collect the requirements

Brainstorming

Initiated the requirement collection process by conducting brainstorming sessions to identify and outline the main functionalities of the library system.

Translated the identified functionalities into detailed and specific requirements to provide clarity and precision.

Research

Utilized external resources to gain insights into the general requirements of library management systems.

For resources used, see Appendix.

Interview

Conducted interviews with librarians to extract specific details, address ambiguities, and obtain firsthand insights into their needs and expectations.

Formulated targeted questions based on identified ambiguities and received precise answers to refine the requirements further.

For further details about the interview, see Appendix.

Document Analysis

Explored existing library management systems by reviewing documents and interfaces to understand the types of data recorded about users, books, and employees.

Analyzed documentation from running systems to inform the creation of comprehensive requirements for our system.

By employing a combination of brainstorming, research, interviews, and document analysis, we ensured a holistic and thorough approach to requirement gathering. This multifaceted strategy aimed to capture a comprehensive understanding of user needs, industry standards, and existing system functionalities, resulting in well-defined and precise requirements for the development of the library management system.

Functional Requirements

FR01: The database should store user information, including but not limited to:
Full name, Contact information (email, phone number), Address, User preferences (e.g., favorite genres, preferred notification settings), Borrowing history, User type (e.g., Premium), Username

FR02: Each book entry in the database should include:
Title, Author(s), ISBN (International Standard Book Number), Genre, Publication date, Quantity, Availability status (e.g., available, checked out), Location within the library (e.g., shelf number, section)

FR03: The database should store information related to backups, including:
Backup timestamps, Backup size, Backup location

FR04: The database should track fines and penalties, recording:
User ID, Borrowed item details, Fine amount, Payment status

FR05: The system should record transactions that include:
Book Orders from Suppliers, Borrow transaction, Selling transaction Details

FR06: Search
a. Users should be able to perform searches for books based on various criteria such as title, author, and genre keywords.
b. The search results should be displayed in a clear and organized manner, including relevant details like availability status and location within the library.
c. The system should support advanced search options, allowing users to filter results by publication date, popularity, and other relevant factors.

FR07: Recommendation
a. The application should provide personalized book recommendations to users based on their borrowing history, preferences, search history, and trending titles.
b. The recommendation system should continuously adapt based on user interactions and feedback.

FR08: Users should have the option to rate books.

FR09: Account
a. Users should be able to create individual accounts with unique usernames and passwords.
b. The account management system should allow users to update their personal information, including contact details and preferences.
c. The application should provide a password recovery mechanism in case users forget their login credentials.

FR10: Users should receive real-time notifications about due dates, overdue items, library announcements, offers, and relevant events.

FR11: Borrow Process
a. The system should check if the user has a subscription when a user wants to borrow a book.
b. The system should check the user's account for borrowing limits and due dates before completing the process.
c. If a premium account holder exceeds their borrowing limit or attempts to borrow a book beyond its due date, the system should provide a warning.

FR12: The system should support self-checkout using a scanner on the app for borrowing books that has the same logic as the manual borrowing process.

FR13: Premium Account Management
a. The system should support the creation and management of premium user accounts.
b. Users can upgrade to a premium account by either making a payment or earning it through a penalty-free six-month period.
c. Premium account holders should be allowed to borrow a higher number of books simultaneously compared to regular account holders.
d. Premium account holders should have extended borrowing periods for each book compared to regular account holders.

FR14: Penalty System
a. A penalty system should be in place for users who fail to return books on time.
b. Penalties may include fines or suspension of borrowing privileges.
c. If a user's account incurs penalties and the due date for a book is exceeded, the user's account should be frozen where the user cannot borrow additional books, and premium privileges should be temporarily revoked.
d. Premium privileges can be reinstated once the user resolves the overdue book issues and pays any associated fines, given the user pays for the premium privileges.

FR15: Book Selling
a. Employees should be able to sell books to users through the system.
b. The system should support the recording of book sales, capturing details such as book title, user information, and transaction date.

FR16: Order Requests from Supplier
a. Employees should be able to request book orders.
b. The system should support efficient cataloging and classification of new arrivals.

FR17: Reports and Statistical Analysis
a. Employees should have access to tools for conducting statistical analyses on various aspects of library operations.
b. The system should provide reports on book circulation, user engagement, and other relevant metrics to support continuous improvement.
c. The system should provide tools for identifying trends and areas for improvement based on user feedback.

FR18: Announcement Creation and Event Management
a. Employees should be able to create and manage library events using the system.
b. The system should support event scheduling, including details such as event name, date, time, location, and description.
c. Employees should be able to associate events with relevant books, authors, or genres.
d. Employees should have the ability to create and manage announcements for users.

Non-Functional Requirements

NFR01: Performance
a. The system should respond to user queries and transactions within a maximum of 3 seconds.
b. During peak usage hours, the system should maintain optimal performance without significant degradation.

NFR02: Reliability
a. The system must have a 99.9% uptime, ensuring availability during library operating hours.
b. In the event of a system failure, there should be a backup and recovery plan in place to minimize downtime.

NFR03: Scalability
a. The system should be scalable to accommodate an increasing number of users and library resources.
b. Scalability testing should be conducted to ensure that the system can handle growth without performance issues.

NFR04: Usability
a. The user interface should be intuitive and user-friendly to ensure a seamless experience for both users and librarians.
b. The system should provide clear and concise error messages to assist users in case of input errors.

NFR05: Security
a. The system must comply with industry standards for data security and encryption to protect user and library information.
b. Access controls should be implemented to ensure that users and employees have appropriate access levels based on their roles.

NFR06: Integration
a. The system should be capable of integrating with other library management systems or external databases for additional resources.
b. Integration points should be secure and well-documented to facilitate third-party integrations.

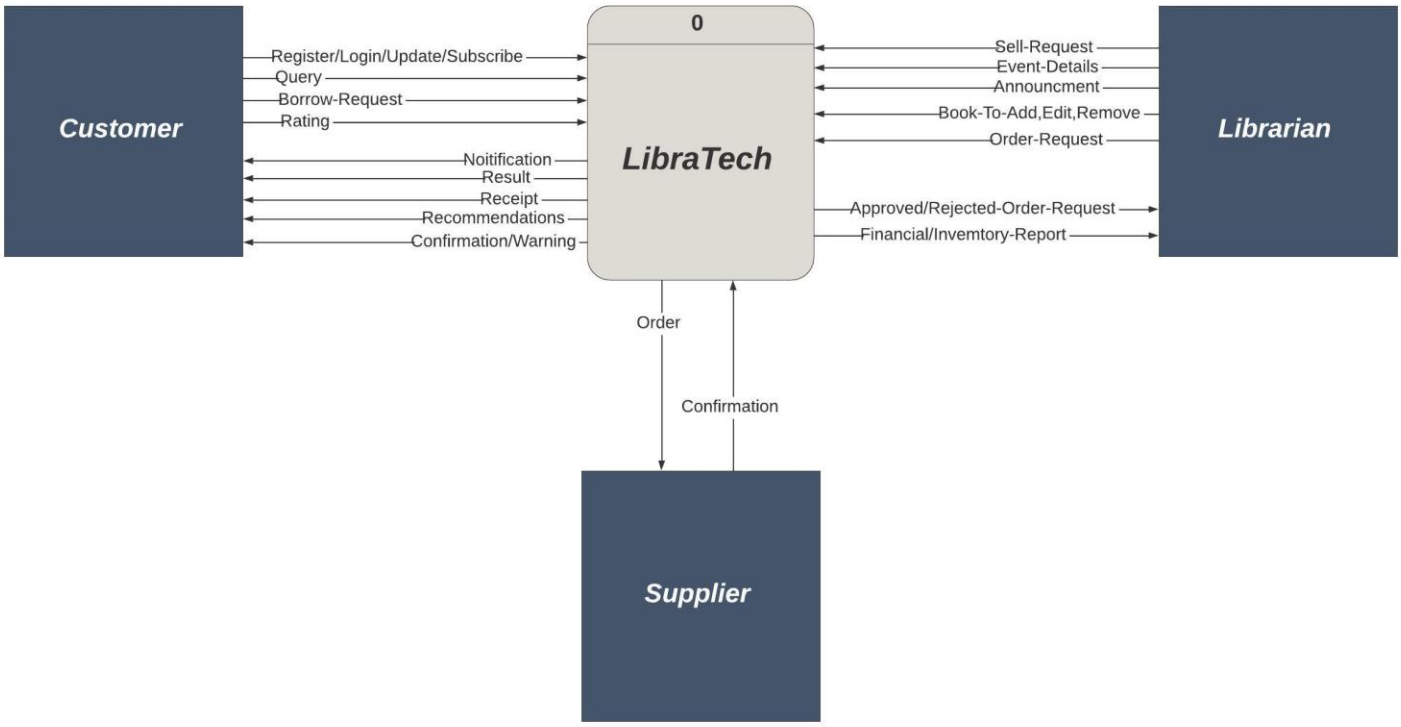
NFR07: Accessibility
a. The system should be accessible to users with disabilities, complying with relevant accessibility standards.
b. Accessibility testing should be conducted to ensure that the system is usable by individuals with diverse needs.

NFR08: Maintainability
a. The system should be easily maintainable, allowing for updates, patches, and enhancements without significant downtime.
b. Documentation should be comprehensive to aid system administrators and developers in maintaining and troubleshooting the system.

NFR09: Training and Support
a. The system should come with comprehensive training materials and support resources for librarians and users.
b. Support channels should be available during library operating hours to address user inquiries and issues promptly.

NFR10: Privacy
a. The system should adhere to privacy regulations and standards to protect user and employee information.
b. Privacy impact assessments should be conducted to identify and mitigate potential privacy risks.

Context Diagram



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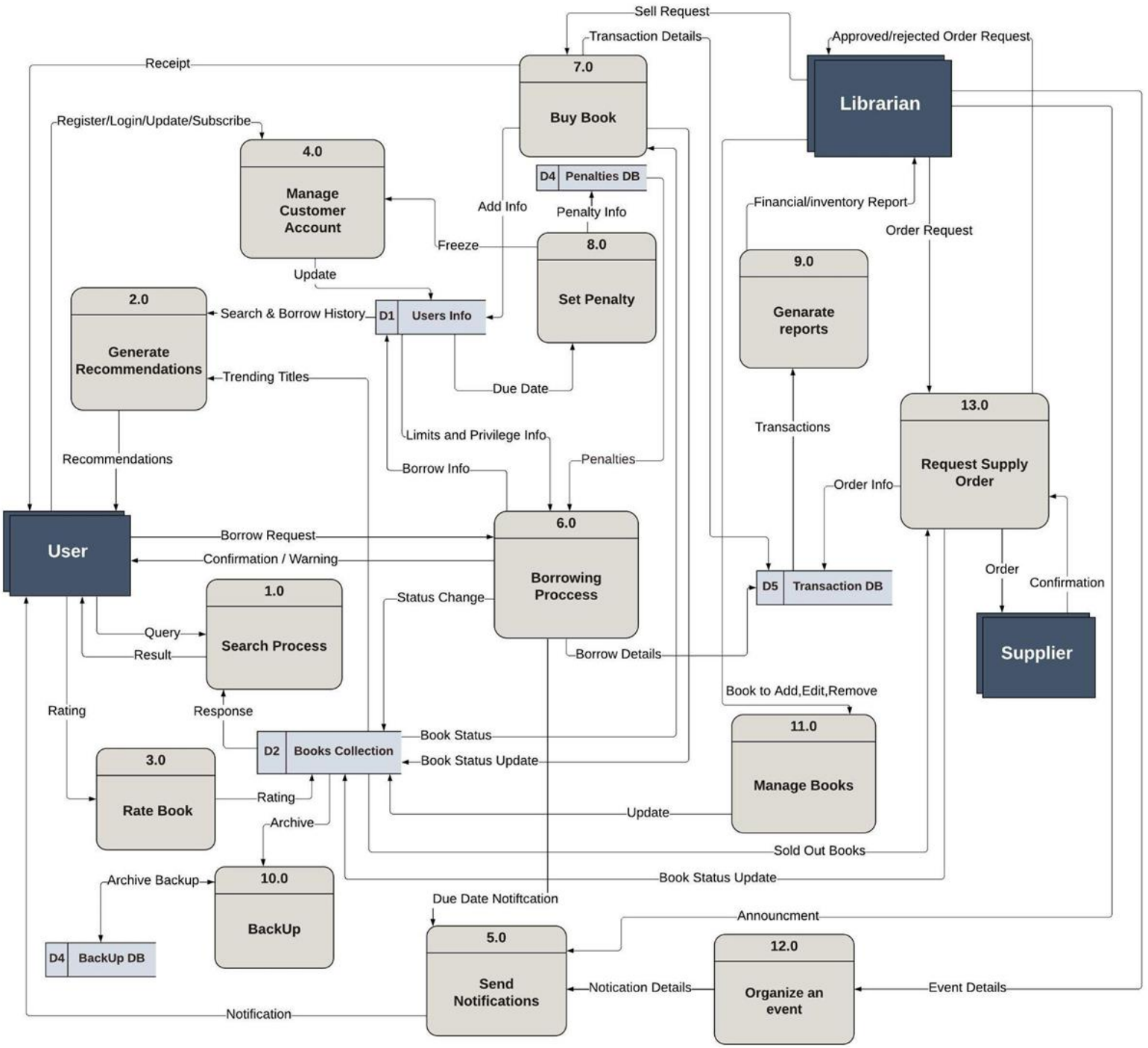

Sell Request
Transaction Details
Approved/rejected Order Request
Receipt
7.0
Buy Book
Librarian
Register/Login/Update/Subscribe
4.0
Manage Customer Account
D4 Penalties DB
Add Info
Penalty Info
Financial/inventory Report
Order Request
Freeze
8.0
Set Penalty
9.0
Genarate reports
Update
2.0
Generate Recommendations
Search & Borrow History
D1 Users Info
Trending Titles
Due Date
Limits and Privilege Info
Transactions
13.0
Request Supply Order
Recommendations
Borrow Info
Penalties
Order Info
User
Borrow Request
Confirmation / Warning
6.0
Borrowing Proccess
D5 Transaction DB
Order
Confirmation
1.0
Search Process
Status Change
Supplier
Query
Result
Borrow Details
Book to Add,Edit,Remove
Rating
Response
D2 Books Collection
Book Status
Book Status Update
11.0
Manage Books
3.0
Rate Book
Rating
Update
Archive
Sold Out Books
Book Status Update
Archive Backup
10.0
BackUp
Due Date Notiftcation
Announcment
D4 BackUp DB
5.0
Send Notifications
12.0
Organize an event
Notication Details
Event Details
Notification

Data Dictionary

Record

Name: Penalty

Description: Penalty Record stores information about penalties for users who do not return books on their due date.

Alternate Name: Fines

Attributes:
TransactionID
UserID
BookID
PenaltyAmount
Payment status
DueDate
ReturnDate

Process

Name: Generate Recommendations

Description: The process takes information from the user's borrowing and search history, compares the data with new and trending books, and recommends books based on the comparison.

Number: 2.0

Input Data Flow: Search and Borrow History from user Info and Trending Titles from Books collection

Output Data Flow: Recommendations for users

Data Store

Name: Books Collection

Description: Information about books in the library

Alternate Name: Book Archive

Attributes:
Title: The title of the book.
Author(s): The author or authors of the book.
ISBN (International Standard Book Number): A unique identifier for the book.
Genre/Category: The genre or category to which the book belongs.
Publication Information: Details about the publisher, publication date, and edition.
Availability: Whether the book is currently available, checked out, or on hold.
Quantity: Number of copies available
Location: The physical location of the book in the library.
Description/Summary: A brief summary or description of the book.

Volume and Frequency: This Data Store contains thousands of records and is updated frequently every day to ensure real-time data availability

Data Flow

Name: Order Information

Description: Detailed information about the book order, including date, quantities, prices, and total amount

Alternate Name: Order Details

Origin: Request Supply Order Process

Destination: Transaction Database

Volume and Frequency: Variable volume; occurs each time Library places a book order from supplier

External Entity

Name: Supplier

Description: Publisher or Distributor that the library orders it's books from

Alternate Name: Distributor

Input Data Flow: Order Request

Output Data Flow: Order Confirmation

Process Description Tools

Structured English

Borrow Process

IF User is subscribed **THEN**

IF User has no fees or penalties **THEN**

IF User is not within borrow limits **THEN**

IF User is Premium **THEN**

Accept Transaction and issue warning

Else

Deny Transaction

Else

Accept Transaction

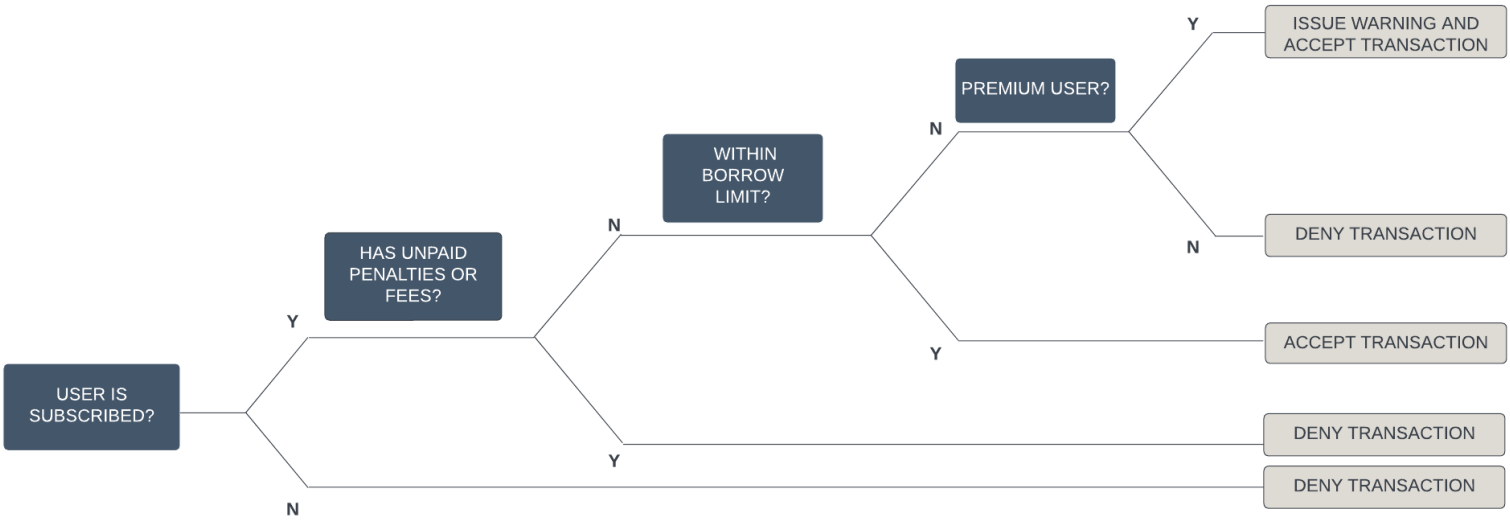
Else

Deny Transaction

Else

Deny Transaction

Decision Tree



Decision Table

Borrow Process (Initial Version)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
USER IS SUBSCRIBED?	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N
HAS UNPAID PENALTIES OR FEES?	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	N	N	N	N
WITHIN BORROW LIMIT?	Y	Y	N	N	Y	Y	N	N	Y	Y	N	N	Y	Y	N	N
PREMIUM USER?	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
ACCEPT TRANSACTION					X	X	X									
WARN USER							X									
DENY TRANSACTION	X	X	X	X				X	X	X	X	X	X	X	X	X

Condensed Decision Table

Borrow Process (Final Version)

	1	2	3	4	5
USER IS SUBSCRIBED?	**N**	**Y**	**Y**	**Y**	**Y**
HAS UNPAID PENALTIES OR FEES?	-	**Y**	**N**	**N**	**N**
WITHIN BORROW LIMIT?	-	-	**Y**	**N**	**N**
PREMIUM USER?	-	-	-	**Y**	**N**
ACCEPT TRANSACTION			**X**	**X**	
WARN USER				**X**	
DENY TRANSACTION	**X**	**X**			**X**

Appendix

Links used in research:

https://spada.uns.ac.id/pluginfile.php/819931/mod_resource/content/1/W04%20Software%20Requirements%20Specification%20-%20Library%20Management%20System.pdf

Poll, R. (2007, August). Evaluating the library website: Statistics and quality measures. In World Library and Information Congress: 73rd IFLA General Conference and Council, Durban, South Africa (pp. 1-18).

Links used in Document Analysis:

https://core.ac.uk/download/pdf/61800086.pdf

Interview

Date: Wednesday 20th December 2023
Time: 11:00 - 11:30 am
Place: Al Hassan Library

The following questions were asked in our interview that was conducted in Al Hassan library, answers were summarized.

Q1) Can you walk me through the current process of borrowing and returning books in the library?

A1:
BORROWING:

- A customer can see whether a book exists in the library by searching for it, physically, in one of the library's branches or by using the search option in the library's existing system.
- The customer can inquire about books to see if they are in stock and in which branches via the currently existing system.
- If a customer inquired about a book to borrow and that book was out of stock, the customer can then put that book 'on hold'; the 'on hold' process means that if that book was to come back in stock, the customer will be prioritized; multiple customers can have the same book on hold, hence there is an 'on hold queue' serving the first customer first.
- 'On hold' customers will be notified when their book comes back in stock, the customer has 4 days to reply to the notification, if no reply is sent, priorities to that book are removed
- The customer can then proceed to checkout, physically in the library, the barcode on the book is scanned by the librarian and the customer now temporarily owns the book.

RETURNING:

- Every action of borrowing issued has a set due date of which the customer MUST return the book within and to the same branch that they have borrowed from, the librarian will scan the barcode of said book copy to finalize the borrowing process.
- Failure to return will induce a daily fine of 15 cents for every day that the customer does not return the book after the due date has passed.

SYSTEM INFO:

- The system records how many books the user is currently borrowing as well as the duration the books have been borrowed for.
- Customer details are reached by a search (on membership ID, alternatively the customer's government ID is used if the borrower is not a member) option on the employee's interface, all recorded data about the customer is shown upon search (including, obviously, borrow details).

Q2) What challenges do users commonly encounter during the borrowing process?

A2:
Difficulty finding the books when searching physically.

Q3) How do you handle lost or damaged books after returning?

A3:
Depends on the degree of damage, in the case of a book that has been damaged beyond repair or lost completely, a new copy of the book must be bought, if no new copies are issuable, the borrower must then pay a fine valuing 3 times the damaged book's value, yet in the case of partial (repairable damages) the borrower can either fix the damages themselves or pay the library for repairs.
All information concerning book damages and action taken by the library is recorded by the system

Q4) For what do users pay when they borrow books?

A4:
Returning books late, damaging and/or losing books (fines and repairs).

Q5) Are there different user privileges (Premium)?

A5:
Yes but each library has its own rules for different user privileges, for example in the university library, Doctors have higher privileges than students

Q6) For how long are users allowed to borrow a book?

A6:
Differs depending on roles and privileges, but anywhere from 1 to 6 months

Q7) How many books can a user borrow at the same time?

A7:
Depends on the privileges, but a maximum of 8 books.

Q8) What are some of the challenges or issues you face in managing the library efficiently?

A8:
Data alteration is slow and can cause issues in terms of organization as well as the current system itself being slow

Group Work Report Phase 2

Meeting Log

Meeting 1 on 17/12/2023	8:30-9:00 pm	30min	Divide Group Work
Meeting 2 on 19/12/2023	12:00-1:30pm	90min	Write Requirements
Meeting 3 on 22/12/2023	10:00-11:30pm	90min	Discuss DFD Progress
Meeting 4 on 26/12/2023	8:00-9:00pm	60min	Integrate and Discuss Final Version

All members were present in all the meetings

There were no specific roles, each member took the work they could manage and took responsibility for it. There was no conflict, all the work was divided fairly by all of us together. The work done by each of us is shown in the Table Below

Tools

LucidChart → used for DFD

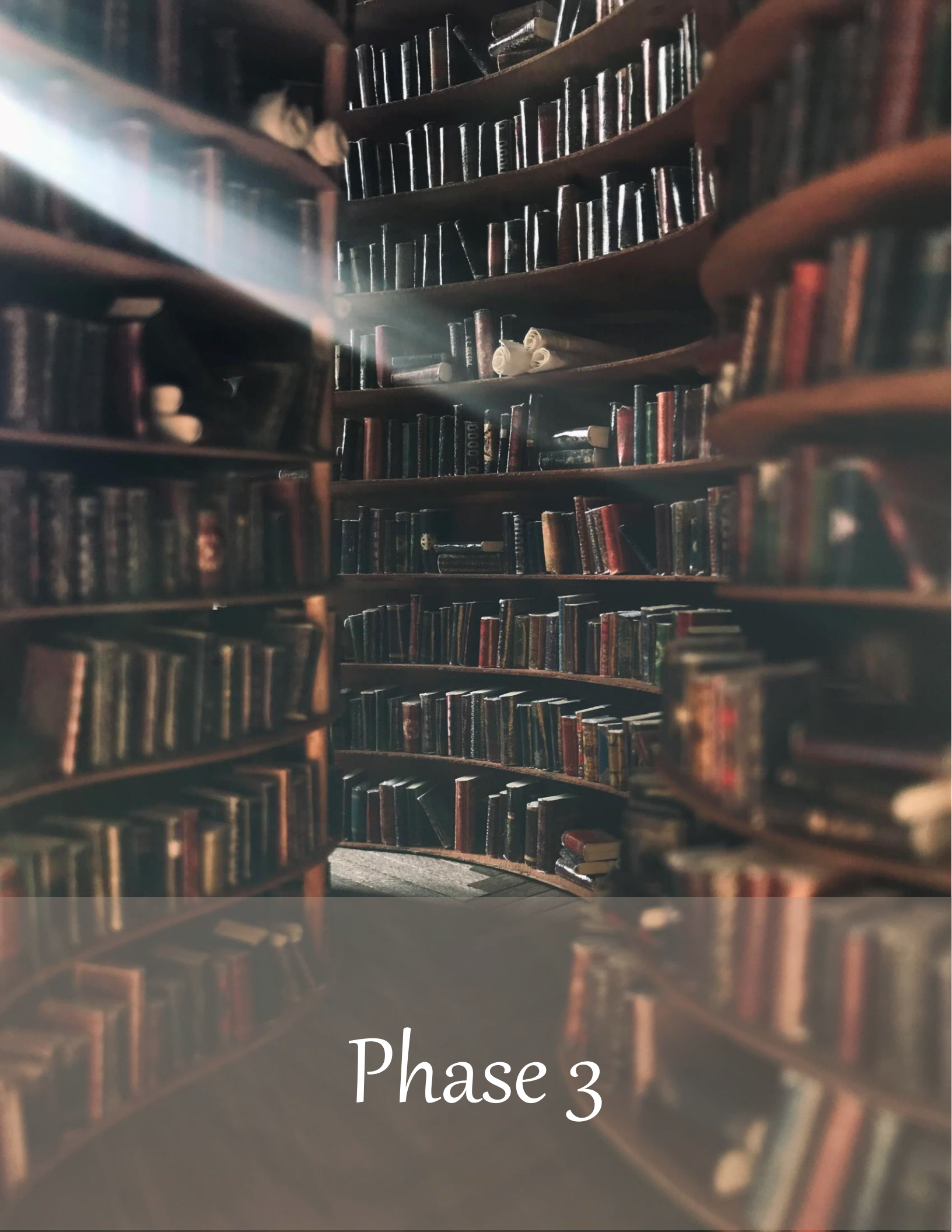
LucidChart → used for Data Dictionary

LucidChart → used for Decision Tree

Microsoft Excel→ used for Decision Table

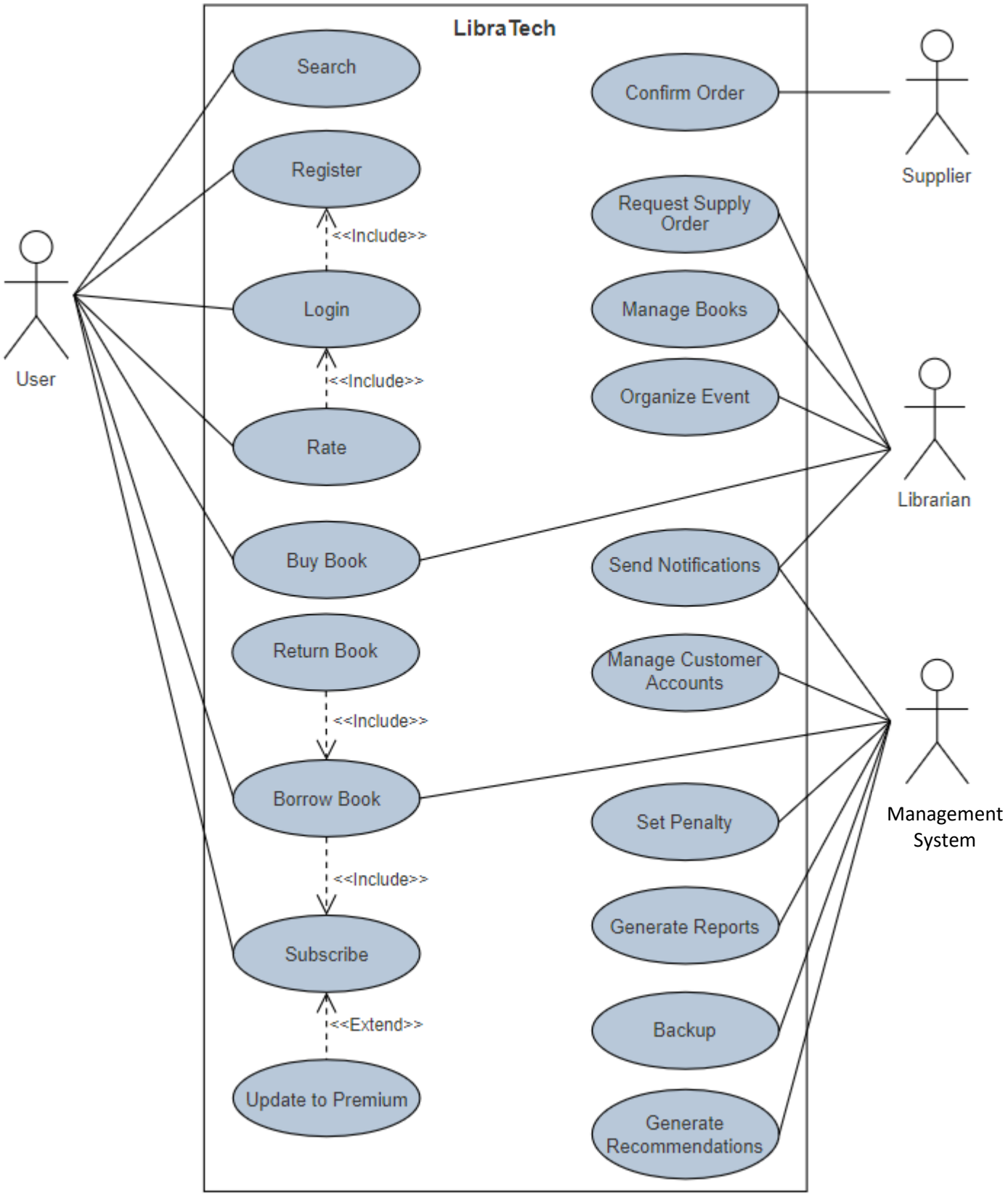
https://www.lucidchart.com

Task	Team Member
Requirements	All
Interview	Osama Kraishan
DFD (Context Diagram + Level 0)	Abdelrahman Abdeen
Data Dictionary	Reem Jarrar
Process Description Tools	Osama Kraishan
Design and Integration	Reem Jarrar

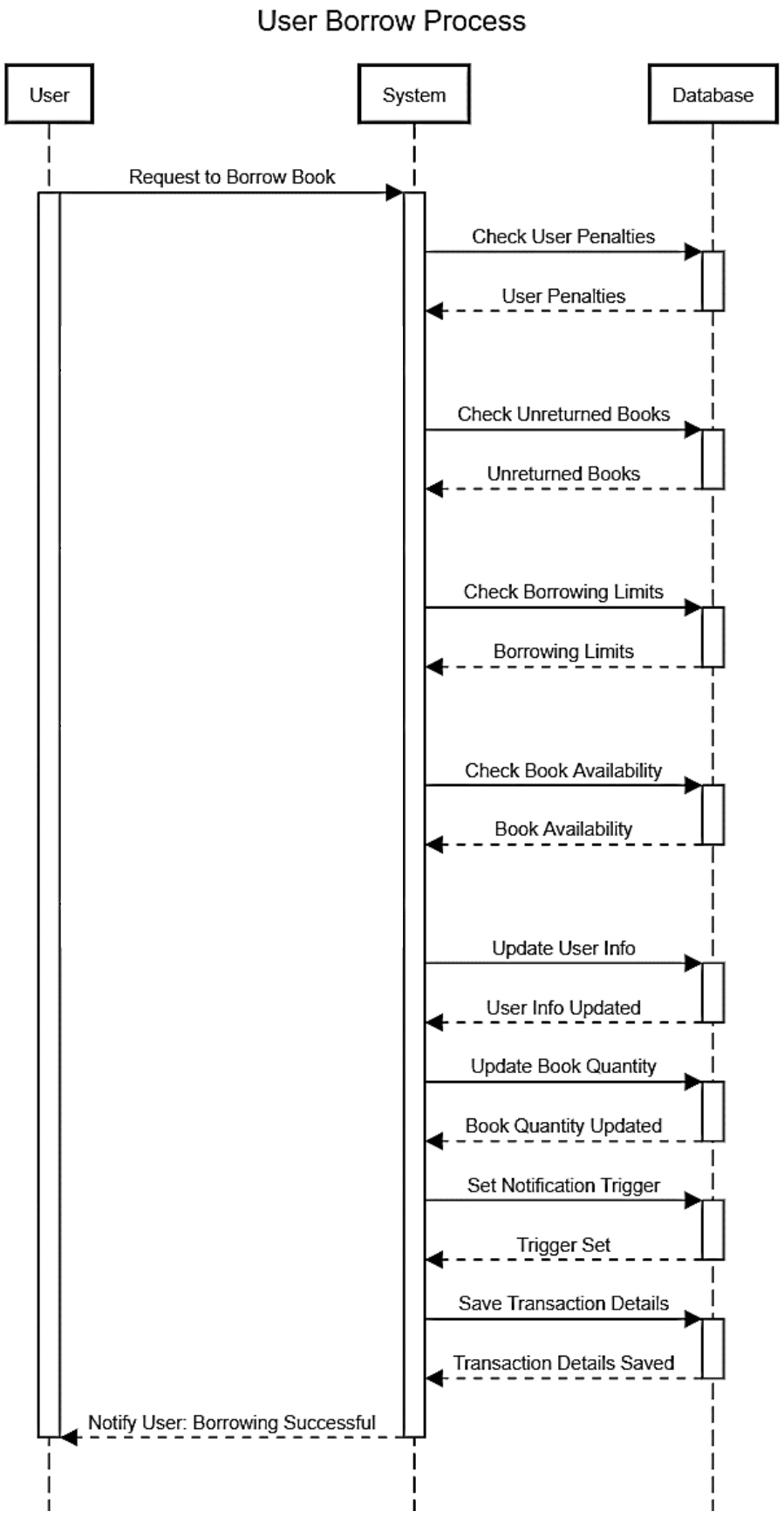


Phase 3

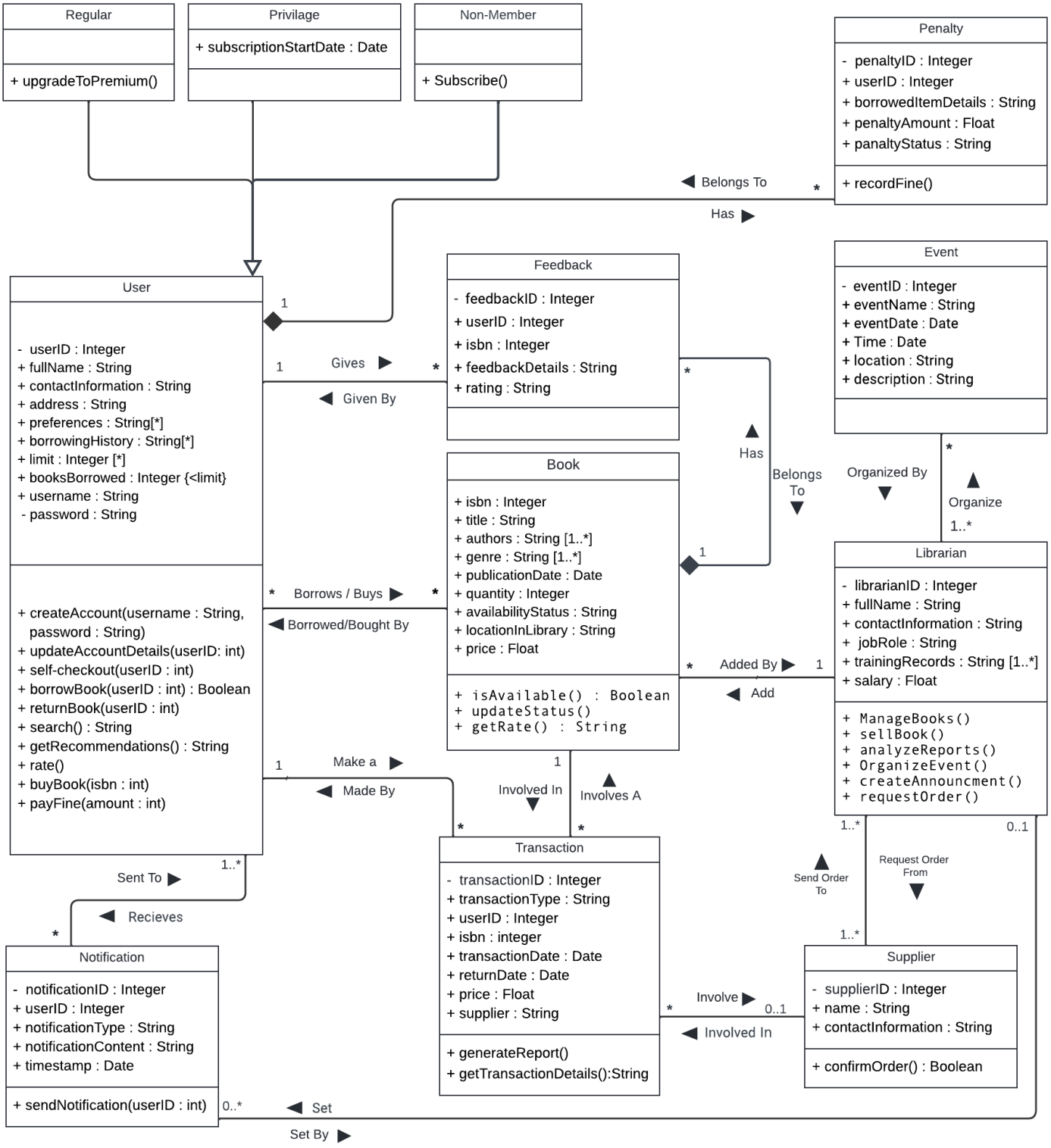
Use Case Diagram



Sequence Diagram



Class Diagram



Group Work Report Phase 3

Meeting Log

Meeting 1 on 10/1/2024	6:00-6:15 pm	15min	Divide Group Work
Meeting 2 on 13/1/2024	4:30-5:00 pm	30min	Discuss Progress
Meeting 3 on 14/1/2024	4:30-5:30 pm	60min	Discuss Progress
Meeting 4 on 15/1/2024	11:00-11:30 pm	30min	Integrate Work

All members were present in all the meetings

There were no specific roles, each member took the work they could manage and took responsibility for it. There was no conflict, all the work was divided fairly by all of us together. The work done by each of us is shown in the Table Below

Tools

Sequence Diagram -> https://sequencediagram.org/

Use Case Diagram -> https://online.visual-paradigm.com/

Class Diagram -> https://www.lucidchart.com/

Task	Team Member
Use Case Diagram	Osama Kraishan
Sequence Diagram	Reem Jarrar
Class Diagram	Abdelrahman Abdeen