

VIETNAM NATIONAL UNIVERSITY, HANOI

International School



FINAL PROJECT

IT PROJECT MANAGEMENT

Topic: Library Management System

Class : INS3044 02
Lecturer : MS ĐỖ TIẾN THÀNH
Group : 3
Members : Phạm Thị Xuân Quỳnh - 21070388
Đậu Trúc Linh - 21070369
Phạm Hồng Ngọc - 21070557
Nguyễn Thị Ngọc Quỳnh - 21070452
Hoàng Ngọc Khoa - 21070330

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PEER EVALUATION

Evaluation Criteria	Phạm Thị Xuân Quỳnh	Đậu Trúc Linh	Phạm Hồng Ngọc	Nguyễn Thị Ngọc Quỳnh	Hoàng Ngọc Khoa
Attends group meetings regularly and arrives on time.	A	A	A	A	A
Contributes meaningfully to group discussions.	A	A	A	A	B
Completes group assignments on time.	A	A	A	A	B
Prepares work in a quality manners.	A	A	A	A	B
Demonstrates a cooperative and supportive attitude.	A	A	A	A	A-
Contributes significantly to the success of the project.	A	A	A	A	B
TOTALS	A	A	A	A	B

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1 INTRODUCTION

This report presents the project of developing a Library Management System (LMS) for Vietnam National University, Hanoi - International School (VNU-IS). The aim of this project is to create a system that simplifies and enhances the management of library resources, making it easier for students and lecturers to access and utilize the library's offerings. To achieve this goal, several key steps were undertaken and are detailed in this report.

First, the project scope and objectives were clearly defined to focus on developing a comprehensive online LMS tailored for VNU-IS. This included setting clear objectives to improve resource management and user experience. Next, user stories and requirements were identified to address the specific needs of different users, such as students, librarians, and administrators. Detailed user stories were created to guide the development process and ensure the system meets all functional and non-functional requirements.

Project time management was a crucial step, involving the development of a work breakdown structure (WBS) using both Waterfall and Agile models. A Gantt chart was created to visualize the project timeline and track progress using JIRA. Additionally, project cost management was carefully planned, with budget estimates for completing the project within five months and projections of cost savings and efficiency improvements for the library.

Resource management was another important step, defining roles and responsibilities within the Scrum team, including Product Owner, Scrum Master, and Development Team. Sprints were organized, and tasks were assigned to ensure efficient project execution. Each of these steps is crucial for the successful development and implementation of the LMS. By following a structured approach, the project ensures that all aspects of the library's needs are addressed, resulting in a robust, user-friendly system that supports the academic goals of VNU-IS. The detailed planning and management strategies outlined in this report provide a clear roadmap for achieving the project's objectives efficiently and effectively.

1.1 Project Scope and Objective

1.1.1 Scope

- *Within Scope for the VNU-IS Library Management System*

We are implementing a comprehensive online library management system to meet the diverse needs of students and lecturers at VNU-IS. The project is estimated to take five months to complete, with a budget of \$8,500. We anticipate serving approximately 3,000 users and managing 25 administrators across various locations, including So 1 Trinh Van Bo, 79 Nguy Nhu, Kon Tum, and Xuan Thuy, Cau Giay. The system will support the management of all library resources, such as books, journals, and electronic documents, ensuring efficient resource handling and availability.

Key functions of the system include a robust search capability that allows users to easily find the information they need. The registration process will be straightforward and secure, incorporating user authentication to protect personal data and library information. To serve our diverse community, the system will support multiple languages, enhancing accessibility for all users.

Users will have the ability to search for documents, borrow books, and read online. They will also be able to track their borrowing and returning history, providing a seamless experience in managing their interactions with the library. Additionally, users can pre-order books online and pick them up at the physical library, offering convenience and improved service. This comprehensive approach will ensure that the library management system effectively supports the academic needs and enhances the learning experience of the VNU-IS community.

- *Outside of Scope for the VNU-IS Library Management System*

The implementation of the VNU-IS library management system will strictly adhere to the initial scope outlined. Adding new features not discussed initially, such as integrating social media functionalities or developing mobile applications, is beyond the scope of this project. Additionally, this project does not include ongoing updates or maintenance post-launch, nor does it cover physical infrastructure improvements or the digitization of all existing physical documents. These exclusions ensure a focused and efficient development process, meeting the primary objectives within the estimated time and budget constraints.

1.1.2 Objectives

Our objective is to revolutionize the VNU-IS library system to better meet students' needs for reading and borrowing books, thereby enhancing their overall learning potential. By leveraging advanced technology, we aim to optimize library operations to ensure efficient management of resources, particularly in the case of damaged books. Our strategy involves the

development of a more user-friendly and intuitive website interface, designed to increase user engagement and satisfaction. This includes streamlining the book search process, making it easier and faster for students to find the resources they need. Additionally, we plan to integrate a robust system for tracking and managing book conditions, ensuring that damaged books are promptly identified and addressed. Through these enhancements, we aim to modernize library services, making them more accessible and efficient. Ultimately, our goal is to expand the number of end users utilizing the system, fostering a culture of reading and continuous learning within the student body. By providing a seamless, technologically advanced library experience, we will support students in their academic pursuits and contribute to their intellectual growth.

The metrics are based on:

- Number of books borrowed: Increase by 30%
- Number of people use the system: Increase by 15%
- Library usage outside working hours through the online system: Increase by 10%
- Time saved with manual library tasks: Reduced by 35%
- Cost in library operations within the first year: Decrease by 20%
- Achieve a user satisfaction rating of 4 out of 5 or higher based on feedback surveys

1.2 Functional/ Non-Functional requirement

Table 1-1: Table of User Stories

ID	User Stories	Sprint	Functional/ Non-functional	Reasons
1	As a librarian, I want to be able to add new books to the library catalog so that the collection is up-to-date and accessible to all members.	1	Functional	The user story describes a librarian's ability to add new books to the library catalog. This defines a specific action within the library management system. It focuses on data manipulation by specifying the librarian can enter information about new books into the catalog, making them accessible to members.
2	As a User, I want to be able to search for books by title, author, or category so that I can easily find and borrow the books I need.	1	Functional	The user story describes a member's ability to search for books using various criteria (title, author, or category). This defines a specific action within the library system. It focuses on user interaction by specifying the search functionalities available to members and data manipulation by requiring the system to search the catalog based on user-provided criteria and display relevant book information.
3	As a user, I want to view the library's opening hours and location so that I can plan my visit accordingly.	1	Functional	The user story describes a functionality - displaying library opening hours and location information. This defines a specific action the system should perform (data presentation).

ID	User Stories	Sprint	Functional/ Non-functional	Reasons
4	As a user, I want to preorder the wanted books so that I can borrow books without waiting for my turn.	2	Functional	The user story describes an administrator's ability to generate reports containing data on book borrowing trends and member activities. It focuses on data manipulation by specifying the system should create reports based on borrowing and member activity data, and data presentation by requiring the system to display this information in a report format.
5	As a librarian, I want to notify members about overdue books and fines so that I can encourage timely returns and ensure fair use of library materials.	3	Functional	The user story describes a business process in which a librarian's the ability to send notifications to members about overdue books and associated fines. This defines a specific action within the library management system.
6	As a librarian, I want to generate reports on book borrowing trends and member activities so that I can make informed decisions about library resources and services.	3	Functional	It describes a process that the system should support: allowing users (students or lecturers) to preorder wanted books so they can borrow them without waiting for their turn
7	As a user, I want to have my	4	Non-Functional	It describes a quality attribute or constraint of the system rather

ID	User Stories	Sprint	Functional/ Non-functional	Reasons
	information secured so that I can be confident while using the system.			than a specific action or feature relates to the overall behavior and quality of the system rather than defining a particular functionality.
8	As a user, I want to read soft copies of books so that I can immediately access the sources outside of working days.	2	Functional	It describes a business process and data manipulation that the system should support. This functionality directly relates to what the user can do within the system, enabling them to access resources conveniently
9	As a librarian, I want to track the activities of members in the system, such as frequent borrowing and blacklisting, so that I can manage the system efficiently, avoiding lost or damaged resources.	2	Functional	It describes a business process that the system should support. This functionality directly relates to what the admin can do within the system to manage it efficiently and prevent loss or damage to resources
10	As a librarian, I want to view and accept requests to borrow books so that I can track the progress and allocate the right amount of books	2	Functional	It describes a business process and data manipulation that the system should support: allowing the admin to view and accept requests to borrow books. Additionally, it outlines the purpose of this functionality, which is to enable the admin to track progress and

ID	User Stories	Sprint	Functional/ Non-functional	Reasons
	between locations.			allocate the right amount of books between locations
11	As a user, I want the library management system to have a varied responsive layout of user interface so that I can easily navigate through the system and perform tasks efficiently, regardless of the device I use.	4	Non-Functional	This user story focuses on the user's desire to interact with the system efficiently or conveniently on varied kinds of devices such as smartphones, laptops, iPads, etc.
12	As a librarian, I want to track the condition of library materials so that I can manage inventory effectively for inventory management purposes.	2	Functional	This is because it describes a specific functionality that the system needs to provide. It involves a business process that allows the admin to track the condition of library materials for inventory management purposes.
13	As a user, I want to rate and review books I've read so that I can help other users make informed reading choices.	3	Functional	This is because the user story involves direct interaction between users and the system , where users are providing ratings and reviews for books and Data Manipulation : Users' ratings and reviews are data that the system needs to handle, process, and store.
14	As a librarian, I want the system to be	4	Non-Functional	Handling high access depends on the quality of the system . These

ID	User Stories	Sprint	Functional/ Non-functional	Reasons
	able to handle a high volume of users during peak hours, such as after school or weekends, so that members don't experience delays when borrowing or returning books.			non-functional requirements can satisfy user experience .
15	As a librarian, I want the library management system to prioritize data security so that user information remains confidential and protected against unauthorized access.	4	Non-Functional	This user story focuses on the security of user information . This can meet user needs and enhance the quality of the system.
16	As a user, I want to be able to view details about a book, including its availability status and location within the library, so that I know whether I can borrow it.	1	Functional	This user story describes the user's ability to view details about a book, including its availability and location. This directly relates to a specific action the system should enable. It focuses on user interaction and the system's response. The user interacts by requesting book details, and the system responds by displaying information about availability and location.
17	As a user, I want to be able to renew	3	Functional	The user story describes a specific action a library member can take

ID	User Stories	Sprint	Functional/ Non-functional	Reasons
	my borrowed books online so that I can extend my borrowing period if needed.			(renew borrowed books online) and the outcome (extending the borrowing period).It focuses on user interaction by specifying an action a user can perform within the library system.
18	As a user, I want to receive notifications when my borrowed books are due soon or overdue so that I can return them on time and avoid late fees.	3	Functional	The user story describes a member receiving notifications about approaching due dates or overdue borrowed books. It focuses on user interaction by specifying the system should send alerts to the library member and data manipulation by identifying relevant borrowed materials nearing their due date.
19	As a user, I want to be able to view my borrowing history, including past loans and returns, so that I can keep track of the books I have read.	1	Functional	This user story describes a member's ability to view their borrowing history, encompassing both borrowed items and their return dates. It focuses on data manipulation by specifying the system should retrieve and present past borrowing and return information for the user.

2.1.1 WBS in Waterfall Model:



Figure 2-2: Figure of WBS in Agile Model
[Detail Image](#)

2.2 Gantt Chart by JIRA

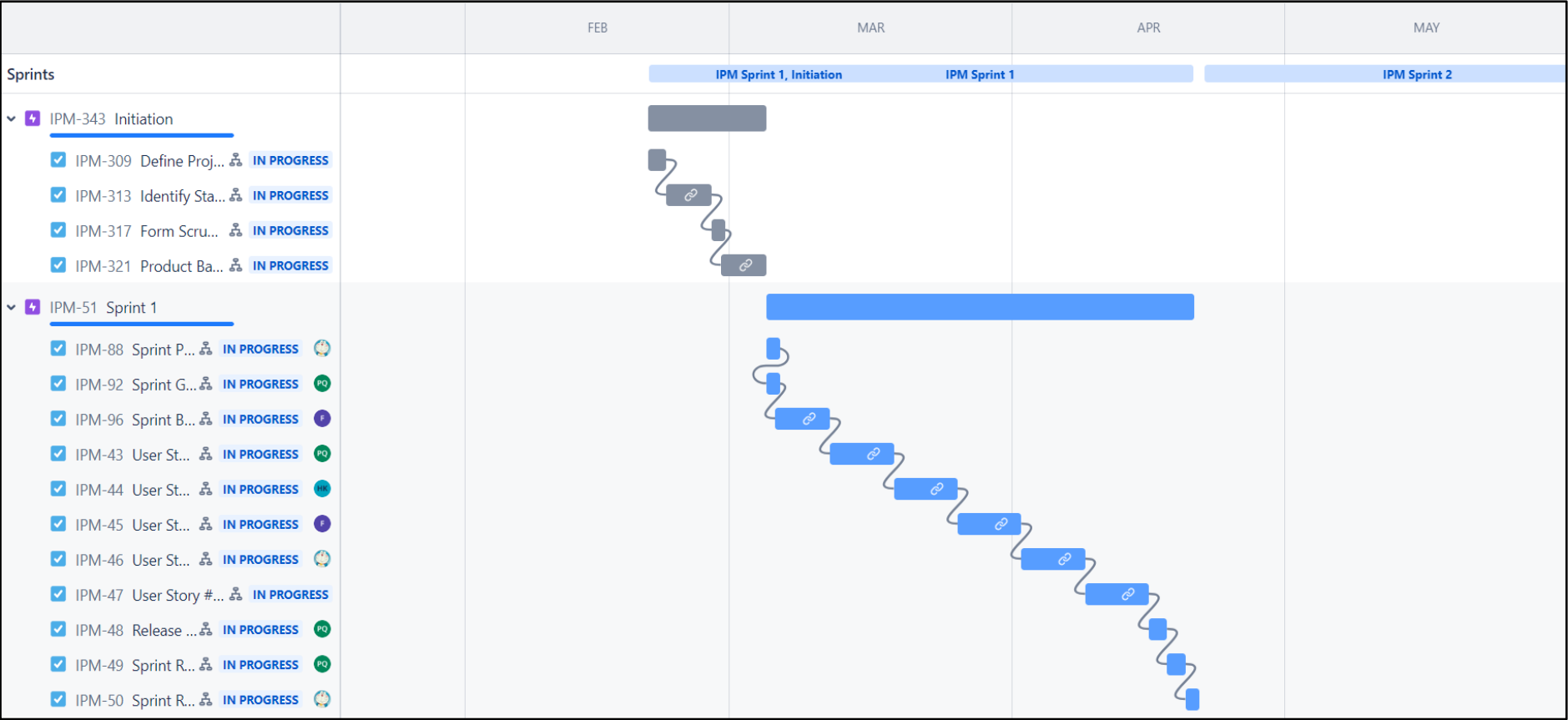


Figure 2-3: Figure of Gantt Chart for Initiation & Sprint 1

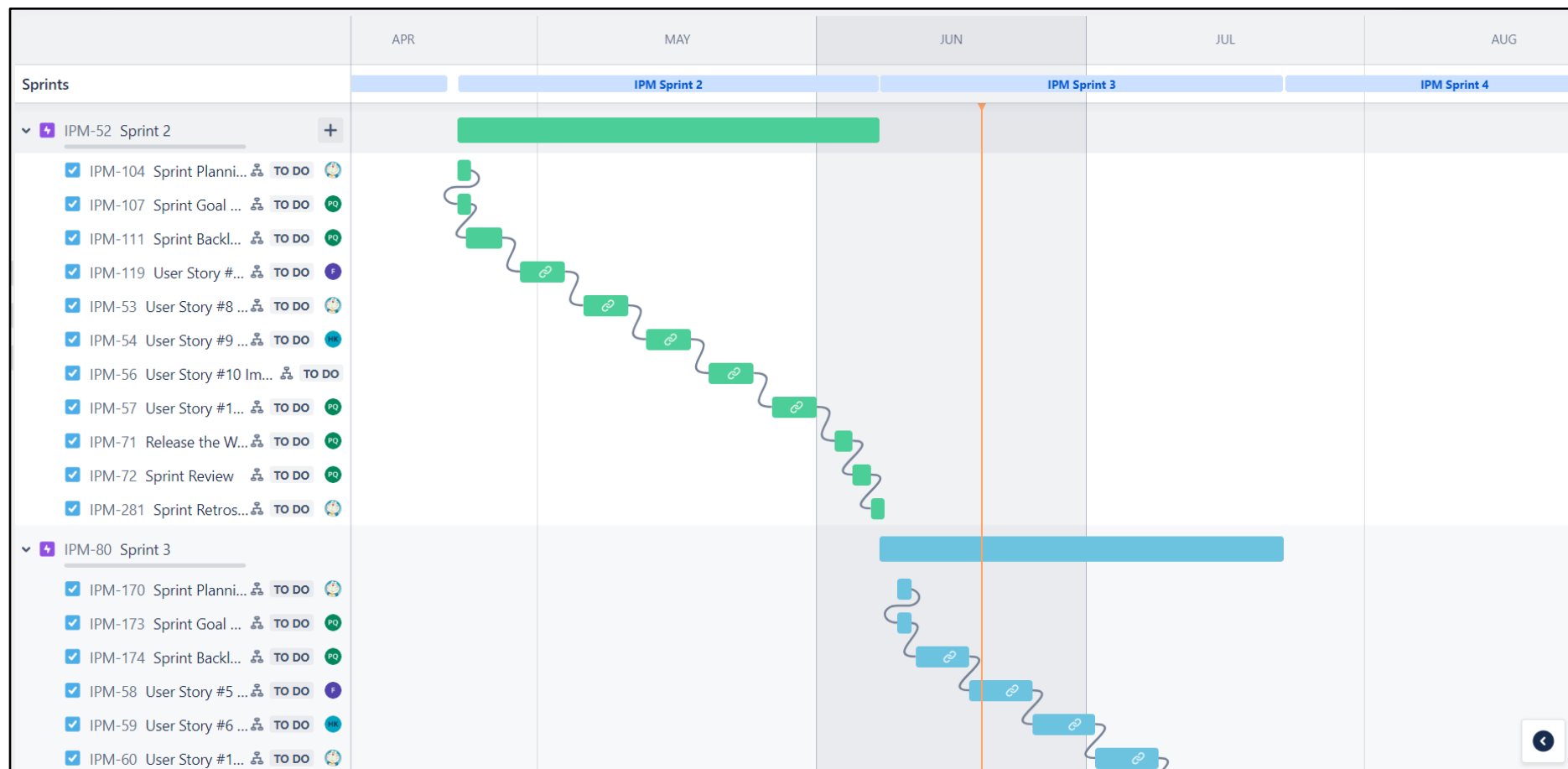


Figure 2-4: Figure of Gantt Chart Sprint 2 & 3

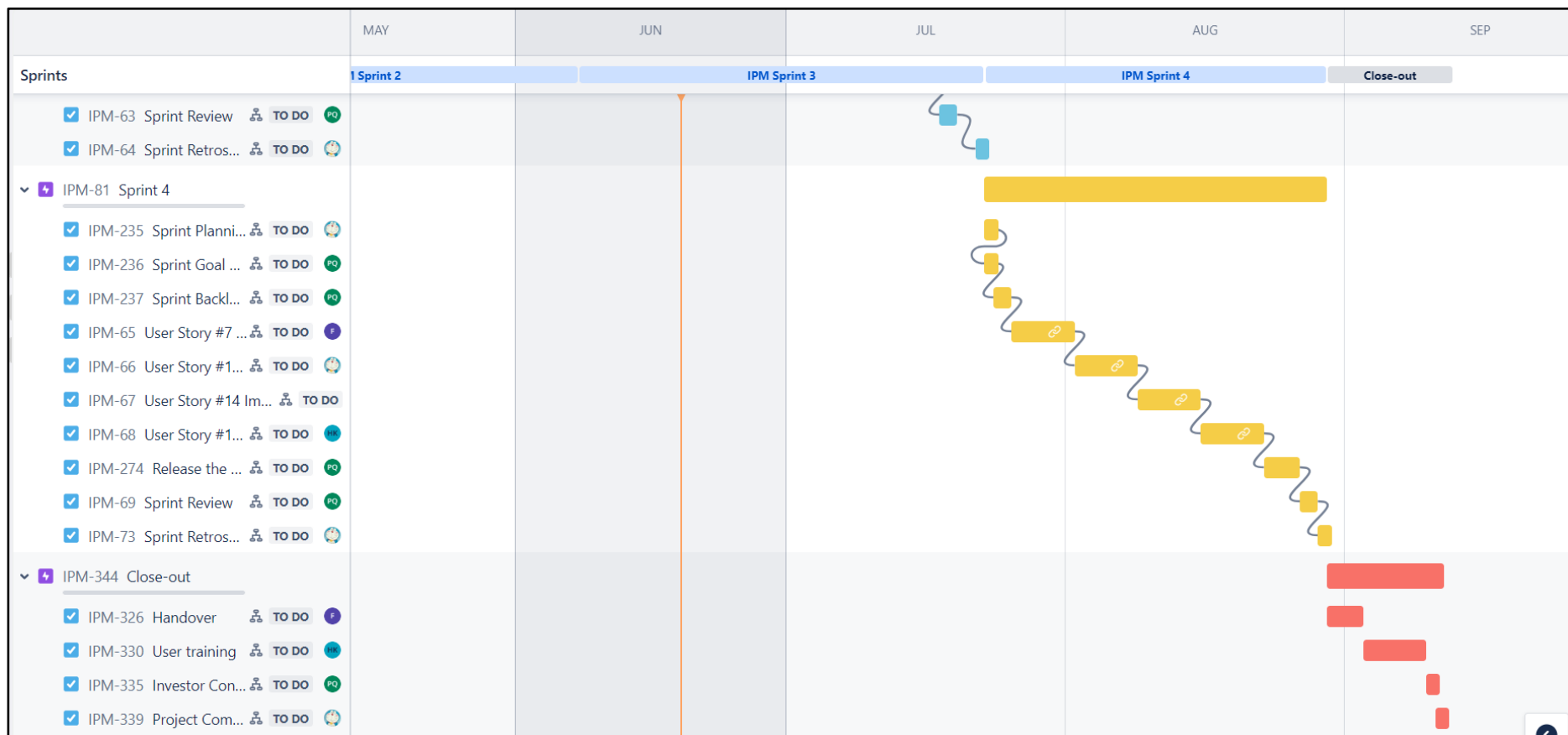


Figure 2-5:Figure of Gantt Chart Sprint 4 & Close-out

3 PROJECT COST MANAGEMENT

3.1 System Life Cost System

Table 3-1: System Life Cost System (1)

COMPANY NAME	VNUIS Library Management				DATE CONDUCTED	21/02/2024
PROPOSED PRODUCT / INITIATIVE / SERVICE	Website				COMPLETED BY	Quynh NGUYEN-Khoa HOANG
CONSTANT OR CURRENT DOLLARS	\$				YEARS	2024-2028
SYSTEM LIFE COST PROFILE						
COST CATEGORY	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Hardware						
Servers (VPS Hosting)	\$ 100.000	\$ 100.000	\$ 100.000	\$ 100.000	\$ 100.000	\$ 500.000
Networking Equipment						
- Routers	\$ 10.000		\$ 10.000		\$ 10.000	\$ 30.000
- Wifi/Internet	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000
- Cables/Racks	\$ 30.000		\$ 30.000		\$ 30.000	\$ 90.000
Computers/Keyboards/Mouse/CPU/Monitor	\$ 120.000		\$ 80.000		\$ 80.000	\$ 280.000
Securities(Firewall Device)	\$ 80.000		\$ 50.000		\$ 50.000	\$ 180.000
Software						
Securities						\$ -
- Antivirus/ antimalware software	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 150.000
-IDS/IPS software	\$ 20.000	\$ 20.000	\$ 20.000	\$ 20.000	\$ 20.000	\$ 100.000
- VPN	\$ 20.000	\$ 20.000	\$ 20.000	\$ 20.000	\$ 20.000	\$ 100.000
- Firewall/UTM software	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 150.000
Deevelopmen Tools						
- IDE and Code Editors (VS Code, Sublime Text, Pycharm)	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000
-Version Control Systems (e.g., GitHub, GitLab)	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000
Design Tools						
- Graphic Design Software (e.g., Adobe Creative Cloud)	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000
-Prototyping Tools (e.g., Figma, Sketch)	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000
Other Tools						
- Power BI, Tableau	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000
- Jira Software	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000
- SQL Server	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000
- Microsoft Office/Windows	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000

Table 3-2: System Life Cost System (2)

Furniture and Fixtures						
Conference Tables/Desks/Chairs	\$ 100.000			\$ 100.000		\$ 200.000
Lightings/Boards/Cabinets	\$ 100.000	\$ 100.000	\$ 100.000	\$ 100.000	\$ 100.000	\$ 500.000
Office Supplies (Copy/Scanner/ Printer)	\$ 100.000			\$ 100.000		\$ 200.000
Location	\$ 120.000	\$ 120.000	\$ 120.000	\$ 120.000	\$ 120.000	\$ 600.000
Project Organizational/Support Costs						
Planning project (upon Approval)	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 150.000
Contract Negotiations	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 150.000
Meal/Travel/Insurance	\$ 100.000	\$ 100.000	\$ 100.000	\$ 100.000	\$ 100.000	\$ 500.000
Operating Costs/Other Costs						
Domain Name	\$ 20.000	\$ 20.000	\$ 20.000	\$ 20.000	\$ 20.000	\$ 100.000
Documents	\$ 10.000	\$ 10.000	\$ 10.000	\$ 10.000	\$ 10.000	\$ 50.000
Training Employees	\$ 100.000	\$ 100.000	\$ 100.000	\$ 100.000	\$ 100.000	\$ 500.000
Labor Salaries						\$ -
Expert consultancy/Third-party service	\$ 80.000	\$ 80.000	\$ 80.000	\$ 80.000	\$ 80.000	\$ 400.000
Product Owner	\$ 100.000	\$ 110.000	\$ 120.000	\$ 130.000	\$ 140.000	\$ 600.000
Scum Master	\$ 50.000	\$ 60.000	\$ 70.000	\$ 80.000	\$ 90.000	\$ 350.000
Business Analyst	\$ 40.000	\$ 50.000	\$ 60.000	\$ 70.000	\$ 80.000	\$ 300.000
Tester	\$ 45.000	\$ 55.000	\$ 65.000	\$ 75.000	\$ 85.000	\$ 325.000
Software Developer	\$ 100.000	\$ 110.000	\$ 120.000	\$ 130.000	\$ 140.000	\$ 600.000
UI/UX Designer	\$ 45.000	\$ 55.000	\$ 55.000	\$ 60.500	\$ 60.500	\$ 276.000
Database Specialist	\$ 40.000	\$ 40.000	\$ 40.000	\$ 40.000	\$ 40.000	\$ 200.000
TOTAL PROJECTED COSTS	\$ 2.100.000	\$ 1.720.000	\$ 1.940.000	\$ 2.025.500	\$ 2.045.500	\$ 9.831.000
TOTAL PRESENT VALUE COSTS	\$ 2.000.000	\$ 3.542.857	\$ 5.221.769	\$ 6.902.161	\$ 8.521.582	\$ 26.188.368
CUMULATIVE TOTAL PROJECTED COSTS	\$ 2.000.000	\$ 5.542.857	\$ 10.764.626	\$ 17.666.787	\$ 26.188.368	\$ 26.188.368

3.2 System Life Benefits System

Table 3-3: System Life Benefits System

IT PROJECT COST BENEFIT ANALYSIS						
COMPANY NAME	VNUIS Library Management			DATE CONDUCTED	XX/XX/XXXX	
PROPOSED PRODUCT / INITIATIVE / SERVICE	Website			COMPLETED BY	Quynh NGUYEN-Khoa HOANG	
CONSTANT OR CURRENT DOLLARS	\$			YEARS	2024-2028	
SYSTEM LIFE BENEFITS PROFILE						
BENEFITS CATEGORY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Economic Benefits						
Cost Reduction	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000
Operational Benefits						
Compliance and Risk Reduction	\$ 20.000	\$ 20.000	\$ 20.000	\$ 20.000	\$ 20.000	\$ 100.000
Decision Support	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 150.000
Time Savings	\$ 15.000	\$ 15.000	\$ 15.000	\$ 15.000	\$ 15.000	\$ 75.000
Operation Efficiency	\$ 20.000	\$ 20.000	\$ 20.000	\$ 20.000	\$ 20.000	\$ 100.000
Resource Optimization	\$ 25.000	\$ 25.000	\$ 25.000	\$ 25.000	\$ 25.000	\$ 125.000
Technological Benefits						
Improved Library Management System	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 50.000	\$ 250.000
Data Accuracy	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 150.000
Infrastructure Optimization	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 30.000	\$ 150.000
TOTAL PROJECTED BENEFITS	\$ 270.000	\$ 270.000	\$ 270.000	\$ 270.000	\$ 270.000	\$ 1.350.000
TOTAL PRESENT VALUE BENEFITS	\$ 257.143	\$ 502.041	\$ 735.277	\$ 957.407	\$ 1.168.959	\$ 759.184
CUMULATIVE TOTAL PROJECTED BENEFITS	\$ 257.143	\$ 270.000	\$ 540.000	\$ 810.000	\$ 1.080.000	\$ 1.080.000

3.3 Cumulative cost-benefit profile

Table 3-4: Cumulative Cost-Benefit System

IT PROJECT COST BENEFIT ANALYSIS						
COMPANY NAME	VNUIS Library Management			DATE CONDUCTED	21/02/2024	
PROPOSED PRODUCT / INITIATIVE / SERVICE	Website			COMPLETED BY	Quynh NGUYEN- Khoa HOANG	
CONSTANT OR CURRENT DOLLARS	\$			YEARS	2024-2028	
SYSTEM LIFE COST-BENEFITS PROFILE						
COST PROFILE	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
TOTAL PROJECTED COSTS	\$ 2.100.000	\$ 1.720.000	\$ 1.940.000	\$ 2.025.500	\$ 2.045.500	\$ 1.940.000
TOTAL PRESENT VALUE COSTS	\$ 2.000.000	\$ 3.542.857	\$ 5.221.769	\$ 6.902.161	\$ 8.521.582	\$ 5.221.769
CUMULATIVE TOTAL PROJECTED COSTS	\$ 2.000.000	\$ 5.542.857	\$ 10.764.626	\$ 17.666.787	\$ 26.188.368	\$ 62.162.638
BENEFITS PROFILE						
BENEFITS PROFILE	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
TOTAL PROJECTED BENEFITS	\$ 6.100.000	\$ 10.805.714	\$ 17.926.395	\$ 26.594.447	\$ 36.755.450	\$ 98.182.006
TOTAL PRESENT VALUE BENEFITS	\$ 5.809.524	\$ 15.824.036	\$ 32.143.267	\$ 55.940.681	\$ 88.282.029	\$ 197.999.537
CUMULATIVE TOTAL PROJECTED BENEFITS	\$ 5.809.524	\$ 10.805.714	\$ 28.732.109	\$ 55.326.556	\$ 92.082.006	\$ 192.755.909
CUMULATIVE COST-BENEFITS PROFILE						
CUMULATIVE COST-BENEFITS PROFILE	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
CUMULATIVE PROJECTED TOTAL	\$ (3.809.524)	\$ (5.262.857)	\$ (17.967.483)	\$ (37.659.770)	\$ (65.893.638)	\$ (9.072.381)
CUMULATIVE PRESENT VALUE TOTAL	\$ (3.809.524)	\$ (12.281.179)	\$ (26.921.499)	\$ (49.038.520)	\$ (79.760.447)	\$ (171.811.169)

4 PROJECT RESOURCE MANAGEMENT

4.1 Scrum Role & Responsibility

Table 4-1: Scrum Roles Table

PRODUCT OWNER	SCRUM MASTER	SCRUM TEAM
Promotes the product vision and prioritizes the product backlog to maximize the product's functionality and value for the customer.	Effectively coaches the development team, facilitates events, and eliminates distractions that can interfere with the team's progress.	Remains focused on completing deliverables in increments (i.e., completing product functionality by the end of each sprint) and producing a superior final product.
PROJECT, PRODUCT, OR SPRINT-SPECIFIC RESPONSIBILITIES		
PRODUCT OWNER	SCRUM MASTER	SCRUM TEAM
<ul style="list-style-type: none"> - Ensures the library product aligns with customer needs and values. - Identifies and prioritizes necessary features and functionalities to maximize product value. 	<ul style="list-style-type: none"> - Sets sprint goals and creates sprint backlogs, ensuring alignment with library management objectives. - Keeps the development team aligned and on track with project goals. - Assists in all aspects of sprint execution, including design, development, testing, and bug-fixing, 	<p>Initial: All team & Stakeholders</p> <p>Sprint 1:</p> <ul style="list-style-type: none"> • Sprint planning: All team • User stories #1, #2 #3 #16 #19 <p>Software Developer: Phạm Thị Xuân Quỳnh: UI/UX Designer: Phạm Hồng Ngọc Database Specialist: Đậu Trúc Linh Tester: Hoàng Ngọc Khoa Business Analyst: Nguyễn Thị Ngọc Quỳnh</p>

<ul style="list-style-type: none"> - Defines objectives and sprint backlog to guide the development team. - Conveys the needs of external stakeholders to the development team. - Monitors progress and ensures the development team focuses on product requirements. - Reviews, prioritizes, and comprehends the sprint backlog. - Tracks the development of User Stories and approves changes. - Reviews and confirms functionalities in each release. 	<p>leveraging their experience in library management.</p> <ul style="list-style-type: none"> - Guarantees the release of a working product and facilitates sprint review and retrospective meetings to improve the process. - Ensures clear and consistent communication with stakeholders, addressing their needs and feedback. - Manages documentation, handover, training, and reporting to ensure a smooth project conclusion, utilizing their expertise in the library management domain. 	<ul style="list-style-type: none"> • Release the Working Product: Phạm Thị Xuân Quỳnh: • Sprint Review: All team • Sprint Retrospective: All team <p>Sprint 2:</p> <ul style="list-style-type: none"> • Sprint planning: All team • User stories #4 #8, #9 #10, #12 <p>UI/UX Designer: Phạm Thị Xuân Quỳnh Software Developer: Phạm Hồng Ngọc Tester: Đậu Trúc Linh Business Analyst: Hoàng Ngọc Khoa Database Specialist: Nguyễn Thị Ngọc Quỳnh</p> <ul style="list-style-type: none"> • Release the Working Product: Phạm Thị Xuân Quỳnh • Sprint Review: All team • Sprint Retrospective: All team <p>Sprint 3:</p> <ul style="list-style-type: none"> • Sprint planning: All team • User stories #1, #2 #3 #16 #19 <p>Software Developer: Phạm Thị Xuân Quỳnh: UI/UX Designer: Phạm Hồng Ngọc Database Specialist: Đậu Trúc Linh</p>
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<ul style="list-style-type: none"> - Ensures the product is operational and organizes sprint reviews. - Secures approval and signatures from investors for each release. 		<p>Tester: Hoàng Ngọc Khoa</p> <p>Business Analyst: Nguyễn Thị Ngọc Quỳnh</p> <ul style="list-style-type: none"> • Phạm Thị Xuân Quỳnh: Release the Working Product • All team: Sprint Review • All team: Sprint Retrospective <p>Sprint 4:</p> <ul style="list-style-type: none"> • Sprint planning: All team • User stories #4 #8, #9 #10, #12 <p>UI/UX Designer: Phạm Thị Xuân Quỳnh</p> <p>Software Developer: Phạm Hồng Ngọc</p> <p>Tester: Đặng Trúc Linh</p> <p>Business Analyst: Hoàng Ngọc Khoa</p> <p>Database Specialist: Nguyễn Thị Ngọc Quỳnh</p> <ul style="list-style-type: none"> • Phạm Thị Xuân Quỳnh: Release the Working Product • Sprint Review: All team • Sprint Retrospective: All team <p>Close-out: All team & Stakeholders</p>
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4.2 Scrum team Organization:

Table 4-2: Table of Scrum Team Organization

Role	Name	Contact	Qualification	Start date	End date	% effort	Note
Product Owner	Phạm Thị Xuân Quỳnh	0981734* **	7 years in Business Analysis	21/2/2024	31/7/2024	95%	
Scrum Master	Đậu Trúc Linh	0936123* **	3 years as a Project Manager.	21/2/2024	31/7/2024	95%	
Development team							
Business Analyst	Nguyễn Thị Ngọc Quỳnh	0968396* **	2 years in Business Analysis.	21/2/2024	25/7/2024	95%	
Tester	Hoàng Ngọc Khoa	0904459* **	2 years in Full-stack Development.	21/2/2024	28/7/2024	95%	
	Đậu Trúc Linh	0936123* **	3 years as a Project Manager.	21/2/2024	30/7/2024	95%	
Software Developer	Phạm Hồng Ngọc	09***** **	3 years in Coding	21/2/2024	5/7/2024	95%	
	Phạm Thị Xuân Quỳnh	0981734* **	4 years in Programming	21/2/2024	29/7/2024	95%	
UI/UX Designer	Phạm Thị Xuân Quỳnh	0981734* **	7 years in Business Analysis	21/2/2024	29/7/2024	95%	

Role	Name	Contact	Qualification	Start date	End date	% effort	Note
	Phạm Hồng Ngọc	09***** **	3 years in UX/UI	21/2/2024	5/7/2024	95%	
Database Specialist	Nguyễn Thị Ngọc Quỳnh	0968396* **	2 years in Database Administration	21/2/2024	25/7/2024	95%	
	Đậu Trúc Linh	0936123* **	3 years as a Project Manager	21/2/2024	30/7/2024	95%	

4.3 RACI Matrix:

Table 4-3: Table of RACI Matrix

RACI MATRIX							
	Product Owner	Scrum Master	Business Analyst	Database Specialist	UX/UI Designer	Software Developer	Tester
	Project Leadership	Project Team Members					
PROJECT DELIVERABLE / ACTIVITY							
PHASE 1: INITIATION							
Define Project Vision	A	C	R	I	I	I	I
Identify Stakeholders	A	C	R	I	I	I	I
Form Scrum Team	A	R	I	I	I	I	I
Product Backlog Creation	A	R	R	I	I	I	I
PHASE 2: SPRINT PLANNING							
Conduct Sprint Planning Meeting	A	R	C	I	I	I	I
Set Sprint Goal	A	R	I	I	I	I	I
Create Sprint Backlog	A	R	C	C	C	C	C
Conduct Daily Scrum Meeting	I	A	R	I	I	I	I
PHASE 3: SPRINT IMPLEMENTATION							
Data Design & Modelling	I	A	C	R	I	I	I
System Architecture Design	I	A	R	C	I	C	I
UX/UI Design	A	I	C	I	R	C	I
Front-End Development	I	A	I	I	C	R	I
Back-End Development	I	A	I	R	I	R	I
Develop test cases based on requirements & design	I	A	C	I	I	C	R
Execute system testing to validate end-to-end functionality	I	A	I	I	I	I	R
Bug-Fixing	I	A	I	I	I	R	C
PHASE 4: SPRINT CLOSE							
Release the Working Product	A	R	I	I	I	I	I
Conduct a meeting to review the work completed during the sprint	A	R	R	I	I	I	I
Sprint Retrospective	I	A	R	C	C	C	C
PHASE 5: CLOSE-OUT							
Write user manual documents	A	R	R	C	C	C	I
Handover	A	R	I	I	I	I	I
End-User Training	A	I	R	C	C	C	I
Write project completion report	I	A	R	I	I	I	I

RACI stands for Responsible, Accountable, Consulted, and Informed. Each letter in the acronym represents the level of ownership each person involved in a project will have on an individual deliverable.

RACI DEFINITIONS		
	Definition	Number to assign
Responsible	Does the work to complete the task	At least 1 per task
Accountable	Delegates work and is the last one to review the task or deliverable before it's deemed complete	Limit to 1 per task
Consulted	Provides input based on how it will impact their project work or their domain of expertise on the deliverable	No max or minimum
Informed	Needs to be kept in the loop on project progress, rather than roped into details of every deliverable	No max or minimum

teamgantt

Figure 4-1: RACI Definitions

Figure 4.2. Figure of RACI definitions

5 COMMUNICATION AND COLLABORATION

5.1 Communication Plan:

5.1.1 Project Reports

Table 5-1: Table of Communication Plan for Project Reports

Project Report	When	Method/Tool	PIC	Information/Note
Sprint Planning report	Thursday - After the Retrospective meeting	By mail	Scrum Master: Linh DAU	Conclude milestones of the project and provide team members general information, goal, requirements of the project.
Sprint 1 Report	After the sprint review meeting	By mail	Scrum Master: Linh DAU	Confirmation of completing the required functions, bugs, faults need to improve,..
Sprint 2 Report	After the sprint review meeting	By mail	Scrum Master: Linh DAU	Confirmation of completing the required functions, bugs, faults need to improve,..

5.1.2 Communication plan for sprint Initiation

Table 5-2: Table of Communication Plan for Sprint Initial

Ceremony	Time/Duration	Location	Participants	Note
Start sprint	Wednesday 2/21/2024	- Online through Google Meet	All members	
End sprint	Wednesday 3/6/2024	– Offline: 1 Trinh Van Bo, Hanoi	All members	
Sprint duration	11 days			
Planning Meeting I	Wednesday – 2/21/2024 (Start day) Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG UX/UI Designer: Ngoc PHAM Database Specialist: Quynh PHAM, Linh DAU Dev Team: Quynh PHAM, Ngoc PHAM Other Members	

Ceremony	Time/Duration	Location	Participants	Note
Planning Meeting II	Saturday – 2/24/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU Team Members: Ngoc PHAM, Khoa HOANG, Quynh NGUYEN	
Planning Meeting III	Tuesday – 2/28/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Scrum Master: Linh DAU Dev Team: Ngoc PHAM, Quynh PHAM	
Daily meeting	Everyday Evening: 20:00 PM – 20:30 PM	Online through Google Meet	All members	
Product Backlog Refinement	N/A			Gathered customer requirements, no view on product backlog.
Sprint Review meeting	Monday - 3/4/2024 Afternoon: 14:00 PM – 17:30 PM	1 st Trinh Van Bo St., Hanoi	All members	Clear goals and user requirements

Ceremony	Time/Duration	Location	Participants	Note
Retrospective meeting	Thursday – 3/7/2024 The day before the next sprint start Afternoon 14:00 PM – 17:30PM	1 st Trinh Van Bo St, Hanoi	Product Owner: Quynh PHAM Scrum Master: Linh DAU Dev team: Ngoc PHAM. Quynh PHAM Members: Khoa HOANG, Quynh NGUYEN	

5.1.3 Communication Plan for Sprint 1

Table 5-3: Communication Plan for Sprint 1

Ceremony	Time/Duration	Location	Participants	Note
Start sprint	Friday - 3/8/2024 The begin day of sprint 1 14:00 PM – 16:00 PM	1 st Trinh Van Bo St, Hanoi	All members	
End sprint	Friday – 3/22/2024	1 st Trinh Van Bo St, Hanoi	All members	
Sprint duration	14 days			
Planning Meeting I (Database building)	Saturday – 3/9/2024 (The next day) Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU Database Specialist: Quynh	

Ceremony	Time/Duration	Location	Participants	Note
			NGUYEN, Linh DAU Tester: Khoa HOANG	
Planning Meeting II (User story 1,2)	Monday – 3/11/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU Development Team: Ngoc PHAM, Quynh PHAM BA: Quynh NGUYEN UX/UI Designer: Ngoc PHAM	
Planning Meeting III (User story 3,16,19)	Friday – 3/15/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU Database Specialist: Quynh NGUYEN, Linh DAU Tester: Khoa HOANG	

Ceremony	Time/Duration	Location	Participants	Note
Daily meeting	Everyday Evening: 20:00 PM – 20:30 PM	Online through Google Meet	All members	List the bugs and propose solutions Update the timeline
Product Backlog Refinement	Tuesday – 3/19/2024	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU Database Specialist: Quynh NGUYEN, Linh DAU Tester: Khoa HOANG	Complete demo use cases 1,3,16,19
Sprint Review meeting	Thursday - 3/22/2024 Afternoon: 14:00 PM – 17:00 PM	1 st Trinh Van Bo St., Hanoi	All members	Review all the requirements about the first sprint and confirm the workload as well as timeline
Retrospective meeting	Sunday – 3/24/2024 The day before the next sprint start Afternoon 14:00 PM – 16:00 PM	1 st Trinh Van Bo St, Hanoi	All members	

5.1.4 Communication Plan for Sprint 2

Table 5-4: Communication Plan for Sprint 2

Ceremony	Time/Duration	Location	Participants	Note
Start sprint	Thursday 4/25/2024	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	
End sprint	Thursday – 05/16/2024	Offline: 1 Trinh Van Bo, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM UI/UX Designer: Ngoc PHAM Database Specialist:	

Ceremony	Time/Duration	Location	Participants	Note
			Quynh NGUYEN	
Sprint duration	22 days			
Planning Meeting I (Goal Setting)	Friday– 4/26/2024 (Start day) Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	
Meeting I (User story 4,8)	Tuesday– 4/29/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	

Ceremony	Time/Duration	Location	Participants	Note
			Database Specialist: Linh DAU	
Meeting II (User story 4,8)	Monday – 5/6/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	Notes: Recommendation and confirmation in user story 4 and 8.
Meeting III (User story 9,10,12)	Tuesday – 5/10/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Meeting V (User story 10,12)	Saturday- 5/13/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Scrum Master: Linh DAU BA: Quynh NGUYEN	Notes: Updating user story 10 and 12, together with

Ceremony	Time/Duration	Location	Participants	Note
			Tester: Khoa HOANG Software Developer: Ngoc PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	user story fixing for flow logic.
Sprint Review meeting	Monday - 05/15/2024 Afternoon: 14:00 PM – 17:00 PM	1 st Trinh Van Bo St., Hanoi	PO: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	Review all the requirements for the first sprint and confirm the workload as well as the timeline
Retrospective meeting	Tuesday – 05/16/2024 The day before the next sprint start	1 st Trinh Van Bo St, Hanoi	PO: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN	

Ceremony	Time/Duration	Location	Participants	Note
	Afternoon 14:00 PM – 16:00 PM		Tester: Khoa HOANG Software Developer: Ngoc PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	

5.2 Actual communication

5.2.1 Actual communication for Sprint Initiation

Table 5-5: Actual Communication for Sprint Initiation

Ceremony	Time/Duration	Location	Participants	Note
Start sprint	Thursday - 2/21/2024	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	

Ceremony	Time/Duration	Location	Participants	Note
End sprint	Tuesday– 3/4/2024	Offline: 1 Trinh Van Bo, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	
Sprint duration	13 days			
Define Project Vision	Thursday – 2/21/2024 (Start day) Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM	
Identify Stakeholders	Thursday – 2/23/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM	

Ceremony	Time/Duration	Location	Participants	Note
Form Scrum Team	Friday– 2/28/2024 Evening: 21:00 PM – 23:00 PM		Project Owner: Quynh PHAM	
Product Backlog Creation	Monday – 2/29/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	Gathered customer requirements, no view on the product backlog.

5.2.2 Actual Communication for Sprint 1

Table 5-6: Actual Communication for Sprint 1

Ceremony	Time/Duration	Location	Participants	Note
Start sprint	Wednesday - 3/5/2024	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG	

Ceremony	Time/Duration	Location	Participants	Note
			Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	
End sprint	Wednesday – 4/20/2024	Offline: 1 Trinh Van Bo, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	
Sprint duration	47 days			
Planning Meeting I	Thursday – 3/5/2024 (Start day) Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN	

Ceremony		Time/Duration	Location	Participants	Note
				<p>Tester: Khoa HOANG</p> <p>Software Developer: Ngoc PHAM, Quynh PHAM</p> <p>UI/UX Designer: Ngoc PHAM</p> <p>Database Specialist: Linh DAU</p>	
Sprint Goal Setting		<p>Thursday – 3/5/2024</p> <p>Evening: 21:00 PM – 23:00 PM</p>	<p>Online through Google Meet</p>	<p>Project Owner: Quynh PHAM</p> <p>Scrum Master: Linh DAU</p> <p>BA: Quynh NGUYEN</p> <p>Tester: Khoa HOANG</p> <p>Software Developer: Ngoc PHAM, Quynh PHAM</p> <p>UI/UX Designer: Ngoc PHAM</p> <p>Database Specialist: Linh DAU</p>	
Product Backlog Creation		<p>Friday – 3/6/2024</p> <p>Evening: 21:00 PM – 23:00 PM</p>	<p>Online through Google Meet</p>		<p>Gathered customer requirements, no view on</p>

Ceremony	Time/Duration	Location	Participants	Note
				the product backlog.
Meeting I (User story 1)	Monday – 3/12/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	
Meeting II (User story 2)	Friday – 3/19/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	

Ceremony	Time/Duration	Location	Participants	Note
Meeting III (User story 3)	Friday – 3/26/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	
Meeting IV (User story 16)	Wednesday- – 4/2/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	

Ceremony	Time/Duration	Location	Participants	Note
Meeting V (User story 19)	Monday- – 4/9/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	
Release the Working Product	Tuesday- – 4/16/2024 Evening: 21:00 PM – 23:00 PM		Project Owner: Quynh PHAM	
Sprint Review meeting	Monday - 4/18/2024 Afternoon: 14:00 PM – 17:00 PM	1 st Trinh Van Bo St., Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	Review all the requirements for the first sprint and confirm the workload as well as the timeline

Ceremony	Time/Duration	Location	Participants	Note
			Database Specialist: Linh DAU	
Retrospective meeting	Wednesday – 4/20/2024 The day before the next sprint start Afternoon 14:00 PM – 16:00 PM	1 st Trinh Van Bo St, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM Database Specialist: Linh DAU	

5.2.3 Actual Communication for Sprint 2

Ceremony	Time/Duration	Location	Participants	Note
Start sprint	Monday – 4/22/2024	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM	

Ceremony	Time/Duration	Location	Participants	Note
			UI/UX Designer: Ngoc PHAM	
End sprint	Friday – 6/7/2024	Offline: 1 Trinh Van Bo, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Sprint duration	47 days			
Planning Meeting	Tuesday– 4/23/2024 (Start day) Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	

Ceremony	Time/Duration	Location	Participants	Note
Sprint Goal Setting	Tuesday – 4/23/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Product Backlog Creation	Monday – 4/23/2024 Evening: 21:00 PM – 23:00 PM			Gathered customer requirements, no view on the product backlog.
Meeting I (User story 4)	Tuesday – 4/29/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG	

Ceremony	Time/Duration	Location	Participants	Note
			Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Meeting II (User story 8)	Monday – 5/6/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Meeting III (User story 9)	Monday – 5/13/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	

Ceremony	Time/Duration	Location	Participants	Note
Meeting IV (User story 10)	Monday- 5/20/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Meeting V (User story 12)	Monday- 5/27/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Release the Working Product	Monday 6/3/2024 Evening: 21:00 PM – 23:00 PM		Project Owner: Quynh PHAM	

Ceremony	Time/Duration	Location	Participants	Note
Sprint Review meeting	Wednesday - 6/5/2024 Afternoon: 14:00 PM – 17:00 PM	1 st Trinh Van Bo St., Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	Review all the requirements for the first sprint and confirm the workload as well as the timeline
Retrospective meeting	Friday – 6/7/2024 The day before the next sprint start Afternoon 14:00 PM – 16:00 PM	1 st Trinh Van Bo St, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	

5.3 Communication Log:

The communication log for the project is provided below:

Table 5-7: Communication Log

Date	Method	Type	Description	Responsible Team Member
02/21/2024	Meeting Online through Google Meet	Project	Group formation and first introduction about the project	All members
02/22/2024	Meeting Online through Google Meet	Project	Discuss and choose the topic for our project	All members
02/25/2024	Meeting Online through Google Meet	Project	Discuss about the needed skills for the project	PO Scrum Master Team members
02/29/2024	Meeting Online through Google Meet	Project	Determine possible user stories and draw WBS	All members
03/04/2024	Offline in 1 st Trinh Van Bo	Project	Review all the requirements in class	All members
03/04/2024	Online through Google Meet	Project	Fix the conditions and finalize them	All members
03/16/2024	Zalo/ Google Docs	Project	Generate user stories formally	All members
03/18/2024	Jira	Project	Generate Jira Team	PO: Quynh PHAM
03/19/2024	Offline in class	Project	Read the functions/non-function documents and create the functional/non-functional requirements	All members

Date	Method	Type	Description	Responsible Team Member
03/26/2024	Google Docs	Project	Write subtasks for user stories which have been finalized	All members
04/09/2024	Zalo / Google Meet	Project	Discuss and drive possible risks that could happen in our project	All members
04/10/2024	Jira	Project	Update the timeline and schedule workload	PO: Quynh PHAM
04/20/2024	Zalo	Project	Fix the WBS Complete the subtasks and conclude the functional/non-functional requirements Start demo the prototype	All members
04/22/2024	Google Meet	Project	Discuss expected prototypes Fix the designs	All members
04/27/2024	Zalo	Project	Conduct the communication plan for our project	All members
05/03/2024	Zalo	Project	Conduct the communication log	All members
05/15/2024	Zalo/ Figma	Project	Remake and add more functions into the project prototype (search function, read book function)	UX/UI Designer: Ngoc PHAM
06/07/2024	Zalo	Project	Cover again the project charter especially financial plan for our project	Tester: Khoa HOANG BA: Quynh NGUYEN
06/15/2024	Zalo/ GG Docs	Project	Implementing meeting minutes for each member of team	All members

5.4 Meeting minutes

5.4.1 Meeting Minutes 1

Table 5-8: Meeting Minutes 1

VNU-IS Library Management Project Team Meeting			
MINUTES	04/09/2024	5:00 p.m	R.406 - TVB
MEETING CALLED BY	Team		
ATTENDEES	Quynh PHAM, Linh DAU, Ngoc PHAM, Quynh NGUYEN, Khoa HOANG		
ABSENTEES	none		
MINUTES	Quynh PHAM		
Agenda topics			
90 MIN	RISK MANAGEMENT		
DISCUSSION			
Project Overview and Risk Identification			
The meeting began with an overview of the library management project, covering objectives, timelines, and key deliverables. The team emphasized the importance of a robust risk management framework to ensure project success. Initial risks identified include risks related to resources, budget, time, technology, and quality.			
Development of Risk Management Framework			
A draft document outlining the risk management process was created, including a comprehensive risk register and a detailed risk assessment matrix. Team members were assigned tasks to identify specific risks related to their responsibilities and prepare mitigation strategies. Continuous risk monitoring and updating of the risk register were highlighted as essential.			
Risk Assessment and Mitigation			
Team members discuss and evaluate potential risks and the challenges they bring. Then discuss additional risks and recommend appropriate strategies to minimize their impact. The team agreed to adopt a risk management approach based on the university’s risk management guidelines.			

VNU-IS Library Management Project Team Meeting		
CONCLUSIONS		
Confirmation of the next meeting date to review the final risk management plan.		
Agreement on the importance of a collaborative approach to risk management, with each member contributing to risk identification and mitigation.		
ACTION ITEMS	PERSON RESPONSIBLE	DEADLINE
Complete risk identification and mitigation strategies	All members	04/12/2024
Draft risk management plan	Linh DAU	04/09/2024
Review and finalize risk management plan	All members	04/20/2024
Prepare Gantt chart and update project schedule	Quynh NGUYEN	04/21/2024

5.4.2 Meeting minutes 2

Table 5-9: Meeting Minutes 2

VNU-IS Library Management Project Team Meeting			
MINUTES	05/14/2024	10:00 p.m	Google Meet
MEETING CALLED BY	Team		
ATTENDEES	Quynh PHAM, Linh DAU, Quynh NGUYEN, Khoa HOANG, Ngoc PHAM		
ABSENTEES	none		
MINUTES	Linh DAU		
Agenda topics			
60 MIN	PROTOTYPE		
DISCUSSION			
Project Overview and Design Assignments: <ul style="list-style-type: none">- The meeting started with a discussion on the overall design goals for the library management website, focusing on usability and alignment with the VNU-IS branding.			

VNU-IS Library Management Project Team Meeting		
<ul style="list-style-type: none"> - Each member was assigned specific design tasks using Figma to create a cohesive and user-friendly interface. 		
Design Task Assignments: <ul style="list-style-type: none"> - <i>Home Page, Sign In, and Login Interface:</i> <ul style="list-style-type: none"> + Assigned to: Ngoc PHAM + Details: Ngoc will design the home page, sign in, and log in interfaces. The design will use blue and yellow tones to match the university's logo and branding. - <i>Student User Interface:</i> <ul style="list-style-type: none"> + Assigned to: Khoa HOANG and Quynh NGUYEN + Details: They will design the student user interface, allowing students to view available books, place book holds, and check their borrowed books and due dates. The design will take inspiration from other standard library interfaces. - <i>Admin Interface for Librarians:</i> <ul style="list-style-type: none"> + Assigned to: Linh DAU and Quynh PHAM + Details: They will design the admin interface for librarians to manage the book inventory, including adding, editing, and deleting books. Additionally, the interface will allow librarians to view student borrowing information and provide a dashboard with statistics and reports. 		
Prototype Review and Feedback: <ul style="list-style-type: none"> - The team agreed to review the initial design prototypes in the next meeting, providing feedback and suggestions for improvements. - Continuous collaboration and communication through the Figma platform were encouraged to ensure design consistency and coherence. 		
CONCLUSIONS		
<p>Confirmation of the design task assignments and timelines.</p> <p>Agreement to review design prototypes in the next meeting and iterate based on feedback.</p>		
ACTION ITEMS	PERSON RESPONSIBLE	DEADLINE
Design home page, sign in, log in	Ngoc PHAM	05/16/2024
Design student user interface	Khoa HOANG & Quynh NGUYEN	05/19/2024
Design admin interface	Linh DAU & Quynh PHAM	05/19/2024
Review design prototypes	All members	05/22/2024

GENERAL NOTES	Next meeting is scheduled for 05/22/2024. Group members to confirm ability to attend.
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5.4.3 Meeting minutes 3

Table 5-10: Meeting Minutes 3

VNU-IS Library Management Project Team Meeting			
MINUTES	05/22/2024	8. 30pm	MS.Teams
MEETING CALLED BY	Team		
ATTENDEES	Quynh PHAM, Linh DAU, Ngoc PHAM, Quynh NGUYEN, Khoa HOANG		
ABSENTEES	None		
MINUTES	Khoa HOANG		
Agenda topics			
60 MIN	Scrum Roles and Responsibilities		
DISCUSSION			
Project Overview and Role Definition:			
Overview of project and key deliverables.			
Defined roles and responsibilities.			
Roles and Responsibilities			
- Product Owner: Quynh PHAM			
Promotes product vision and prioritizes backlog.			
Aligns product with customer needs and secures release approvals.			
- Scrum Master: Linh DAU			
Coaches the team, facilitates events, and manages documentation.			
- Business Analyst: Quynh NGUYEN			
Identifies features and updates documentation			
- Tester: Khoa HOANG			
Supports testing and ensures quality			

<ul style="list-style-type: none"> - Software Developer: Ngoc PHAM <p>Implements features and collaborates on design</p> <ul style="list-style-type: none"> - UI/UX Designer: Quynh PHAM <p>Designs interface and ensures cohesive design</p> <ul style="list-style-type: none"> - Database Specialist: Linh DAU <p>Manages database and supports development.</p>		
CONCLUSIONS		
Each team member's role and responsibilities were clearly defined and agreed upon.		
Team members will adhere to their defined roles to ensure smooth project execution.		
ACTION ITEMS	PERSON RESPONSIBLE	DEADLINE
Finalize role descriptions and share with team	Khoa HOANG	05/23/2024
Align sprint backlog with defined roles	Linh DAU	05/23/2024
Conduct training sessions for role-specific tasks	Quynh PHAM	05/28/2024

6 RISK MANAGEMENT

Table 6-1: Risk Management

Risk Description	Category	Probability	Impact	Level	Risk Mitigation Plan
There might be underestimation of all potential expenses associated with the project, including hardware, software, licensing fees, staffing, training, maintenance, and unforeseen expenses.	Budget Risk	Medium	High		<ul style="list-style-type: none"> - Regularly review the budget and adjust it as needed. - Allocate a contingency reserve within the budget to account for unexpected costs or scope changes.
Lack of technical skills among the project team members could lead to delays, errors, or incomplete functionality.	Resource Risk	Medium	High		<ul style="list-style-type: none"> - Pair less experienced team members with more senior developers as mentors. - Consider inviting external experts for specific technical tasks or to provide guidance on complex issues.
The International School delays in allocating or providing the budget required for the project. (This could be	Budget Risk	Low	High		Ensure that the project contract includes clear provisions regarding budget allocation, payment schedules, and procedures for handling delays.

Risk Description	Category	Probability	Impact	Level	Risk Mitigation Plan
due to administrative processes, budgetary constraints, or other internal factors within the organization.)					
Extended holiday periods (Hung King's death anniversary, April 30 - May 1) may reduce the availability of key links, member group projects and external service providers.	Time Risk	High	High		Increase salaries and reward employees for working overtime during the holiday season.
Conflicts between project team members could lead delays and even turnover employees. An unsociable work environment will lead to reduced work performance	Resource Risk	Very High	Low		<ul style="list-style-type: none"> - Foster activities to connect people such as team building/ bonding - Foster a team environment based on open communication and mutual respect. - Implement conflict resolution strategies. - Assign a project manager to mediate and resolve disagreements.
Choosing inappropriate technology will cause the project to fail to meet requirements, waste time on repairs and	Technology Risk	Medium	Very High		<ul style="list-style-type: none"> - Ask experts for better appropriate technology - Do an alternative research explore alternative technologies that better align with the project

Risk Description	Category	Probability	Impact	Level	Risk Mitigation Plan
cost a lot of money.					requirements and objectives
The products do not meet requirements about user security because the website's anti-malware system is poor, making it easy for hackers to infiltrate and steal user information.	Quality Risk	High	High		<ul style="list-style-type: none"> - Implement appropriate security controls and measures to mitigate identified risks and address security gaps. -Introducing training program for employee to enhance skills and hiring expert about security
Over the deadline of one sprint of the project because some sprints are not carefully planned in terms of implementation manpower and time.	Time Risk	High	Medium		<ul style="list-style-type: none"> - Balance workload and deadline under realistic estimate - Allocate more human resource for completing task if over deadline - Use the insights gained from addressing the missed sprint deadline to adjust future sprint planning and project timelines=
Project team members are sick, leading to interrupted work between members and affected work efficiency	Resource Risk	Medium	Medium		<ul style="list-style-type: none"> - Develop a cross-functional team with overlapping skill sets. - Encourage team members to take preventive

Risk Description	Category	Probability	Impact	Level	Risk Mitigation Plan
					measures to stay healthy. - Have a backup plan for critical tasks in case of unexpected absences.
The new system may be difficult for librarians and students to use, leading to frustration and reduced adoption.	Quality Risk	High	High		- Get librarians and students involved in the design process from the beginning. This helps ensure the system meets their needs and is easy to use. - Offer various training materials and ongoing support options (help desk, FAQs) to empower users and address any difficulties.
Integrating the new library management system with existing systems (e.g., security systems, online catalogs) can be time-consuming and require additional development work.	Time Risk	Very High	High		- Prioritize and integrate critical systems first (e.g., security systems) to maintain core functionality. Phase in integration with less critical systems in a controlled manner. - Develop backup plans in case of unforeseen integration issues.
The project schedule is too tight, lacking contingency time for problems	Time Risk	High	Very High		- Develop a detailed project plan with clear milestones and deadlines.

Risk Description	Category	Probability	Impact	Level	Risk Mitigation Plan
that arise, leading to slow progress and affecting website quality.					<ul style="list-style-type: none"> - Assign tasks and responsibilities based on team members' expertise. - Utilize project management tools for tracking progress.
The system could be in danger due to some cyber threats	Technology Risk	Medium	Medium		<ul style="list-style-type: none"> -Implement robust cybersecurity measures (firewalls) -Ensure all software components are regularly updated -Provide cybersecurity training to library staff
There might be compatibility issues with existing library hardware and software for example new updates, unintentional damages,...	Technology Risk	Low	High		<ul style="list-style-type: none"> -Frequently compatibility testing before implementing new components -Collaborate closely with library staff and gathering student feedbacks
The system performance bottlenecks or system downtime during peak usage periods result from overloading of the server, directly affect user experience	Quality Risk	High	Very High		<ul style="list-style-type: none"> -Optimize system resources -Consider upgrading hardware components
Insufficient budget allocation for	Budget Risk	High	Medium		<ul style="list-style-type: none"> -Prioritize for critical system development and

Risk Description	Category	Probability	Impact	Level	Risk Mitigation Plan
system development and maintenance may happen thus there might be some lacks in management skills among team members			m		maintenance -Explore cost-savings measures
Delay in cataloging and organizing library resources, leading to inefficiencies in resource retrieval and management	Time Risk	Medium	Medium		<ul style="list-style-type: none"> - Implement a systematic cataloging process with clear guidelines and responsibilities. - Utilize library management software to streamline resource organization and retrieval. - Conduct regular reviews of the cataloging process to identify and address bottlenecks.
Inadequate training and support for library staff on new technology implementations, resulting in resistance to change and inefficiencies in system usage.	Technology Risk	High	Medium		<ul style="list-style-type: none"> - Provide comprehensive training programs for library staff on new technologies and systems. - Offer ongoing technical support and troubleshooting resources to address staff concerns and challenges. - Foster a culture of continuous learning and adaptation to encourage staff acceptance and utilization of new technologies.

Risk Description	Category	Probability	Impact	Level	Risk Mitigation Plan
Lack of stakeholder engagement and collaboration in library project planning and decision-making, leading to misalignment of project goals and stakeholder expectations.	Resource Risk	Medium	High		<ul style="list-style-type: none"> - Establish clear communication channels and regular stakeholder meetings to facilitate engagement and collaboration. - Involve stakeholders in project planning and decision-making processes to ensure alignment with organizational objectives. - Provide stakeholders with regular project updates and opportunities for feedback to address concerns and mitigate potential conflicts.
Insufficient allocation of resources for library system maintenance and support, leading to system downtime and disruptions in library services.	Budget Risk	High	High		<ul style="list-style-type: none"> - Develop a comprehensive maintenance plan outlining regular system updates, backups, and troubleshooting procedures. - Allocate sufficient budget and staffing resources for ongoing system maintenance - Implement service level agreements with vendors or IT support teams to ensure timely resolution of system issues and minimize downtime.

7 User Requirements Specifications

7.1 User Requirements Analysis

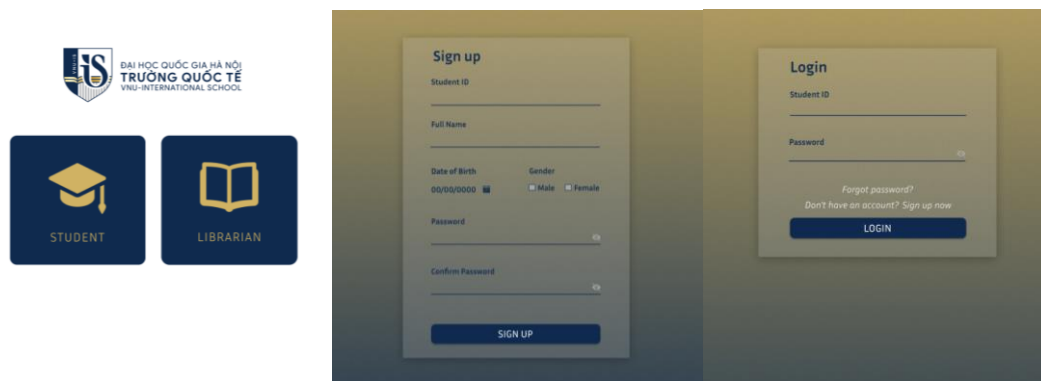
To provide better view about our project prototype, here is detail user requirement analysis about our project:

User Requirement	Requirement	Detail
User Registration and Login	Users are allowed to login the system	<ul style="list-style-type: none">- Users can register with name, email, and password.- Users can log in with email and password.
Book Search and Browse	Users should be able to search for and browse books	<ul style="list-style-type: none">- Users can search by book title and view all books with related strings.
Book Detail Page	Users should be able to view detailed information about a book	<ul style="list-style-type: none">- Book title, author, description, genre, publication year.- Book cover image.- Availability status (e.g., available, checked out).
Book Borrowing and Returning	Users should be able to borrow and return books	<ul style="list-style-type: none">- Borrow button on available books.- Return button for borrowed books.- Notification of due dates and overdue books.
E-books and Online Reading	Users should be able to read e-books online	<ul style="list-style-type: none">- Access to source books online, view all contents of selected books.
User Reviews and Ratings	Users should be able to leave reviews and rate books	<ul style="list-style-type: none">- Star rating system (e.g., 1 to 5 stars).- Written reviews.- Display of average rating and user reviews on the book details page.
Recommendations	The system should	<ul style="list-style-type: none">- Personalized recommendations

	provide book recommendations	based on user reading history. <ul style="list-style-type: none"> - General recommendations for popular or new books.
Notifications	Users should receive notifications about their account and books	<ul style="list-style-type: none"> - In-app notifications for due dates, new arrivals, and special events
Admin Panel	Librarians should have a panel to manage the library	<ul style="list-style-type: none"> - Manage user accounts (create, edit, delete). - Add, edit, and remove books. - Monitor borrowing and returning activities.

7.2 User Interface Prototype:

Below is our designed prototype, which includes all users requirements for the system.



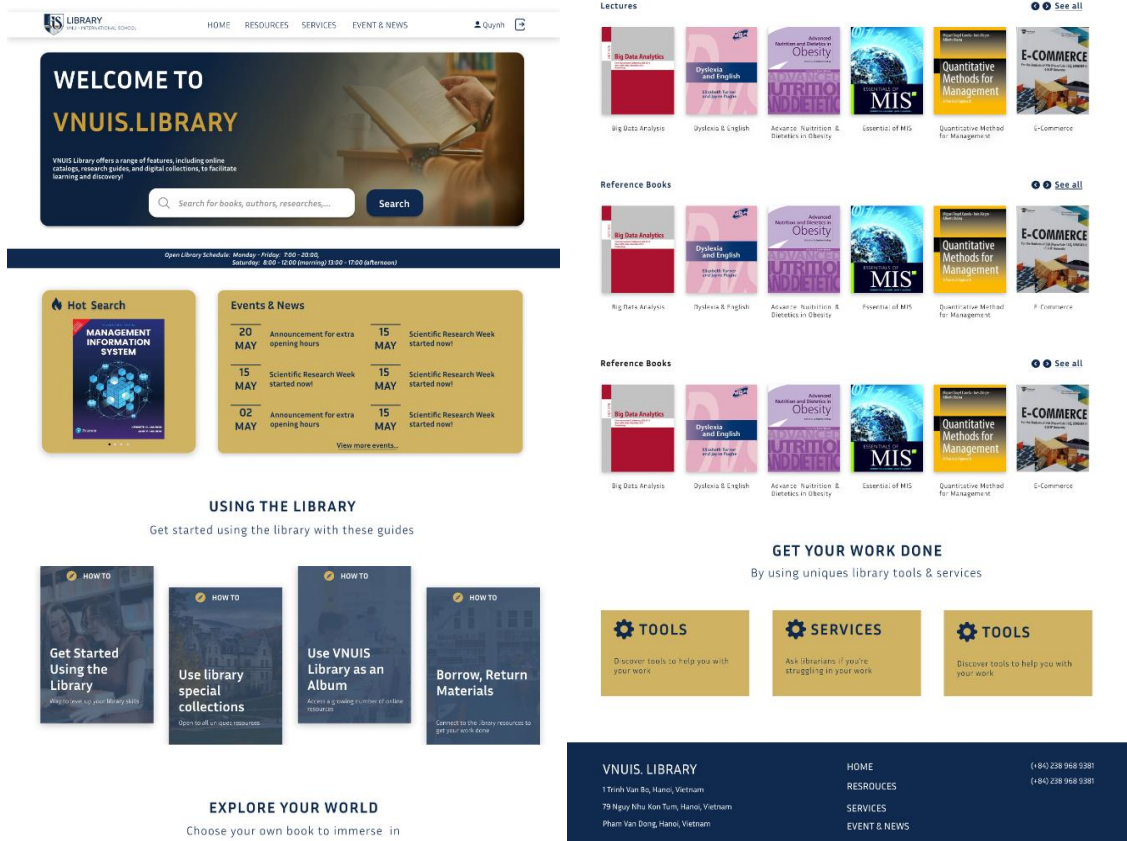


Figure 7-1: Student Homepage

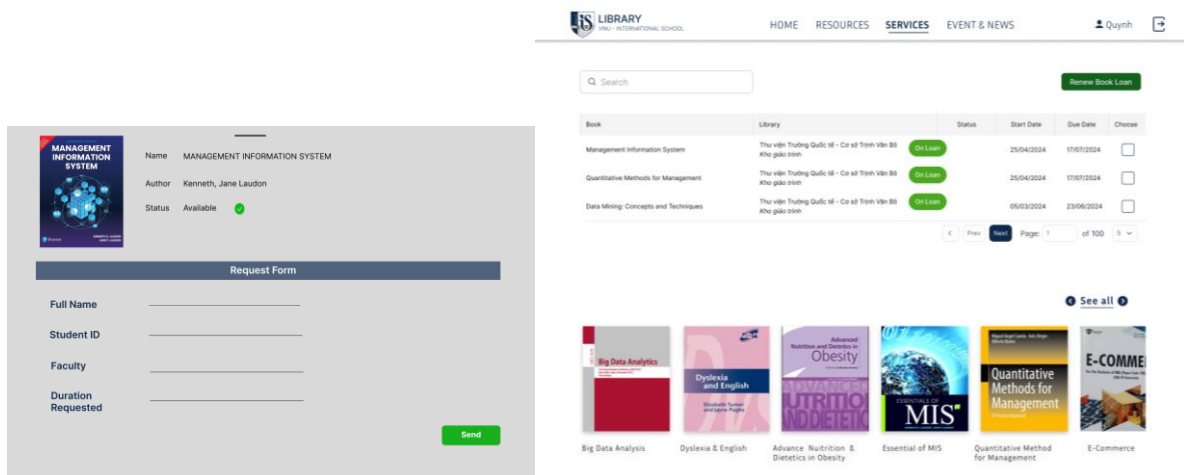


Figure 7-2: Borrowing Books

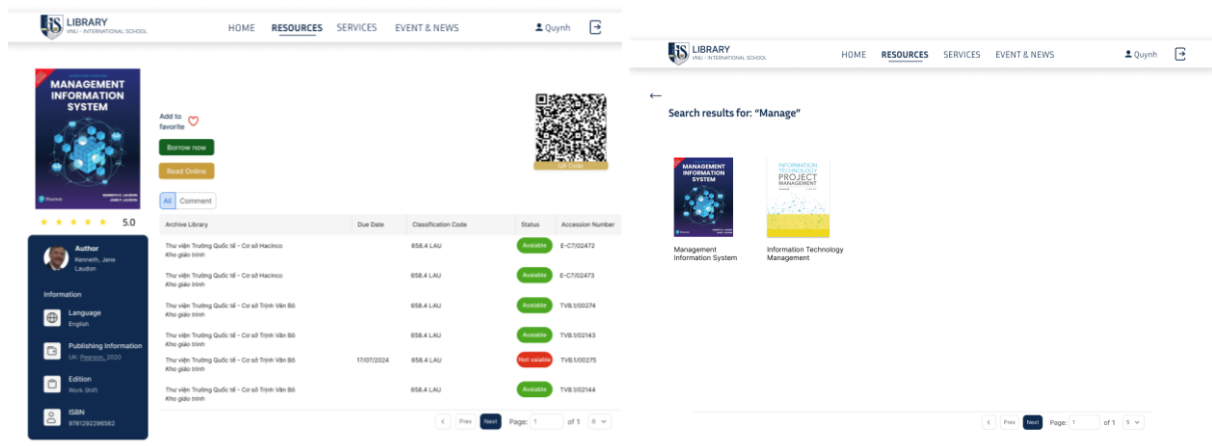


Figure 7-3: Searching for Books

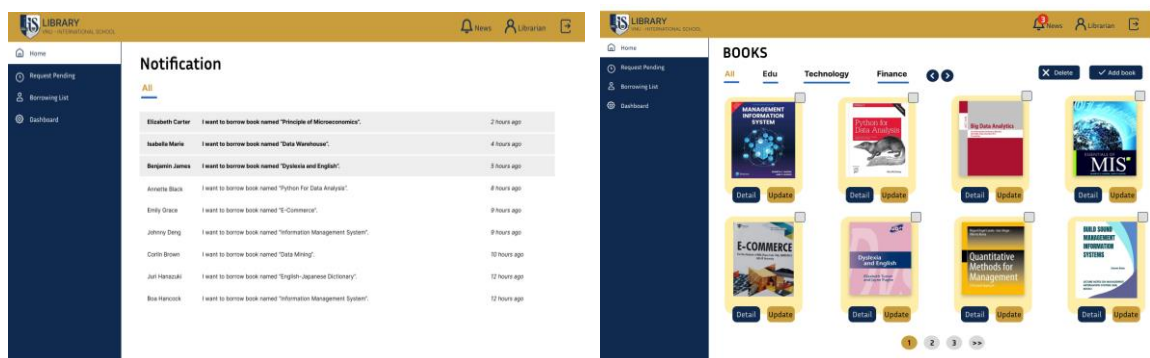


Figure 7-4: Librarian Homepage



8 CONCLUSION

The Online Library Management System we built is considered as an illustration for applying technologies project management principles and practices. By understanding the project life cycle, we have figured out the best ways to use project management tools and techniques to ensure everything goes under our control, from the beginning to the end. In this project, we used Agile to help us stay organized and stable. Regular meetings and reviews helped us catch and solve issues early, keeping the project within its goals and timeline as well as planning ahead, managing possible risks, etc. Moreover, we are also effectively managing the project's scope, ensuring that the system meets the library's specific requirements while maintaining a focus on the core functionalities.

The successful implementation of the Online Library Management System project has provided valuable lessons for our team, which can be applied to future IT projects. These lessons include the importance of effective communication, the need for a well-defined project scope and the value of proactive risk management.

1

9 APPENDIX

9.1 Project charter

9.1.1 General Project Information

PROJECT NAME:

PROJECT MANAGER

PROJECT SPONSOR

Library Management System	Quynh PHAM	International School - VNUIS
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EMAIL

PHONE

ORGANIZATIONAL UNIT

vnuis.library@gmail.com	352-718- 2003	Library Service Department
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GREEN

BELTS

EXPECTED START

ASSIGNED

DATE

EXPECTED COMPLETION DATE

4 members	02/21/2024	09/11/2024
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BLACK BELTS
ASSIGNED

EXPECTED SAVINGS

ESTIMATED COSTS

2 members	\$5.000.000	\$9.831.000
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9.1.2 Project Overview

PROBLEM OR ISSUE	<p>Initially, the integrated library system at VNU is accessible to both students and lecturers. However, we are planning to establish a distinct system managed by the International School to cater specifically to the academic community within the school.</p> <p>The International School operates across three campuses, making the distribution of books among these branches a challenging task. Additionally, limited library hours restrict student access, especially as there are no online options. Besides, finding books in the physical library may pose time wasting, out-of-stock, ...</p> <p>To address all the above issues, our group intends to build an online library management system for students and lecturers in the school</p>
PURPOSE OF PROJECT	<p>To meet students' needs like reading and borrowing books and enhance reading and learning potential of students, we aim to optimize library operations through advancements in technology, ensuring efficient management of library resources in case books are damaged.</p> <p>This approach takes advantage of technology for a smoother, more user-friendly website to expand the number of end users using the system, together with the modernization of library services in searching books.</p>
GOALS/ METRICS	<p>The metrics are based on:</p> <ul style="list-style-type: none"> -Number of books borrowed: Increase by 30%

	<ul style="list-style-type: none"> -Number of people use the system: Increase by 15% -Library usage outside working hours through the online system: Increase by 10% -Time saved with manual library tasks: Reduced by 35% -Cost in library operations within the first year: Decrease by 20% -Achieve a user satisfaction rating of 4 out of 5 or higher based on feedback surveys
EXPECTED DELIVERABLES	<ul style="list-style-type: none"> ● A fully operational online library management system that allows users to search, borrow, return, and read books easily - The website with domain name (www.vnuis.library.vn) will be subject to review - Source code of the website - All functions mentioned in the requirements like searching, borrowing, lending,... - Security measures such as firewalls, antivirus software, and security updates ● Clear and comprehensive training modules for library staff ● A detailed plan for how the system will be maintained, including bug fixes, and technical problem resolution ● Integrated tools for example <i>RFID - Radio Frequency Identification to track the location of books and manage borrowing and returning, ILS - Integrated Library System provides information about books, readers, etc</i>

9.1.3 Project Scope

WITHIN SCOPE	<ul style="list-style-type: none"> ● We're implementing a fully functional online library management system to satisfy the needs of students and lecturers ● Estimated time: 7 months ● Estimated budget: \$ 8000
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	<ul style="list-style-type: none"> ● Estimated user: 3000 ● Estimated admin: 25 ● Estimated location: <ul style="list-style-type: none"> - So 1 Trinh Van Bo - 79 Nguy Nhu, Kon Tum - Xuan Thuy, Cau Giay <p>Main functions:</p> <ul style="list-style-type: none"> ● System: <ul style="list-style-type: none"> - The system should support the management of all library resources, including books, journals, electronic documents, etc - The system should have a powerful search function to allow users to find desired information easily - Provide an easy and secure registration process along with user authentication - Ensure the safety of users' personal data and library information. - Support multiple languages to serve a diverse community ● Users <ul style="list-style-type: none"> - Users are allowed to search for documents together with borrowing and reading online - Users are able to tracking their borrowing and returning history - Users could preorder the book they want and receive it at the physical library
OUTSIDE OF SCOPE	<ul style="list-style-type: none"> - Adding new features not discussed in the initial scope - Excluding update - Excluding improve physical infrastructure or digitise all existing physical documents.

9.1.4 Tentative Schedule

KEY MILESTONE		START	FINISH
Initiation	Define Project Vision	22/02/2024	27/02/2024
	Identify StakeHolders	27/02/2024	28/02/2024
	Form Scrum Team	28/02/2024	04/03/2024
	Product Backlog Creation	04/03/2024	05/03/2024
Sprint 1	Sprint Planning Meeting	05/03/2024	05/03/2024
	Sprint Goal Setting	05/03/2024	11/03/2024
	Sprint Backlog Creation	11/03/2024	18/03/2024
	User Story 1, 2, 3, 16, 19	18/03/2024	17/04/2024
	Release the Working Product	17/04/2024	19/04/2024

	Sprint Review	19/04/2024	20/04/2024
	Sprint Retrospective	20/04/2024	22/04/2024
Sprint 2	Sprint Planning Meeting	22/04/2024	22/04/2024
	Sprint Goal Setting	22/04/2024	26/04/2024
	Sprint Backlog Creation	26/04/2024	03/05/2024
	User Story 4, 8, 9, 10, 12	03/05/2024	04/06/2024
	Release the Working Product	04/06/2024	06/06/2024
	Sprint Review	06/06/2024	07/06/2024
	Sprint Retrospective	07/06/2024	10/06/2024
Sprint 3	Sprint Planning Meeting	10/06/2024	10/06/2024

	Sprint Goal Setting	10/06/2024	17/06/2024
	Sprint Backlog Creation	17/06/2024	24/06/2024
	User Story 5, 18, 6, 13, 17	24/06/2024	17/07/2024
	Release the Working Product	17/07/2024	19/07/2024
Sprint 4			
	Sprint Review	19/07/2024	22/07/2024
	Sprint Retrospective	22/07/2024	23/07/2024
	Sprint Planning Meeting	23/07/2024	23/07/2024
	Sprint Goal Setting	23/07/2024	25/07/2024
	Sprint Backlog Creation	25/07/2024	01/08/2024
	User Story 7, 11, 14, 15	01/08/2024	26/08/2024

	Release the Working Product	26/08/2024	28/08/2024
	Sprint Review	28/08/2024	29/08/2024
	Sprint Retrospective	29/08/2024	02/09/2024
Close-out	Handover	02/09/2024	09/09/2024
	User Training	09/09/2024	10/09/2024
	Investor Confirmation and Signature	10/09/2024	11/09/2024
	Project Completion Report	11/09/2024	11/09/2024

9.1.5 Resources

PROJECT TEAM	Phạm Thị Xuân Quỳnh - Product Owner - UI/UX Designer - Software Developer
	Nguyễn Thị Ngọc Quỳnh - Business Analyst - Database Specialist
	Hoàng Ngọc Khoa - Tester
	Đậu Trúc Linh - Database Specialist - Tester - Scrum Master

	Phạm Hồng Ngọc - UI/UX Designer - Software Developer
SUPPORT RESOURCES	Investors, finance and IS-VNU
SPECIAL NEEDS	Finance experts, stakeholders, and ISVNU

9.1.6 Cost

VENDOR	DEVICE/LABOR NAME	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Hardware	Servers (VPS Hosting)	\$100.000	\$100.000	\$100.000	\$100.000	\$100.000	\$500.000
	Networking Equipment						
	- Routers	\$10.000		\$10.000		\$10.000	\$30.000
	- Wifi/Internet	\$50.000	\$50.000	\$50.000	\$50.000	\$50.000	\$250.000
	- Cables/Racks	\$30.000		\$30.000		\$30.000	\$90.000
	Computers/Keyboards/Mouse/CPU/Monitor	\$120.000		\$80.000		\$80.000	\$280.000
	Securities(Firewall Device)	\$80.000		\$50.000		\$50.000	\$180.000
Software	Securities						
	- Antivirus/antimalware software	\$30.000	\$30.000	\$30.000	\$30.000	\$30.000	\$150.000
	-IDS/IPS software	\$20.000	\$20.000	\$20.000	\$20.000	\$20.000	\$100.000
	- VPN	\$20.000	\$20.000	\$20.000	\$20.000	\$20.000	\$100.000
	- Firewall/UTM software	\$30.000	\$30.000	\$30.000	\$30.000	\$30.000	\$150.000
	Development Tools						

	- IDE and Code Editors (VS Code, Sublime Text, Pycharm)	\$50.000	\$50.000	\$50.000	\$50.000	\$50.000	\$250.000
	-Version Control Systems (e.g., GitHub, GitLab)	\$50.000	\$50.000	\$50.000	\$50.000	\$50.000	\$2250.000
	Design Tools						
	- Graphic Design Software (e.g., Adobe Creative Cloud)	\$50.000	\$50.000	\$50.000	\$50.000	\$50.000	\$250.000
	-Prototyping Tools (e.g., Figma, Sketch)	\$50.000	\$50.000	\$50.000	\$50.000	\$50.000	\$250.000
	Other Tools						
	- Power BI, Tableau	\$50.000	\$50.000	\$50.000	\$50.000	\$50.000	\$250.000
	- Jira Software	\$50.000	\$50.000	\$50.000	\$50.000	\$50.000	\$250.000
	- SQL Server	\$50.000	\$50.000	\$50.000	\$50.000	\$50.000	\$250.000
	- Microsoft Office/Windows	\$50.000	\$50.000	\$50.000	\$50.000	\$50.000	\$250.000
Furniture and Fixtures	Conference Tables/Desks/ Chairs	\$100.000			\$100.000		\$200.000
	Lightings/Boards/Cabinets	\$100.000	\$100.000	\$100.000	\$100.000	\$100.000	\$500.000
	Office Supplies (Copy/Scanner/ Printer)	\$100.000			\$100.000		\$200.000
	Location	\$120.000	\$120.000	\$120.000	\$120.000	\$120.000	\$600.000
Project Organizational/Support Costs	Planning project (upon Approval)	\$30.000	\$30.000	\$30.000	\$30.000	\$30.000	\$150.000
	Contract Negotiations	\$30.000	\$30.000	\$30.000	\$30.000	\$30.000	\$150.000
	Meal/Travel/Insurance	\$100.000	\$100.000	\$100.000	\$100.000	\$100.000	\$500.000
	Domain Name	\$20.000	\$20.000	\$20.000	\$20.000	\$20.000	\$100.000

Operating Costs/Other Costs	Documents	\$10.000	\$10.000	\$10.000	\$10.000	\$10.000	\$50.000
	Training Employees	\$100.000	\$100.000	\$100.000	\$100.000	\$100.000	\$500.000
Labor Salaries	Expert consultancy/Third-party service	\$80.000	\$80.000	\$80.000	\$80.000	\$80.000	\$400.000
	Product Owner	\$100.000	\$110.000	\$120.000	\$130.000	\$140.000	\$600.000
	Scrum Master	\$50.000	\$60.000	\$70.000	\$80.000	\$90.000	\$350.000
	Business Analyst	\$40.000	\$50.000	\$60.000	\$70.000	\$80.000	\$300.000
	Tester	\$45.000	\$55.000	\$65.000	\$75.000	\$85.000	\$325.000
	Software Developer	\$100.000	\$110.000	\$120.000	\$130.000	\$140.000	\$600.000
	UI/UX Designer	\$45.000	\$55.000	\$55.000	\$60.500	\$60.500	\$276.000
	Database Specialist	\$40.000	\$40.000	\$40.000	\$40.000	\$40.000	\$200.000
Total							\$9.831.000

9.1.7 Benefits and Customers

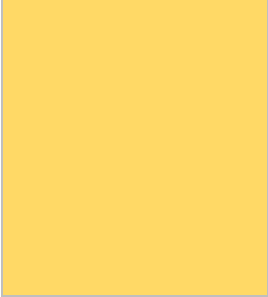
PROCESS OWNER	- Pham Thi Xuan Quynh (project manager), email:21070388@vnu.edu.vn
KEY STAKEHOLDERS	- President and Head Department of VNU-IS, email: thanh.le@isvnu.vn - Library Manager: Ms. Thanh Minh, email: thuvientruongquocite@vnuis.edu.vn - Consultant: Mr Do Tien Thanh, email:dotienthanh@gmail.com.vn
FINAL CUSTOMER	- All students and teachers of International School, VNU.

	- VNU-IS Library Manager
EXPECTED BENEFITS	Improved Accessibility, Enhanced Search and Discovery, Cost Savings, Improved school rankings, Better Decision Making

9.1.8 Risks, constraints, and assumptions

RISKS	<ul style="list-style-type: none"> ● Project Planning <ul style="list-style-type: none"> - Late and unreasonable scheduling - Project documents are completed slowly ● Project Costs <ul style="list-style-type: none"> - Project costs 1 Cost estimates do not match the budget(budget shortfall) ● Determine requirements <ul style="list-style-type: none"> - The customer changes the request during execution <p>present project</p> <ul style="list-style-type: none"> - Incomplete understanding of customer requirements - Customer requirements are too complex. - Conflict between the customer and the development project team <ul style="list-style-type: none"> ● Project quality <ul style="list-style-type: none"> - The system does not perform the required functions correctly bridge - Data processing speed is slow ● Set up <ul style="list-style-type: none"> - The software is not compatible with the system - Code has no problem leading to editing and installation reset many times - Code is slow compared to the project ● Human <ul style="list-style-type: none"> - Project team members are sick, sick...
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	<ul style="list-style-type: none"> - Conflicts between project team members - Professional qualifications and experience of some members are not high ● Technology <ul style="list-style-type: none"> - Choosing inappropriate new technology. - The technology is too new, members are not used to using it ● Process <ul style="list-style-type: none"> - Conflict between components in the system - Many unnecessary features - The product was not completed on time
CONSTRAINTS	<ul style="list-style-type: none"> - The system is designed to comply with regulations that when borrowing and returning books, the employee's consent must be obtained - The system is designed to comply with the regulation that books can only be borrowed within 2 weeks - The system is designed to comply with book regulations. If you lose a book, you will be fined and banned from borrowing the book for 1 month
ASSUMPTIONS	<ul style="list-style-type: none"> - Data Security and Privacy: Assumption that appropriate measures are in place to ensure the security, confidentiality, and integrity of project data and sensitive information. - Team Competency: Assumption that project team members possess the necessary skills, knowledge, and experience to successfully execute their roles and responsibilities. - Stakeholder Involvement: Assumption that stakeholders will actively participate in project activities, provide timely



feedback, and make necessary decisions to support project progress.

9.2 WBS details

9.2.1 WBS in waterfall model:

0.0.Library Management Website

1.0.Project Management

- 1.1. Project Charter
- 1.2. Define project scope
- 1.3. Create project plan
- 1.4. Budget estimation
- 1.5. Resource allocation
- 1.6. Risk management
- 1.7. Process tracking and reporting

2.0. Requirements Gathering

- 2.1. Conduct stakeholder interviews
- 2.2. Define functional requirements
- 2.3. Define non-functional requirements
- 2.4. Report

3.0. Design and Analysis

- 3.1. Data Analysis and Modeling
- 3.2. System Architecture Design
- 3.3. UI & UX design

4.0. Site Software Development

- 4.1. Front-End Development (HTML,CSS,JS)
 - 4.1.1.Homepage
 - 4.1.2. Search functionality
 - 4.1.3. User registration and authentication
 - 4.1.4. Book browsing and details pages

- 4.1.5. User profile management
 - 4.1.6. Borrowing and returning books
 - 4.1.7. Notifications
 - 4.2. Backend Development
 - 4.2.1. Database Implementation (MySQL)
 - 4.2.1.1. Book Catalog and Inventory Management
 - 4.2.1.2. Borrowing and Transaction Data Management
 - 4.2.2. Security Subsystem
 - 5.0. Testing and Production
 - 5.1. Testing
 - 5.2. Bug Fixing (if any)
 - 5.3. Update Website
 - 6.0. Close-out
 - 6.1. Write user manual documents
 - 6.2. Handover
 - 6.3. User training
 - 6.4. Investor Confirmation and Signature
 - 6.5. Project Completion Report
- 9.2.2 WBS in agile model:
- 0.0. Library Management Website
- 1. Initiation:
 - 1.1. Define Project Vision: Create a clear and concise statement outlining the project's goals, target users, and key benefits. This vision guides the project team and aligns efforts with the desired outcomes.
 - 1.1.1. Gather stakeholder input
 - 1.1.2. Draft and refine vision statement
 - 1.1.3. Communicate vision to team
 - 1.2. Identify Stakeholders: Identify all individuals and groups with an interest in the project to understand their needs and influence to ensure effective engagement and management.
 - 1.2.1. List and categorize stakeholders
 - 1.2.2. Analyze their interest and impact
 - 1.2.3. Develop engagement plan

- 1.3. Form Scrum Team: Assemble a team with the necessary skills to work on the project. Define roles and responsibilities, ensuring alignment with agile principles.
 - 1.3.1. Select team members
 - 1.3.2. Define roles and responsibilities
 - 1.3.3. Align team with agile practices
- 1.4. Product Backlog Creation: Develop a prioritized list of all features, enhancements, and fixes required for the project. The Product Backlog is created at the start and continuously updated throughout the project's lifecycle.
 - 1.4.1. Gather requirements from stakeholders
 - 1.4.2. Break down requirements into user stories
 - 1.4.3. Prioritize user stories based on value, risk, and dependencies
 - 1.4.4. Continuously refine and update the backlog as new requirements emerge and priorities change
- 2. Sprint 1 (Implement Basic Functions):
 - 2.1. Sprint Planning:
 - 2.1.1. Sprint Planning Meeting: Conduct a meeting to define how many requirements (from the Product Backlog) will be updated for the upcoming sprint, resulting in the Sprint Backlog. This involves discussing and agreeing on the sprint goals, tasks, and deliverables.
 - 2.1.1.1. Review Product Backlog
 - 2.1.1.2. Select user stories for the sprint
 - 2.1.2. Sprint Goal Setting: Define clear and achievable goals for the sprint that align with the project vision and deliver value to stakeholders. These goals guide the team's efforts throughout the sprint.
 - 2.1.2.1. Collaborate with the team to set sprint objectives
 - 2.1.2.2. Ensure goals are specific, measurable, and time-bound
 - 2.1.2.3. Align goals with user stories and project priorities
 - 2.1.3. Sprint Backlog Creation: Create a detailed list of tasks and user stories that the team will work on during the sprint. The Sprint

Backlog guides the team's activities and progress throughout the sprint.

- 2.1.3.1. Break down user stories into tasks
- 2.1.3.2. Prioritize tasks based on importance and dependencies
- 2.1.3.3. Estimate effort and assign tasks
- 2.1.4. Daily Scrum Meeting: Hold a daily 15-minute meeting to review progress and address any issues. Team members answer three key questions: what was done yesterday, what will be done today, and what obstacles are being faced and how they can be resolved.
 - 2.1.4.1. Each team member reports on their progress
 - 2.1.4.2. Identify and discuss any blockers or issues
 - 2.1.4.3. Plan the day's activities based on team input
- 2.2. Go into Sprint:
 - 2.2.1. User Story #1 Implementation (As a librarian, I want to be able to **add new books** to the library catalog so that the collection is up-to-date and accessible to all members)
 - 2.2.1.1. Implement interface for adding new books
 - 2.2.1.2. Build a database to store book information
 - 2.2.1.3. Implement Adding Functionality
 - 2.2.1.4. Continuous Integration and Testing
 - 2.2.1.4.1. Test Database for Storing Book Information
 - 2.2.1.4.2. Test Adding Functionality
 - 2.2.2. User Story #2 Implementation (As a User, I want to be able to **search** for books by title, author, or category so that I can easily find and borrow the books I need)
 - 2.2.2.1. Implement Homepage
 - 2.2.2.2. Implement Search Functionality (SQL queries to Retrieve Data)
 - 2.2.2.3. Continuous Integration and Testing
 - 2.2.2.3.1. Test Homepage
 - 2.2.2.3.2. Test Search Functionality

- 2.2.3. User Story #3 Implementation (As a user, I want to ***view the library's opening hours and location*** so that I can plan my visit accordingly.)
 - 2.2.3.1. Implement Location Page
 - 2.2.3.2. Retrieve Location Information from Database
 - 2.2.3.3. Display Location Information
 - 2.2.3.4. Continuous Integration and Testing
 - 2.2.3.4.1. Checking that the displayed information matches the actual location and opening hours of the library
 - 2.2.3.4.2. Verifying that the location details are correctly retrieved from the database
- 2.2.4. User Story #16 Implementation (As a user, I want to be able to ***view details about a book***, including its availability status and location within the library, so that I know whether I can borrow it.)
 - 2.2.4.1. Implement Book Details Page
 - 2.2.4.2. Implement SQL queries to Retrieve Book Information
 - 2.2.4.3. Continuous Integration and Testing
 - 2.2.4.3.1. Checking availability status updates in real-time
 - 2.2.4.3.2. Verifying the accuracy of location information
- 2.2.5. User Story #19 Implementation (As a user, I want to be able to ***view my borrowing history***, including past loans and returns, so that I can keep track of the books I have read.)
 - 2.2.5.1. Implement User Profile Page
 - 2.2.5.2. Retrieve Borrowing History from Database
 - 2.2.5.3. Display Borrowing History
 - 2.2.5.4. Continuous Integration and Testing
 - 2.2.5.4.1. Verifying that the borrowing history is correctly retrieved from the database
 - 2.2.5.4.2. Checking that the displayed information matches the user's actual borrowing activity
- 2.3. Release the Working Product: Deploy the completed and tested functionalities of the sprint to the production environment. This ensures

- that the developed features are available to end-users and stakeholders for real-world use.
- 2.3.1. Perform final testing to ensure the product is stable
 - 2.3.2. Deploy the product to the live environment
 - 2.3.3. Notify stakeholders and users about the new release
 - 2.4. Sprint Review: Conduct a meeting to review the work completed during the sprint. This involves demonstrating the new features, gathering feedback from stakeholders, and discussing any discrepancies between planned and actual work.
 - 2.4.1. Demonstrate completed work to stakeholders
 - 2.4.2. Collect feedback on the product increment
 - 2.4.3. Discuss what was accomplished and what was not
 - 2.5. Sprint Retrospective: Hold a meeting to reflect on the sprint process and identify opportunities for improvement. The team discusses what went well, what did not, and how processes can be improved for the next sprint.
 - 2.5.1. Identify areas for process improvement
 - 2.5.2. Update the Product Backlog based on feedback and new insights
3. Sprint 2 (Implement Advanced Functions):
- 3.1. Sprint Planning:
 - 3.1.1. Sprint Planning Meeting: Conduct a meeting to define how many requirements (from the Product Backlog) will be updated for the upcoming sprint, resulting in the Sprint Backlog. This involves discussing and agreeing on the sprint goals, tasks, and deliverables.
 - 3.1.1.1. Review Product Backlog
 - 3.1.1.2. Select user stories for the sprint
 - 3.1.2. Sprint Goal Setting: Define clear and achievable goals for the sprint that align with the project vision and deliver value to stakeholders. These goals guide the team's efforts throughout the sprint.
 - 3.1.2.1. Collaborate with the team to set sprint objectives
 - 3.1.2.2. Ensure goals are specific, measurable, and time-bound
 - 3.1.2.3. Align goals with user stories and project priorities

- 3.1.3. Sprint Backlog Creation: Create a detailed list of tasks and user stories that the team will work on during the sprint. The Sprint Backlog guides the team's activities and progress throughout the sprint.
 - 3.1.3.1. Break down user stories into tasks
 - 3.1.3.2. Prioritize tasks based on importance and dependencies
 - 3.1.3.3. Estimate effort and assign tasks
- 3.1.4. Daily Scrum Meeting: Hold a daily 15-minute meeting to review progress and address any issues. Team members answer three key questions: what was done yesterday, what will be done today, and what obstacles are being faced and how they can be resolved.
 - 3.1.4.1. Each team member reports on their progress
 - 3.1.4.2. Identify and discuss any blockers or issues
 - 3.1.4.3. Plan the day's activities based on team input
- 3.2. Go into Sprint:
 - 3.2.1. User Story #4 Implementation (As a user, I want to *preorder* the wanted books so that I can borrow books without waiting my turn.)
 - 3.2.1.1. Design User Interface
 - 3.2.1.2. Implement Preorder Functionality
 - 3.2.1.3. Implement the logic to handle pre-orders
 - 3.2.1.4. Implement database schema to include a table for tracking preorders
 - 3.2.1.5. Implement User Pre-order Management Functionality
 - 3.2.1.6. Implement a notification system to inform users
 - 3.2.1.7. Continuous Integration and Testing
 - 3.2.1.7.1. Verifying that users can add and remove pre-orders
 - 3.2.1.7.2. Testing the notification system to ensure users are notified promptly
 - 3.2.1.7.3. Checking that pre-ordered books are correctly reserved for users when they become available

- 3.2.2. User Story #8 Implementation (As a user, I want to read *soft copies* of books so that I can immediately access the sources outside of working days.)
 - 3.2.2.1. Design User Interface
 - 3.2.2.2. Implement E-book Access
 - 3.2.2.3. Integrate a repository of e-books to contain digital copies
 - 3.2.2.4. Continuous Integration and Testing
 - 3.2.2.4.1. Verifying that users can browse and search for e-books.
 - 3.2.2.4.2. Testing the e-book reading platform to ensure smooth navigation and functionality.
- 3.2.3. User Story #9 Implementation (As a librarian, I want to *track activities* of members in the system, such as frequently borrowing and blacklisting, so that I can manage the system efficiently, avoiding lost or damaged resources.)
 - 3.2.3.1. Design User Interface
 - 3.2.3.1.1. Create a dashboard for librarians to view member activities
 - 3.2.3.1.2. Design interface to display borrowing history, frequency, and any blacklisting information
 - 3.2.3.2. Implement Activity Tracking
 - 3.2.3.3. Implement Blacklisting Functionality
 - 3.2.3.3.1. Create a mechanism for librarians to blacklist members
 - 3.2.3.3.2. Implement logic to automatically blacklist members
 - 3.2.3.4. Continuous Integration and Testing
 - 3.2.3.4.1. Ensure that activity tracking is accurately recording member actions
 - 3.2.3.4.2. Test blacklisting functionality
- 3.2.4. User Story #10 Implementation (As a librarian, I want to *view and accept requests* to borrow books so that I can track the

progress and allocate the right amount of books between locations.)

3.2.4.1. Design User Interface

3.2.4.1.1. Create a dashboard for librarians to view and manage borrowing requests

3.2.4.1.2. Design interface to display pending borrowing requests

3.2.4.2. Implement Borrowing Request Management

3.2.4.3. Implement Notification Function to inform users about the status of their borrowing requests

3.2.4.4. Continuous Integration and Testing

3.2.4.4.1. Verify that librarians can efficiently view and manage borrowing requests through the provided interface

3.2.4.4.2. Conduct integration tests to ensure smooth interaction between the borrowing request management system and the notification system
Test the notification system to ensure users receive timely updates about their borrowing requests

3.2.5. User Story #12 Implementation (As a librarian, I want to ***track the condition*** of library materials so that I can manage inventory effectively for inventory management purposes.)

3.2.5.1. Design User Interface

3.2.5.1.1. Create a dashboard for librarians to view and manage the condition of library materials

3.2.5.1.2. Design interface to display details of each library material

3.2.5.2. Implement Material Condition Tracking Functionality

3.2.5.3. Implement Damage Reporting Functionality

3.2.5.4. Continuous Integration and Testing

3.2.5.4.1. Verify that librarians can efficiently record and update the condition of library materials through the provided interface

- 3.2.5.4.2. Test the damage reporting system to ensure timely reporting and resolution of issues
- 3.3. Release the Working Product: Deploy the completed and tested functionalities of the sprint to the production environment. This ensures that the developed features are available to end-users and stakeholders for real-world use.
 - 3.3.1. Perform final testing to ensure the product is stable
 - 3.3.2. Deploy the product to the live environment
 - 3.3.3. Notify stakeholders and users about the new release
- 3.4. Sprint Review: Conduct a meeting to review the work completed during the sprint. This involves demonstrating the new features, gathering feedback from stakeholders, and discussing any discrepancies between planned and actual work.
 - 3.4.1. Demonstrate completed work to stakeholders
 - 3.4.2. Collect feedback on the product increment
 - 3.4.3. Discuss what was accomplished and what was not
- 3.5. Sprint Retrospective: Hold a meeting to reflect on the sprint process and identify opportunities for improvement. The team discusses what went well, what did not, and how processes can be improved for the next sprint.
 - 3.5.1. Identify areas for process improvement
 - 3.5.2. Update the Product Backlog based on feedback and new insights
- 4. Sprint 3 (Implement Advanced Functions):
 - 4.1. Sprint Planning:
 - 4.1.1. Sprint Planning Meeting: Conduct a meeting to define how many requirements (from the Product Backlog) will be updated for the upcoming sprint, resulting in the Sprint Backlog. This involves discussing and agreeing on the sprint goals, tasks, and deliverables.
 - 4.1.1.1. Review Product Backlog
 - 4.1.1.2. Select user stories for the sprint
 - 4.1.2. Sprint Goal Setting: Define clear and achievable goals for the sprint that align with the project vision and deliver value to stakeholders. These goals guide the team's efforts throughout the sprint.
 - 4.1.2.1. Collaborate with the team to set sprint objectives

- 4.1.2.2. Ensure goals are specific, measurable, and time-bound
- 4.1.2.3. Align goals with user stories and project priorities
- 4.1.3. Sprint Backlog Creation: Create a detailed list of tasks and user stories that the team will work on during the sprint. The Sprint Backlog guides the team's activities and progress throughout the sprint.
 - 4.1.3.1. Break down user stories into tasks
 - 4.1.3.2. Prioritize tasks based on importance and dependencies
 - 4.1.3.3. Estimate effort and assign tasks
- 4.1.4. Daily Scrum Meeting: Hold a daily 15-minute meeting to review progress and address any issues. Team members answer three key questions: what was done yesterday, what will be done today, and what obstacles are being faced and how they can be resolved.
 - 4.1.4.1. Each team member reports on their progress
 - 4.1.4.2. Identify and discuss any blockers or issues
 - 4.1.4.3. Plan the day's activities based on team input
- 4.2. Go into Sprint:
 - 4.2.1. User Story #5 & #18 Implementation (As a librarian, I want to ***notify members about overdue books and fines*** so that I can encourage timely returns and ensure fair use of library materials; As a user, I want to receive notifications when my borrowed books are due soon or overdue so that I can return them on time and avoid late fees)
 - 4.2.1.1. Design User Interface
 - 4.2.1.2. Implement Overdue Book Detection Functionality
 - 4.2.1.3. Implement functionality to calculate fines for each overdue book
 - 4.2.1.3.1. Define a fine calculation algorithm based on the library's fine policy (e.g., per day, per item)
 - 4.2.1.4. Implement Notification Function to send reminders to members about their overdue books and associated fines
 - 4.2.1.5. Integrate a payment system to allow members to pay fines online or at the library

- 4.2.1.6. Continuous Integration and Testing
 - 4.2.1.6.1. Verify that the system accurately detects overdue books and calculates fines according to the defined policy.
 - 4.2.1.6.2. Test the notification function to ensure timely reminders are sent to members about their overdue books and fines.
 - 4.2.1.6.3. Test the fine payment function to ensure members can easily pay fines and update their accounts accordingly
- 4.2.2. User Story #6 Implementation (As a librarian, I want to **generate reports** on book borrowing trends and member activities so that I can make informed decisions about library resources and services.)
 - 4.2.2.1. Design User Interface
 - 4.2.2.2. Implement Report Generation Functionality
 - 4.2.2.2.1. Develop functionality to generate reports on book borrowing trends, including:
 - 4.2.2.2.2. Implement functionality to generate reports on member activities
 - 4.2.2.3. Implement export & visualization tools
 - 4.2.2.4. Continuous Integration and Testing
 - 4.2.2.4.1. Verify that the system accurately generates reports on book borrowing trends and member activities based on specified criteria
 - 4.2.2.4.2. Test the export and visualization features to ensure report data can be easily accessed, analyzed, and shared
- 4.2.3. User Story #13 Implementation (As a user, I want to **rate and review** books I've read so that I can help other users make informed reading choices.)
 - 4.2.3.1. Design User Interface
 - 4.2.3.2. Implement Rating Functionality

- 4.2.3.2.1. Develop functionality for users to rate books on a scale (1 to 5 stars)
- 4.2.3.2.2. Implement validation to ensure users can only rate books once
- 4.2.3.3. Implement Review Submission
 - 4.2.3.3.1. Develop functionality for users to write and submit reviews for books they have read
 - 4.2.3.3.2. Implement validation to ensure reviews meet certain criteria (e.g., minimum length, appropriate content)
- 4.2.3.4. Display Ratings and Reviews
- 4.2.3.5. Community Interaction
 - 4.2.3.5.1. Enable users to like or upvote reviews they find helpful
 - 4.2.3.5.2. Implement features for users to comment on reviews and engage in discussions
- 4.2.3.6. Continuous Integration and Testing
 - 4.2.3.6.1. Verify that users can rate and review books seamlessly through the provided interface
 - 4.2.3.6.2. Conduct usability tests to ensure the rating and review features are intuitive and user-friendly
- 4.2.4. User Story #17 Implementation (As a user, I want to be able to ***renew my borrowed books online*** so that I can extend my borrowing period if needed.)
 - 4.2.4.1. Design User Interface
 - 4.2.4.1.1. Design interface for users to renew their borrowed books online
 - 4.2.4.1.2. Design a dashboard within the user account where users can view their borrowed books and renew them.
 - 4.2.4.2. Implement Renewal Functionality
 - 4.2.4.3. Renewal Limits and Notifications

- 4.2.4.3.1. Implement notifications to inform users when their renewals are approaching the limit or if a book cannot be renewed.
 - 4.2.4.4. Continuous Integration and Testing
 - 4.2.4.4.1. Test that users can easily navigate the renewal interface and select books for renewal.
 - 4.2.4.4.2. Test the renewal functionality to ensure it accurately checks eligibility and updates due dates.
 - 4.2.4.4.3. Test the notification function to ensure users receive timely updates about their renewal status and any relevant restrictions
- 4.3. Release the Working Product: Deploy the completed and tested functionalities of the sprint to the production environment. This ensures that the developed features are available to end-users and stakeholders for real-world use.
 - 4.3.1. Perform final testing to ensure the product is stable
 - 4.3.2. Deploy the product to the live environment
 - 4.3.3. Notify stakeholders and users about the new release
- 4.4. Sprint Review: Conduct a meeting to review the work completed during the sprint. This involves demonstrating the new features, gathering feedback from stakeholders, and discussing any discrepancies between planned and actual work.
 - 4.4.1. Demonstrate completed work to stakeholders
 - 4.4.2. Collect feedback on the product increment
 - 4.4.3. Discuss what was accomplished and what was not
- 4.5. Sprint Retrospective: Hold a meeting to reflect on the sprint process and identify opportunities for improvement. The team discusses what went well, what did not, and how processes can be improved for the next sprint.
 - 4.5.1. Identify areas for process improvement
 - 4.5.2. Update the Product Backlog based on feedback and new insights
- 5. Sprint 4 (Update Security & User Experiment) :
 - 5.1. Sprint Planning:
 - 5.1.1. Sprint Planning Meeting: Conduct a meeting to define how many requirements (from the Product Backlog) will be updated

for the upcoming sprint, resulting in the Sprint Backlog. This involves discussing and agreeing on the sprint goals, tasks, and deliverables.

5.1.1.1. Review Product Backlog

5.1.1.2. Select user stories for the sprint

5.1.2. Sprint Goal Setting: Define clear and achievable goals for the sprint that align with the project vision and deliver value to stakeholders. These goals guide the team's efforts throughout the sprint.

5.1.2.1. Collaborate with the team to set sprint objectives

5.1.2.2. Ensure goals are specific, measurable, and time-bound

5.1.2.3. Align goals with user stories and project priorities

5.1.3. Sprint Backlog Creation: Create a detailed list of tasks and user stories that the team will work on during the sprint. The Sprint Backlog guides the team's activities and progress throughout the sprint.

5.1.3.1. Break down user stories into tasks

5.1.3.2. Prioritize tasks based on importance and dependencies

5.1.3.3. Estimate effort and assign tasks

5.1.4. Daily Scrum Meeting: Hold a daily 15-minute meeting to review progress and address any issues. Team members answer three key questions: what was done yesterday, what will be done today, and what obstacles are being faced and how they can be resolved.

5.1.4.1. Each team member reports on their progress

5.1.4.2. Identify and discuss any blockers or issues

5.1.4.3. Plan the day's activities based on team input

5.2. Go into Sprint:

5.2.1. User Story #7 Implementation (As a user, I want to have my *information secured* so that I can be confident while using the system.)

5.2.1.1. User Authentication

5.2.1.1.1. Implement secure user authentication mechanisms

- 5.2.1.1.2. Provide options for users to enable two-factor authentication for added security
- 5.2.1.1.3. Ensure password policies enforce strong passwords and regular password changes
- 5.2.1.2. Data Encryption
 - 5.2.1.2.1. Encrypt sensitive user information stored in the database, such as passwords, personal details, and financial transactions
- 5.2.1.3. Regular Security Audits
 - 5.2.1.3.1. Conduct regular security audits and vulnerability assessments to identify and mitigate potential security risks
- 5.2.1.4. User Privacy
 - 5.2.1.4.1. Provide users with options to control their privacy settings and manage their consent preferences
 - 5.2.1.4.2. Clearly communicate the system's privacy policy to users, outlining how their personal information is collected, used, and protected
- 5.2.2. User Story #11 Implementation (As a user, I want the library management system to have a varied ***responsive layout of user interface*** so that I can easily navigate through the system and perform tasks efficiently, regardless of the device I use.)
 - 5.2.2.1. Design the user interface using responsive web design principles
 - 5.2.2.2. Design and functionality for mobile devices
 - 5.2.2.3. Maintain consistency in design elements, branding, and navigation patterns across all devices
 - 5.2.2.4. Design flexible content layouts that can adapt to different screen sizes and orientations
- 5.2.3. User Story #14 Implementation (As a librarian, I want the system to be able to ***handle a high volume of users during peak hours***, such as after school or weekends, so that members don't experience delays when borrowing or returning books.)

- 5.2.3.1. Conduct thorough load testing to identify potential bottlenecks and performance issues under high user traffic conditions
- 5.2.3.2. Simulate peak hour scenarios to determine the system's capacity and scalability requirements
- 5.2.3.3. Implement robust monitoring and alerting systems to track key performance metrics, system health, and resource utilization in real-time
- 5.2.4. User Story #15 Implementation (As a librarian, I want the library management system to prioritize data security so that user information remains confidential and protected against unauthorized access.)
 - 5.2.4.1. Access Control
 - 5.2.4.1.1. Implement role-based access control (RBAC) to restrict access to sensitive data and features based on user roles and permissions
 - 5.2.4.1.2. Enforce the principle of least privilege, granting users access only to the data and functionalities necessary for their roles
 - 5.2.4.2. Data Backup and Disaster Recovery
 - 5.2.4.2.1. Implement regular data backups and offsite storage to ensure data availability and integrity in the event of data loss or system failures
 - 5.2.4.2.2. Develop and test a robust disaster recovery plan to minimize downtime and data loss in the event of a security breach or catastrophic event
- 5.3. Release the Working Product: Deploy the completed and tested functionalities of the sprint to the production environment. This ensures that the developed features are available to end-users and stakeholders for real-world use.
 - 5.3.1. Perform final testing to ensure the product is stable
 - 5.3.2. Deploy the product to the live environment
 - 5.3.3. Notify stakeholders and users about the new release
- 5.4. Sprint Review: Conduct a meeting to review the work completed during the sprint. This involves demonstrating the new features,

- gathering feedback from stakeholders, and discussing any discrepancies between planned and actual work.
- 5.4.1. Demonstrate completed work to stakeholders
- 5.4.2. Collect feedback on the product increment
- 5.4.3. Discuss what was accomplished and what was not
- 5.5. Sprint Retrospective: Hold a meeting to reflect on the sprint process and identify opportunities for improvement. The team discusses what went well, what did not, and how processes can be improved for the next sprint.
 - 5.5.1. Identify areas for process improvement
 - 5.5.2. Update the Product Backlog based on feedback and new insights
- 6. Close-out
 - 6.1. Handover: Transition the project deliverables and knowledge to the appropriate stakeholders.
 - 6.1.1. Document project deliverables, including code, documentation, and any relevant assets
 - 6.1.2. Conduct knowledge transfer sessions with the receiving team
 - 6.1.3. Confirm successful handover and resolve any outstanding issues
 - 6.2. User training: Provide training sessions for end-users to familiarize them with the new system or features. This ensures that users can effectively utilize the product and maximize its benefits.
 - 6.2.1. Develop training materials, such as manuals, guides, or videos
 - 6.2.2. Schedule and conduct training sessions for different user groups
 - 6.2.3. Provide hands-on exercises and demonstrations
 - 6.2.4. Gather feedback and address any user concerns or questions
 - 6.3. Investor Confirmation and Signature: Obtain formal confirmation and signatures from investors or project sponsors to officially acknowledge project completion and sign off on deliverables. This ensures that all parties are in agreement regarding the project's outcomes and closure.
 - 6.3.1. Review project objectives and outcomes
 - 6.3.2. Obtain confirmation and signatures on relevant documents, such as acceptance criteria or project closure reports
 - 6.3.3. Address any outstanding concerns or questions from investors
 - 6.4. Project Completion Report: Prepare a comprehensive report summarizing the project's objectives, activities, outcomes, and lessons

learned. This report serves as a record of the project's journey and provides valuable insights for future projects.

- 6.4.1. Compile project documentation, including plans, reports, and assessments
- 6.4.2. Summarize project achievements, challenges, and outcomes
- 6.4.3. Document lessons learned and recommendations for future projects

9.3 Meeting minutes (additional)

9.3.1 Meeting Minutes 4

Table 9-1: Meeting Minutes 4

VNU-IS Library Management Project Team Meeting			
MINUTES	02/29/2024	21:00 PM	Google Meet
MEETING CALLED BY	Team		
ATTENDEES	Khoa HOANG, Linh DAU, Ngoc PHAM, Quynh NGUYEN, Quynh PHAM		
ABSENTEES	None		
MINUTES	Ngoc PHAM		
Agenda topics			
60 MIN	TOPIC RECALLING & USER STORIES AND WBS		
DISCUSSION			
Settling down with project idea			
Discussion for member’s knowledge about chosen topic			
Early-stage discussion of basic user stories for end users			
Early-stage discussion of work breakdown structure for project			
CONCLUSIONS			
Topic confirmation and already came up with basic user stories needed to ensure the flow of project			
More advanced functions development, prioritizes logic flow in work breakdown structure			
ACTION ITEMS		PERSON RESPONSIBLE	DEADLINE

VNU-IS Library Management Project Team Meeting		
Topic Refinement	All members	02/29/2024
Write user stories	Ngoc PHAM, Quynh Nguyen, Khoa HOANG	03/04/2024
Draw WBS	Linh DAU, Quynh PHAM	03/04/2024
Regularly quality control task	Quynh PHAM	03/16/2024

GENERAL NOTES	Mobile details: <ul style="list-style-type: none"> • Khoa PHAM • Linh DAU • Ngoc PHAM • Quynh NGUYEN • Quynh PHAM
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9.3.2 Meeting Minutes 5

Table 9-2: Meeting Minutes 5

VNU-IS Library Management Project Team Meeting			
MINUTES	02/29/2024	21:00 PM	Google Meet
MEETING CALLED BY	Team		
ATTENDEES	Quynh PHAM, Linh DAU, Ngoc PHAM, Quynh NGUYEN, Khoa HOANG		
ABSENTEES	none		
MINUTES	Quynh NGUYEN		
Agenda topics			
90 MIN	GANTT CHART USING JIRA		
DISCUSSION			
Preparation and Planning			
The meeting began with an overview of the library management project, following Work Breakdown Structure . We Configure the plugin settings according to our project			

VNU-IS Library Management Project Team Meeting		
<p>requirements. Customize the Gantt chart layout, including task colors, timelines, and dependencies. Set up user permissions to ensure only authorized team members can modify the Gantt chart.</p> <p>Development of Gantt Chart</p> <p>We break down your project into smaller tasks or issues within Jira. Assign start and end dates to each task. Define task dependencies to reflect the sequence of activities. Assign team members to specific tasks. Ensure balanced workload distribution to prevent overburdening any individual.</p>		
CONCLUSIONS		
Confirmation of the next meeting date to review the Gantt Chart		
ACTION ITEMS	PERSON RESPONSIBLE	DEADLINE
Complete Initiation	All members	03/04/2024
Complete Sprint 1	Linh DAU	03/04/2024
Complete Sprint 2	Quynh PHAM	03/04/2024
Complete Sprint 3	Quynh NGUYEN	03/04/2024
Complete Sprint 3	Khoa HOANG	03/04/2024
Complete Close-out	All members	03/04/2024

9.4 Actual Communication (additional)

9.4.1 Actual Communication for Sprint 3

Ceremony	Time/Duration	Location	Participants	Note
Start sprint	Monday 6/8/2024	- Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN	

Ceremony	Time/Duration	Location	Participants	Note
			Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
End sprint	Monday – 7/22/2024	Offline: 1 Trinh Van Bo, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Sprint duration	47 days			
Planning Meeting	Monday– 6/10/2024 (Start day) Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN	

Ceremony		Time/Duration	Location	Participants	Note
				<p>Tester: Khoa HOANG</p> <p>Software Developer: Ngoc PHAM, Quynh PHAM</p> <p>UI/UX Designer: Ngoc PHAM</p>	
Sprint Setting	Goal	<p>Monday – 6/10/2024</p> <p>Evening: 21:00 PM – 23:00 PM</p>	<p>Online through Google Meet</p>	<p>Project Owner: Quynh PHAM</p> <p>Scrum Master: Linh DAU</p> <p>BA: Quynh NGUYEN</p> <p>Tester: Khoa HOANG</p> <p>Software Developer: Ngoc PHAM, Quynh PHAM</p> <p>UI/UX Designer: Ngoc PHAM</p>	
Product Backlog Creation		Tuesday– 6/12/2024			Gathered customer requirements, no

Ceremony	Time/Duration	Location	Participants	Note
	Evening: 21:00 PM – 23:00 PM			view on the product backlog.
Meeting I (User story 5 & 18)	Monday – 6/18/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Meeting II (User story 6)	Friday – 6/25/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM	

Ceremony	Time/Duration	Location	Participants	Note
			UI/UX Designer: Ngoc PHAM	
Meeting III (User story 13)	Friday – 7/2/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Meeting IV (User story 17)	Wednesday- – 7/9/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM	

Ceremony	Time/Duration	Location	Participants	Note
			UI/UX Designer: Ngoc PHAM	
Meeting V (User story 12)	Monday- 3/25/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Release the Working Product	Monday- 7/16/2024 Evening: 21:00 PM – 23:00 PM		Product Owner: Quynh PHAM	
Sprint Review meeting	Monday 7/18/2024 Afternoon: 14:00 PM – 17:00 PM	1 st Trinh Van Bo St., Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG	Review all the requirements for the first sprint and confirm the workload as well as the timeline

Ceremony	Time/Duration	Location	Participants	Note
			Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Retrospective meeting	Wednesday – 7/22/2024 The day before the next sprint start Afternoon 14:00PM – 16:00PM	1 st Trinh Van Bo St, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	

9.4.2 Actual Communication for Sprint 4

Ceremony	Time/Duration	Location	Participants	Note
Start sprint	Monday - 7/23/2024	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN	

Ceremony	Time/Duration	Location	Participants	Note
			Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
End sprint	Monday – 8/29/2024	Offline: 1 Trinh Van Bo, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Sprint duration	47 days			
Planning Meeting	Monday– 7/23/2024 (Start day) Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN	

Ceremony		Time/Duration	Location	Participants	Note
				<p>Tester: Khoa HOANG</p> <p>Software Developer: Ngoc PHAM, Quynh PHAM</p> <p>UI/UX Designer: Ngoc PHAM</p>	
Sprint Setting	Goal	Monday – 7/23/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	<p>Project Owner: Quynh PHAM</p> <p>Scrum Master: Linh DAU</p> <p>BA: Quynh NGUYEN</p> <p>Tester: Khoa HOANG</p> <p>Software Developer: Ngoc PHAM, Quynh PHAM</p> <p>UI/UX Designer: Ngoc PHAM</p>	
Product Creation	Backlog	Tuesday – 7/24/2024			Gathered customer requirements, no

Ceremony	Time/Duration	Location	Participants	Note
	Evening: 21:00 PM – 23:00 PM			view on the product backlog.
Meeting I (User story 7)	Monday – 7/26/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Meeting II (User story 11)	Friday – 8/2/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM	

Ceremony	Time/Duration	Location	Participants	Note
			UI/UX Designer: Ngoc PHAM	
Meeting III (User story 14)	Friday – 8/9/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Meeting IV (User story 15)	Wednesday- 8/16/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM	

Ceremony	Time/Duration	Location	Participants	Note
			UI/UX Designer: Ngoc PHAM	
Release the Working Product	Friday- 8/23/2024 Evening: 21:00 PM – 23:00 PM		Product Owner: Quynh PHAM	
Sprint Review meeting	Monday 8/27/2024 Afternoon: 14:00 PM – 17:00 PM	1 st Trinh Van Bo St., Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	Review all the requirements for the first sprint and confirm the workload as well as the timeline
Retrospective meeting	Wednesday 8/29/2024 The day before the next sprint start Afternoon 14:00 PM – 16:00 PM	1 st Trinh Van Bo St, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG	

Ceremony	Time/Duration	Location	Participants	Note
			Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	

9.4.3 Actual Communication for Sprint Close-out

Ceremony	Time/Duration	Location	Participants	Note
Start sprint	Monday 8/30/2024	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
End sprint	Monday – 9/11/2024	Offline: 1 Trinh Van Bo, Hanoi	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG	

Ceremony	Time/Duration	Location	Participants	Note
			Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Sprint duration	13 days			
Handover	Friday– 8/30/2024 (Start day) Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Khoa HOANG	
User Training	Tuesday – 9/3/2024 Evening: 21:00 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	
Investor Confirmation and Signature	Tuesday– 9/10/2024 Evening: 21:00 PM – 23:00 PM		Project Owner: Quynh PHAM Scrum Master: Khoa HOANG	

Ceremony	Time/Duration	Location	Participants	Note
Project Completion Report	Wednesday – 9/11/2024 Evening: 20:30 PM – 23:00 PM	Online through Google Meet	Project Owner: Quynh PHAM Scrum Master: Linh DAU BA: Quynh NGUYEN Tester: Khoa HOANG Software Developer: Ngoc PHAM, Quynh PHAM UI/UX Designer: Ngoc PHAM	