LOST AND FOUND MANAGEMENT SYSTEM FOR THE UNIVERSITY OF SOUTHERN MINDANAO KABACAN CAMPUS

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Capstone Project Outline Submitted to the Department of Computing and Library Information System, College of Engineering and Information Technology, University of Southern Mindanao, Kabacan, Cotabato, in Partial Fulfilment of the Requirements for the Degree of

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

MAY 2025

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INTRODUCTION

Background of the Project

A university is a place where students, faculty, staff, and non-students gather daily, bringing their personal belongings with them. Things such as books, pens, bags, gadgets, and other items can be seen a lot on school grounds. Thus, it is common to misplace or lose some of them. Oftentimes, the lost items never return to their rightful owner or remain unclaimed for extended periods of time. The University of Southern Mindanao Kabacan Campus is no exception to this problem; students also frequently lose personal belongings within the campus every day.

Given this situation, the researchers propose to develop a Lost and Found Management System to use inside the University that will be stationed at the Office of Student Affairs (OSA). The system aims to provide a system where lost items can be reported, found items can be listed, and the claim process can be properly managed. This system aims to address the issue based on observations that most current methods to handle lost and found cases within the university rely heavily on social media, which often leads to items not being returned. The social media methods are also prone to delays and lack a proper step-by-step and safe process for claiming the item. This issue affects the students' chances of getting their items back. The plan to station the Lost and Found System at the OSA hopes to terminate all these lapses, especially ensuring the safety of the students in the university. To ensure data safety, the system will utilize an admin system where a faculty or staff member from OSA can manage it, giving them the authority to edit/delete data and confirm claim requests.

Furthermore, through gathering information and observing the current practices at the university with regard to this issue, the researchers noted a significant number of challenges in managing the lost and found cases. These include difficulties in tracking reports, verifying claims, and communicating updates to students. Thus, the proposed system intends to fix these issues by improving the overall management of lost and

found items and increasing the retrieval rate of the lost items within the University of Southern Mindanao Kabacan Campus.

Conceptual Framework

Figure 1 illustrates the flow of the project. The inputs show the system requirements, where the user is only the administrator of the system. The user must input their verified email and password to log in to the system as an admin. Afterwards, the user can input the reports of the students, faculty, staff, and non-students with the corresponding information of the lost or found item. Moreover, the user processes the workflow of the system by adding, searching, filtering, and updating the status of the lost and found items reported by the students, staff, faculty, and non-students. The output of the system will be the Lost and Found management system for the University of Southern Mindanao, Kabacan Campus. This system will serve as a centralized platform for reporting lost and found items within the campus.

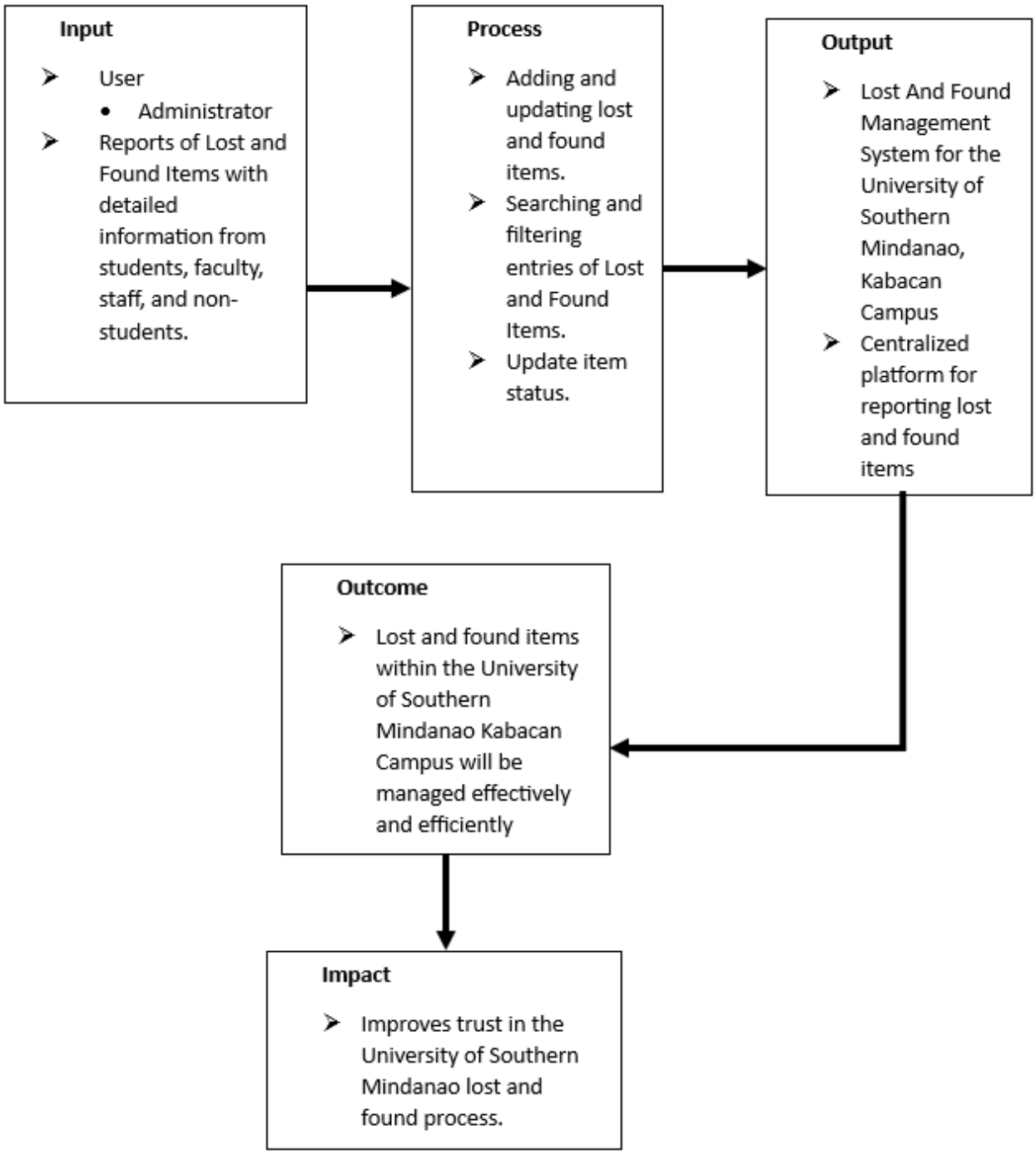


Fig.1. Conceptual framework of Lost and Found Management System for the University of Southern Mindanao, Kabacan Campus.

Requirement Specification

Lost and Found Management system for the University of Southern Mindanao, Kabacan Campus Requirement specification. This part was the document for the functions of the project and features of the project.

Functions of the Project

1. Log In

Description: The system provides the functionality for administrators to log in.

- Input: Enter Username and Password
- Processing: The system will validate the username and password. If correct, the user can log in. Otherwise, the user will re-enter the username and password.
- Output: Administrator Dashboard.

2. Registration

Description: The administrator needs to register with the system and provide personal information, including their email or password.

- Input: Enter Personal information
- Process: The administrator's information will be added to the system database and used to log in.
- Output: Admin Record

3. Add Lost Item

Description: The User can add a Lost item by providing its details.

- Input: Enter the Item name, location, and other details needed.
- Process: The system will store the information in the database, specifically on the lost item table
- Output: Display it on the lost item section.

4. Add Found Item

Description: The User can add a Found item by providing its details.

- Input: Enter the found item name, location, and other details needed.
- Process: The system will store the information in the database, specifically in the found items.
- Output: Display it on the lost or found item section.

5. Search Items

Description: Allow the user to search for lost and found items

- Input: Enter the keywords
- Process: Filters the item based on search criteria.
- Output: Display the matching searched item.

6. Claim of item

Description: Allowing the user to request claiming a found item.

- Input: Enter Student ID or Name
- Process: The system records the claim request and status to pending for approval, and the admin will review the request.
- Output: Item Status set as pending

7. Approve/Reject the claim item

Description: The Administrator will review all those items that need to be approved or rejected.

- Input: Select the view of all requests for approval and choose accept or reject.
- Process: The system will update the status of the found items once approved or rejected, and remove the item from the pending list.

- Output: Dashboard counter and item status updates.

8. Manage Item Record

Description: Admin can edit, delete, and update records of the lost or found items as needed.

- Input: Selection of items and choosing what to modify
- Processing: Save changes to the database.
- Output: Updated item status.

9. Notification System

Description: Send a notification to the user via email about the item status and updates.

- Input: Triggered when the admin approves the claim for the item
- Process: Sends an email to the owner that the item has been found
- Output: User receives notification.

10. View item details

Description: Any user can view the detailed information about an item.

- Input: Selection of an item.
- Process: Retrieve the selected items' records from the database.
- Output: Display item Description, status, and attached image.

11. Mark Item as Found

Description: The user can mark a lost item as found, and this will trigger a process that will notify the owner via email.

- Input: Enter Student ID or Name
- Process: The System will accept the input and wait for a few seconds to notify the owner that the item is found.

- Output: Item status updated once verified.

Features of the Project

The following are the features of the Lost and Found Management System for the University of Southern Mindanao, Kabacan Campus.

Admin Login/Logout System

The system will have a secure login area for administrators. Administrators who didn't sign up cannot access the administrative dashboard. So, only those with the right key can access the information. Also, they can securely log out.

Admin Dashboard

In this Admin dashboard, the admin can view the total number of lost items and found items, for approval of found items, wherein they can also view all the requests for approval of found items.

Report Lost and Found Items

The user can add complete information in the form of a lost item or found item, including its name, a description, the place where it was last seen, the time and date of loss, and a possible picture.

View all Lost or Found Items

The user can view all lost items in the lost section page and all found items on the found section page

Item Search and Filter

Searching for lost or found items will be simple, as users can use filters to sort by category, date discovered, and place.

Claim request and approval

The user can request the claim of the found item by filling up the form. Admins will approve the request.

Notifications and Alerts

The owner will be notified by email if their items are found.

View all Request for approval

A page where the admin can manage and track all requests that need to be approved.

User Role Management

There will be only two distinct user groups. Students, faculty, and staff can both upload, view, and search lost and found items. The OSA administrator can view reports, handle claims, and update item status.

METHODOLOGY

Research Design

The research approach for this study combines description and development. In the descriptive part, the researchers aim to clarify and assess the present methods and problems faced in managing the lost and found items at the University of Southern Mindanao. This research involves structuring, coding, and reviewing the Lost and Found Management System created to meet the requirements of the university. By merging these designs, the researchers can both understand the present challenges and design a solution that specifically handles the issues identified at the beginning.

Research Participants and Materials

The participants in this study are students, faculty, staff, and nonstudents of the University of Southern Mindanao, who represent the potential users of the Lost and Found Management System, together with OSA staff, who will manage the system as the primary administrators. The system was developed and evaluated utilizing web technologies including HTML, CSS, and JavaScript on the user interface side, alongside Python Flask for the backend, and MS SQL Server for database handling. Also, developers will use personal computers and laptops to design and test the system, and questionnaires will be circulated to get user feedback.

Data Collection

The data of this study will be collected throughout two phases. In preparation for system development, data will be collected through an online survey by asking closed-ended questions about the current problem related to the missing and found items within the University of Southern Mindanao, Kabacan Campus. After system development is completed, user evaluation forms and questionnaires will be employed to examine the system's usability, functionality, and effectiveness. Those who use the system will be invited to give their opinions about it.

Data Analysis

All collected data will be assessed by employing qualitative and quantitative analysis. Interviews and open-ended questionnaire responses will be interpreted qualitatively to generate insights useful for making design improvements and changes to the system. Also, quantitative analysis will consist of computational analysis of the closed-ended questions in the questionnaire with a Likert scale, to determine specific user evaluations of the system's acceptability, functionality, usability, and effectiveness.

Validity

The expert validation of evaluation tools, such as the questionnaire, is carried out to support the validity of both the instruments and the findings of the study. Experts from the faculty with expertise in both system development and research will check the instrument to confirm it is fit for purpose, easy to understand, and consistent with the study objectives. Following a pilot administration of the questionnaire to a small user

group, modifications will be made in response to their input. Employing this method guarantees that the data represents system users' experiences and perceptions reliably and validly.

Ethical Considerations

The study will be carried out in accordance with recognized ethical principles in research on people. Every participant will learn the study's intent, and they will have complete choice in whether to participate. Written permission to participate will be requested prior to any interviews or questionnaire distribution. Participants will be fully assured that their responses will remain confidential and anonymous, with all data only being used for research and system review objectives. All personal information will remain confidential, and analyses of the results will not link results to any individual. Compliance with the ethical standards established by the University of Southern Mindanao is assured through the researchers' actions.

Waterfall Model

From the Iterative and Incremental Waterfall Model, it is revealed that the system will be using the SDLC model for the Lost and Found Management system for the University of Southern Mindanao – Kabacan Campus. This model is very appropriate to the project since it directs a systematic and step-by-step development process. It enables the researchers to concentrate on each phase at a time, from finding out the current system issues to end-to-end acceptance of the proposed system. This approach provides clarity, organization, and better control during the development process.

The phases of the Waterfall Model are:

Problem Identification – Identifying the existing troubles with the manual lost and found processes in the university, mainly through observations and gatherings from the Office of Student Affairs (OSA) and students.

Planning System – Establishing the system objectives, defining the scope and scheduling, allocation of resources and tools to be used in the development.

Requirements Analysis – Gathering sufficient and thorough information from the stakeholders (students, faculty, staff, driver, and OSA) about what features and functions the system should possess.

System Design – arranging the architecture, user interface, and database design of the Lost and Found System.

Coding – It is building the system using web technologies (HTML, CSS, JavaScript), Python Flask, and MS SQL Server.

Development – combining components and defining important functionalities like the reporting, searching, status changes, and claims processing.

Testing – Carrying out rigorous user testing to measure usability, functionality, and performance. Evaluation forms are also administered to get feedback.

Acceptance – Putting the system to the final deployment at the OSA and collecting the final feedback for approval and use.

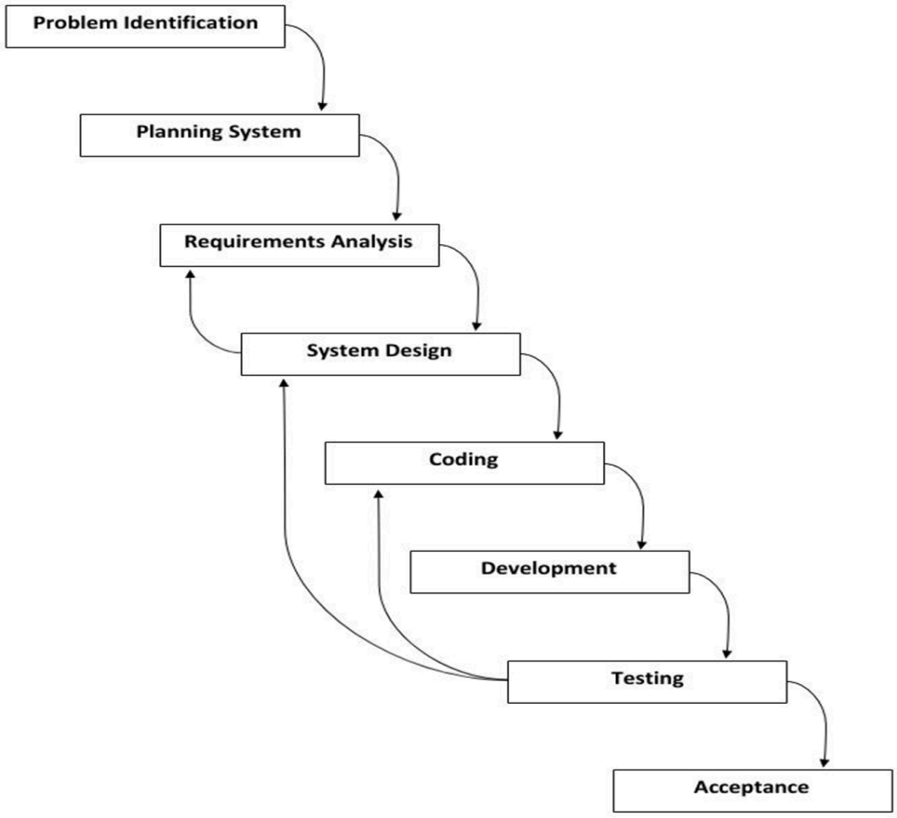


Fig. 2. Waterfall Model of Lost and Found Management System for the University of Southern Mindanao, Kabacan Campus.

Use Case Diagram

The Use Case Diagram for the Lost and Found Management System at the University of Southern Mindanao can be seen in Figure 3. It demonstrates how systems and their users—administrators, students, faculty, staff, and non-students—are joined by different interactions. An administrator can register, log in, view every lost and found item on the website, search for single items, approve or reject retrievals, and make changes to or delete entries. Furthermore, the administrator can monitor and log out of the system. At the same time, students, faculty, and non-students can create lost and found entries, view every reported item, look for specific things, mark their finds as recovered, and request to get their property back. The diagram outlines the main system functions and the roles each user in the system will have.

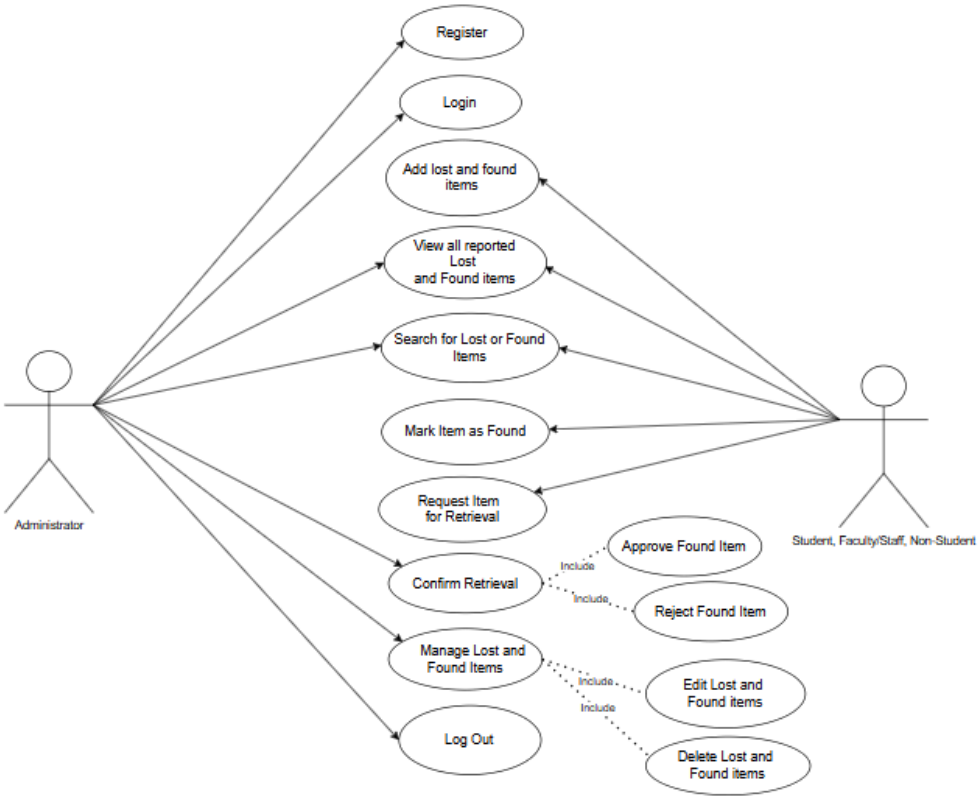


Fig. 3. Use Case Diagram of Lost and Found Management System for the University of Southern Mindanao, Kabacan Campus.

Activity Diagram

The following figures show users' activity, where the admin is required to log in and register. All users can view and search lost and found items. The admin or OSA in charge has their page where they can manage the records of lost and found items, update the status, edit or delete items, and approve all requests. On the other hand, the student, faculty, staff, and non-students can add lost and found items, mark lost items as found, and request retrieval of found items.

Figure 4 shows the activity diagram for logging into a system. It models the actions that users will perform in the system to enter the system.

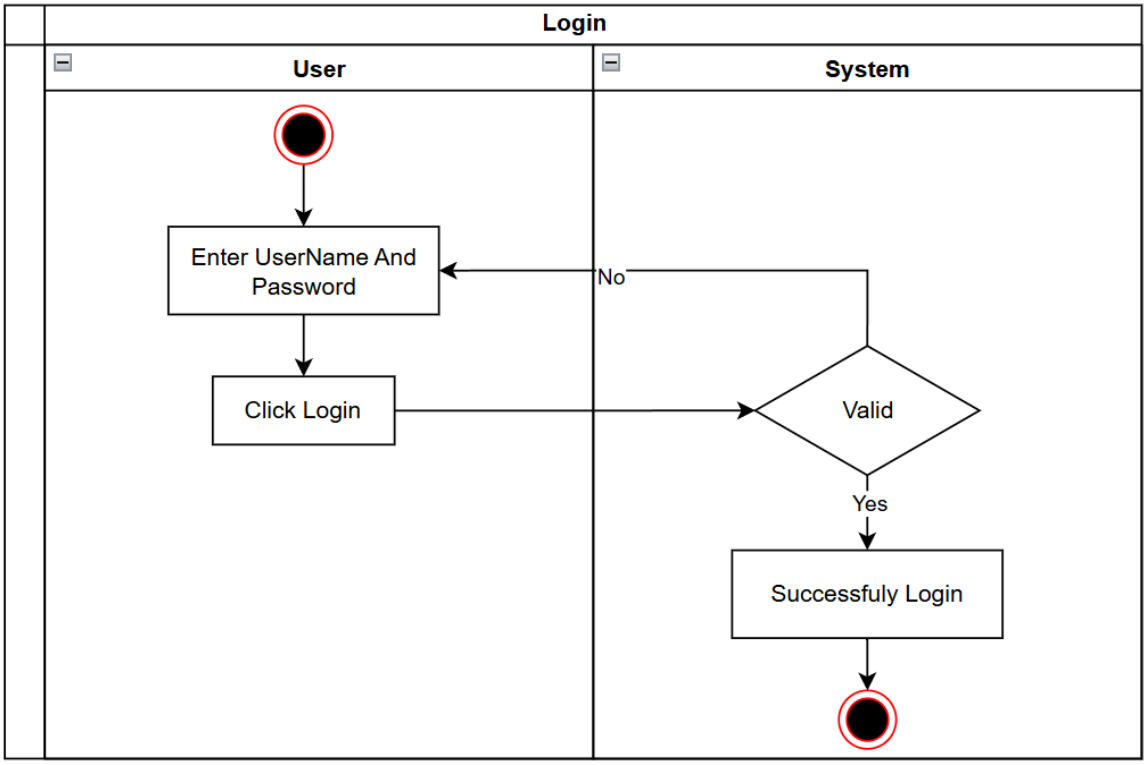


Fig. 4. Login activity.

Figure 5 shows the activity diagram for registration, where the administrators need to fill up the form to sign up for the system.

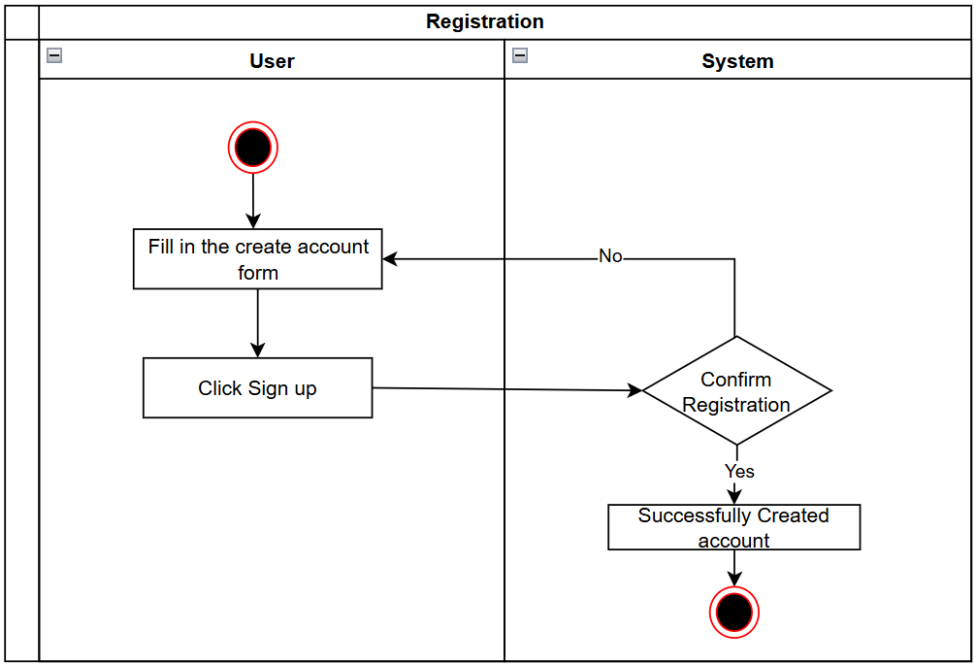


Fig. 5. Registration activity.

Figure 6 shows the activity of adding lost or found items, where the user needs to input a description of the item.

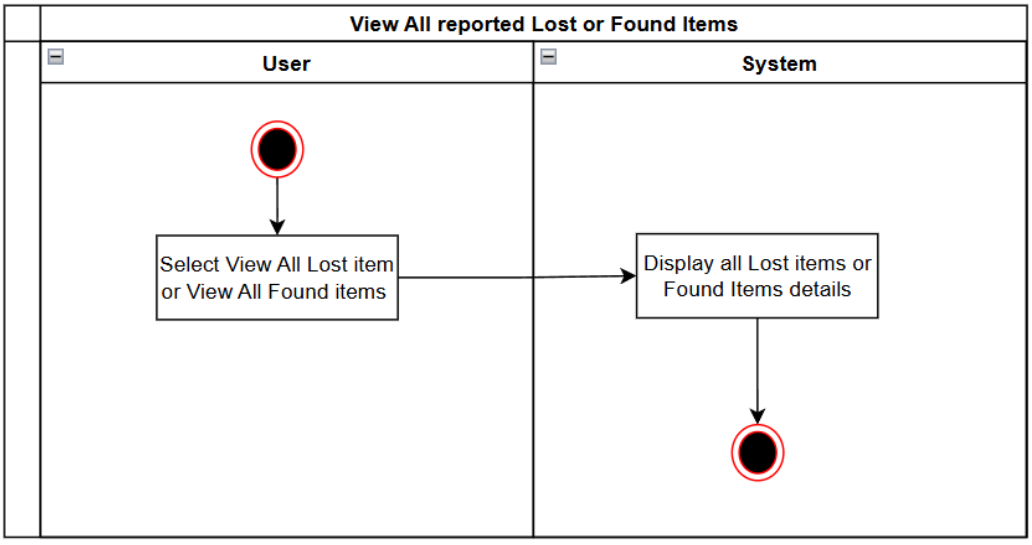


Fig. 6. Add the Lost or Found Items activity.

Figure 7 shows how users can view all reported items in the lost and found management system.

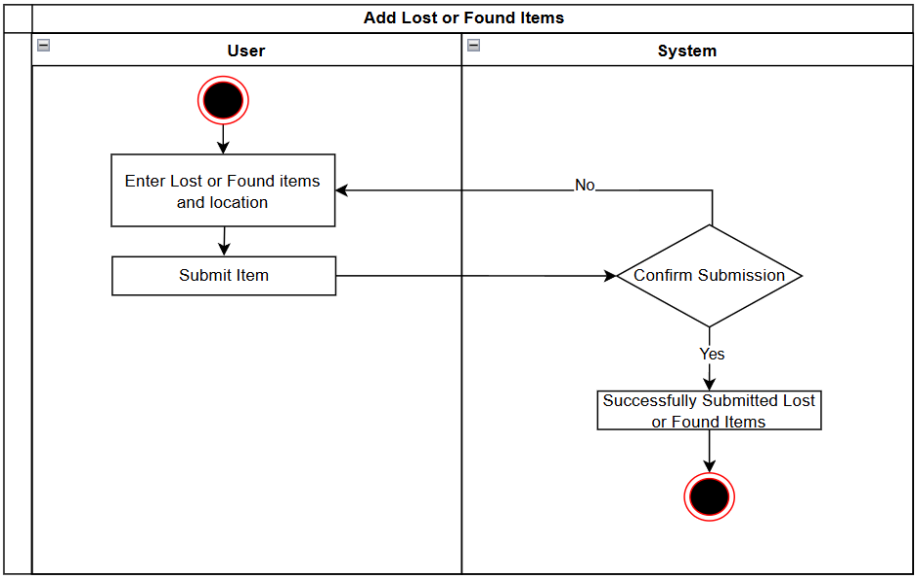


Fig. 7. View all reported Lost or Found Items activity.

Figure 8 shows how the admin can manage all the Lost or Found Items.

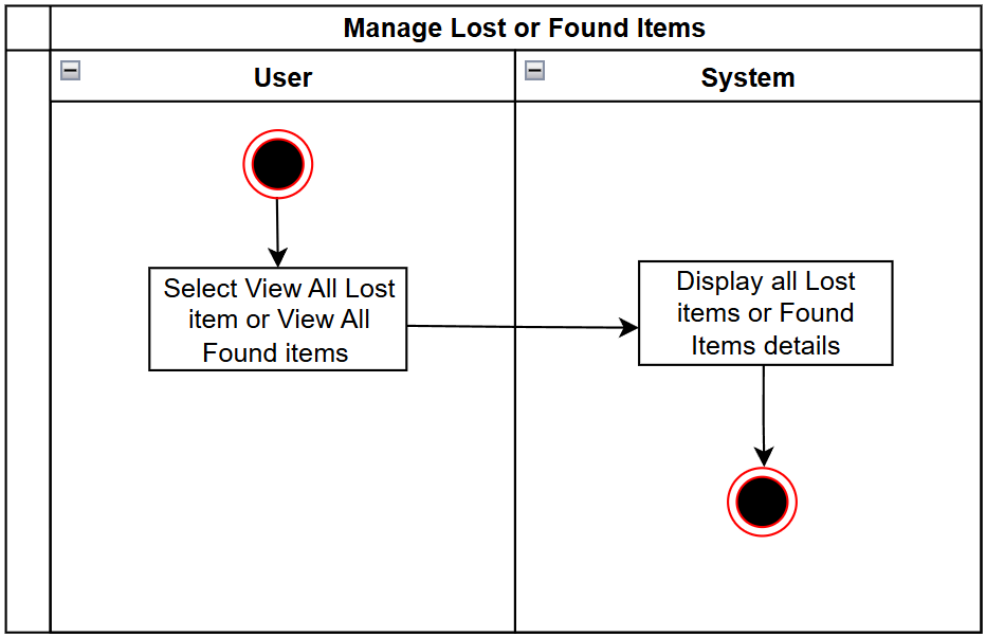


Fig.8. Manage Lost or Found Items activity.

Figure 9 shows how the admin can edit the details of items in the lost and found section.

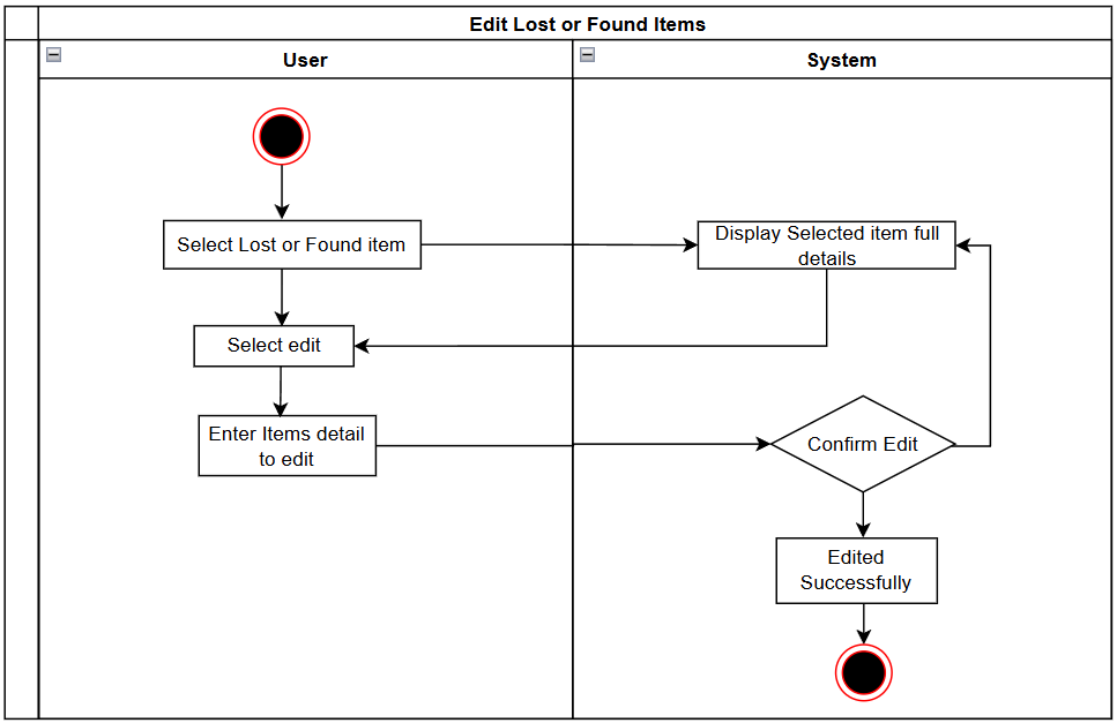


Fig. 9. Edit the Lost or Found Items activity.

Figure 10 shows how the admin deletes a lost or found item in the list.

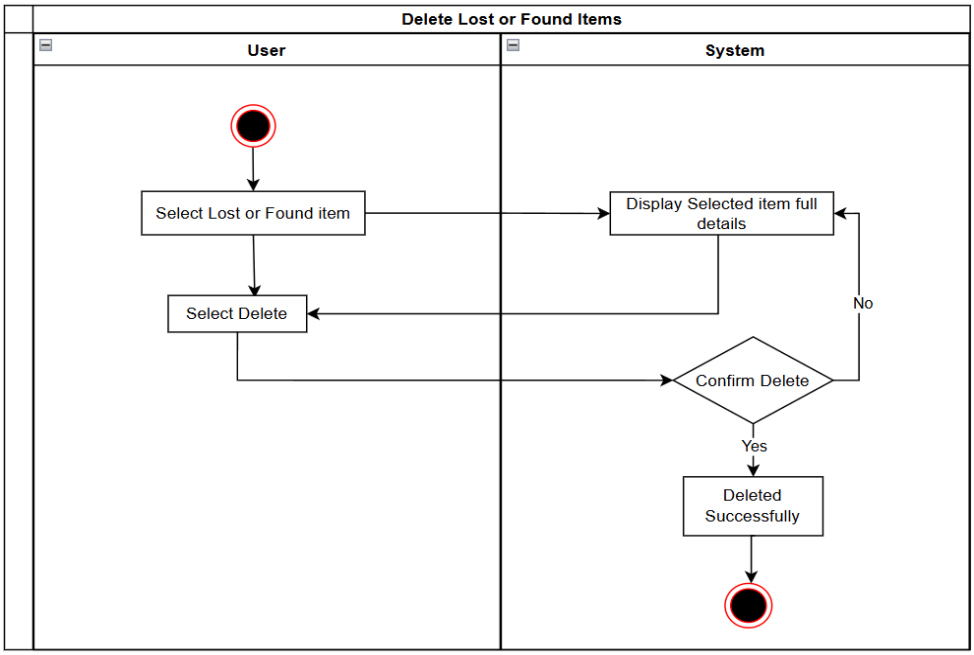


Fig.10. Delete Lost or Found Items activity.

Figure 11 shows how users can search and filter lost and found items.

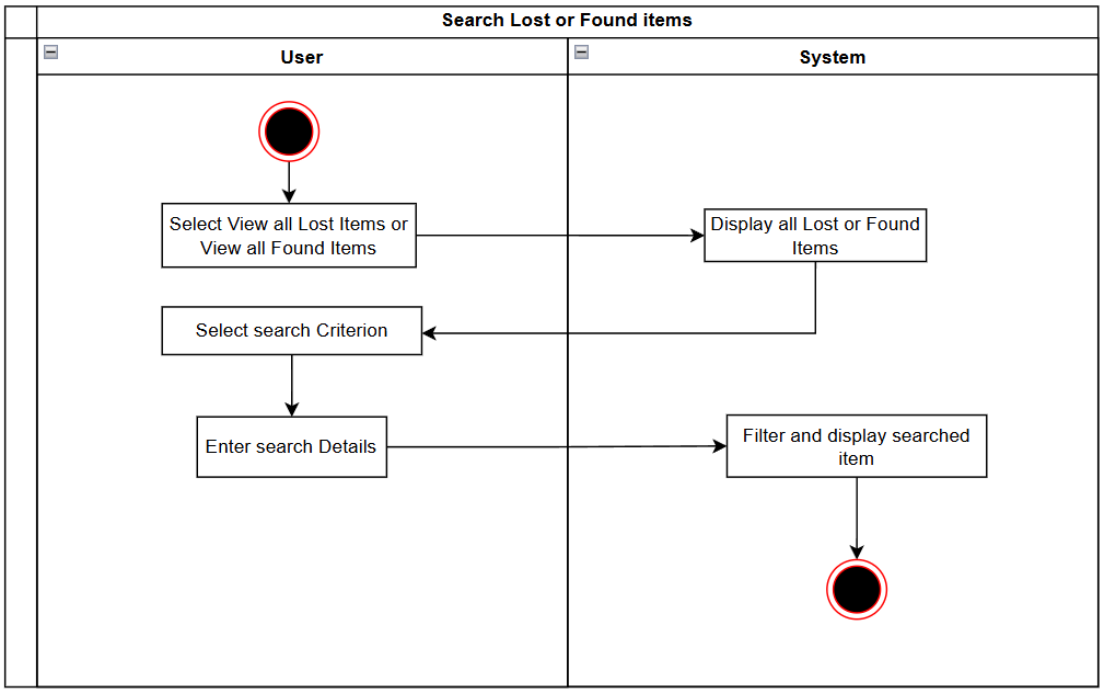


Fig.11. Search Lost or Found Items activity.

Figure 12 shows how users can mark lost items as found and can notify the owner of the update of the item.

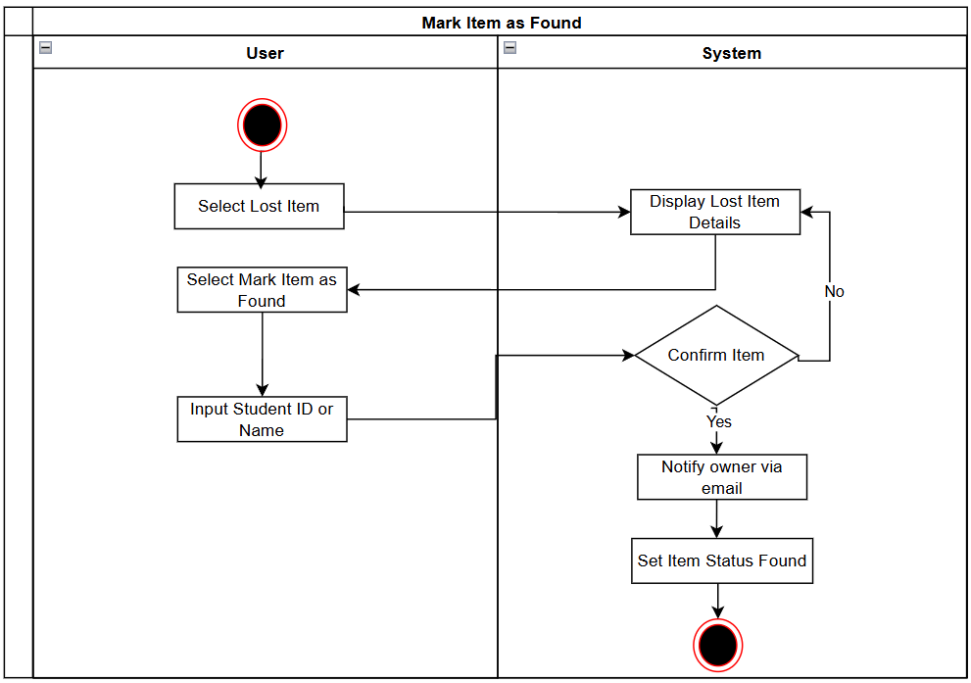


Fig. 12. Mark Item as Found activity.

Figure 13 shows how users can request for retrieval of found items and update the item status for approval.

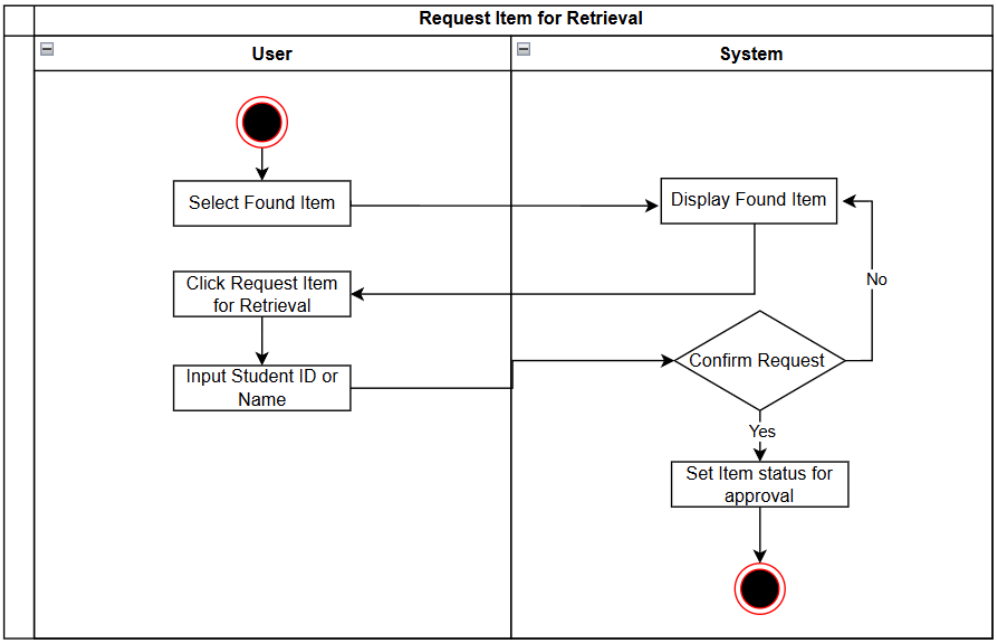


Fig.13. Request item for Retrieval activity.

Figure 14 shows how the admin confirms the retrieval in the admin dashboard.

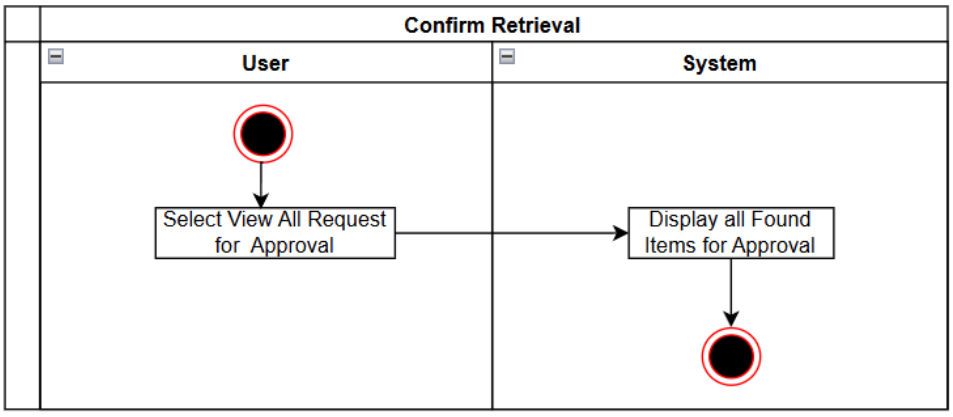


Fig.14. Confirm Retrieval activity.

Figure 15 shows how an admin approves the retrieval of the found request in the list of all requests for approval.

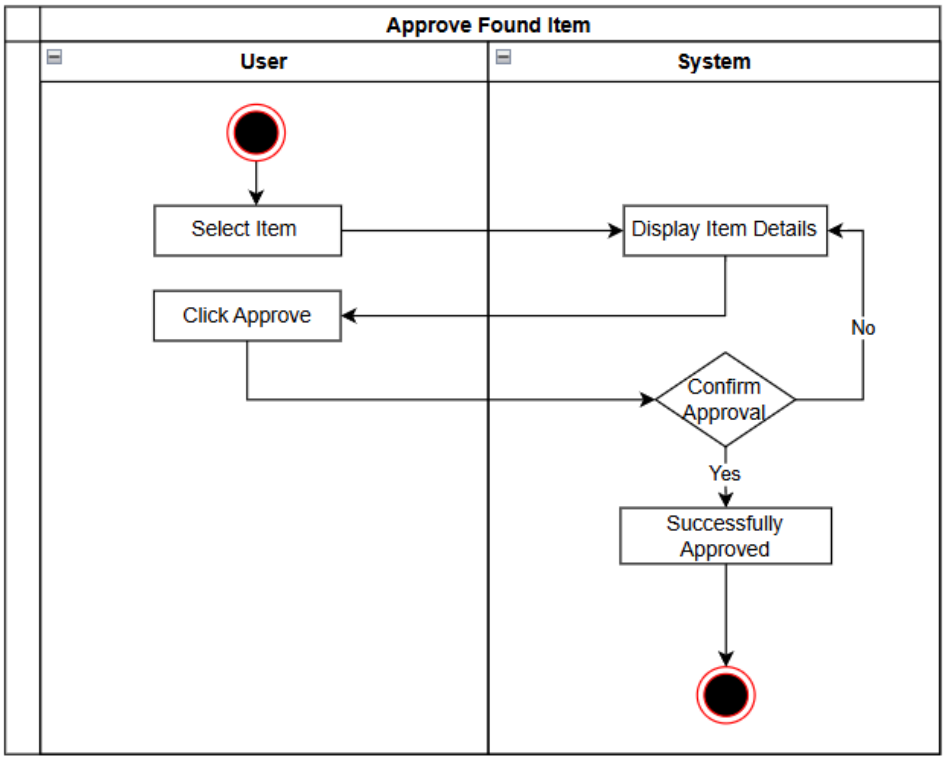


Fig.15. Approve Found Item activity.

Figure 16 shows the process of rejecting a request for approval of found items in the admin dashboard.

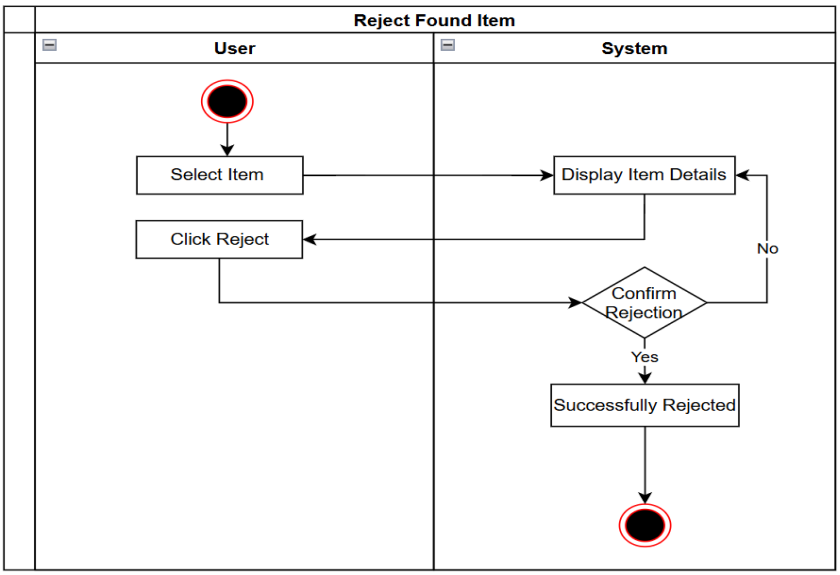


Fig. 16. Reject Found Item activity.

Figure 17 shows the process end access of the admin on the website.

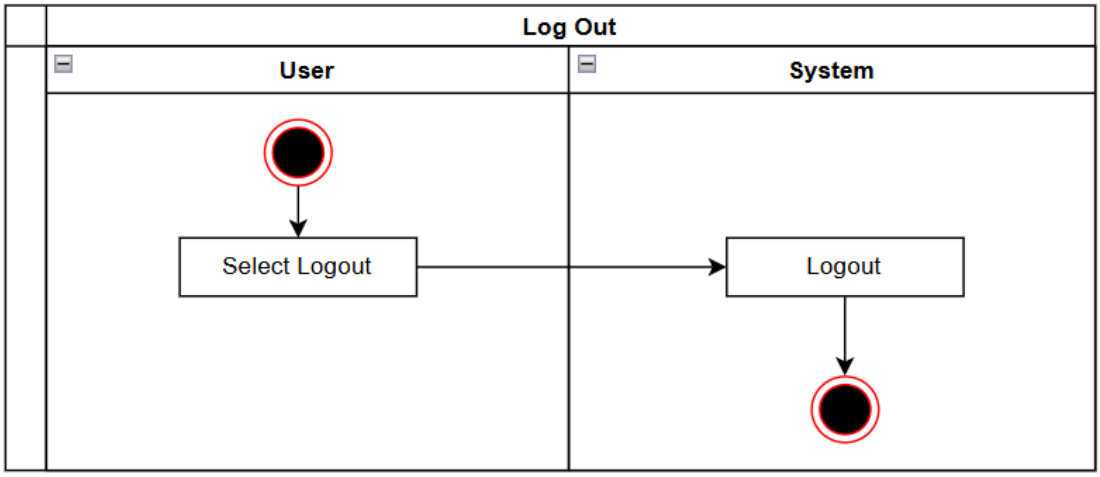


Figure 17. Log Out activity.

User Interface

Figure 18 shows the login interface of the administrator in the Lost and Found Management System, Kabacan Campus. On the page, the admin needs to input the required fields with the correct combination of username and password to log in to the system.

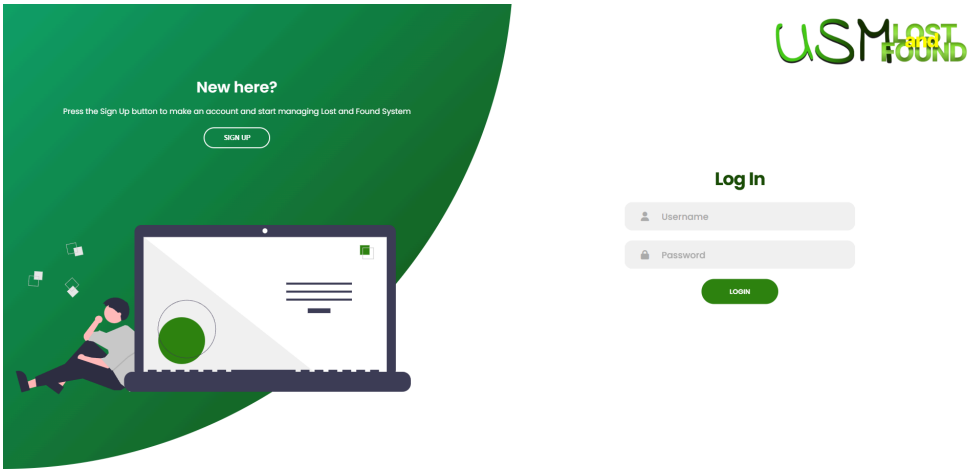


Fig. 18. The Login Form

Figure 19 shows the signup page where the admin is required to create an account first before they can log in to the system. The form needs to be filled in with personal information of the admin and set their username and password. The admin can also read the terms and conditions before they can sign up.

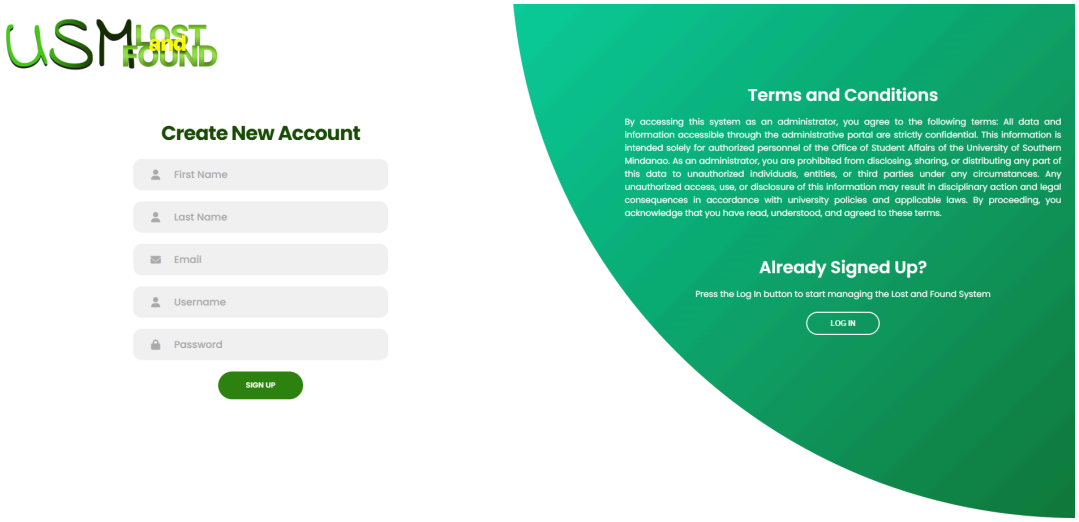


Fig.19. Admin Registration Form

Figure 20 shows the admin dashboard where the admin has data on the total number of lost Items, found Items, items for approval, and a logout button. Also, viewing all requests for approval is a navigational button for the full list of found items that need to be approved.

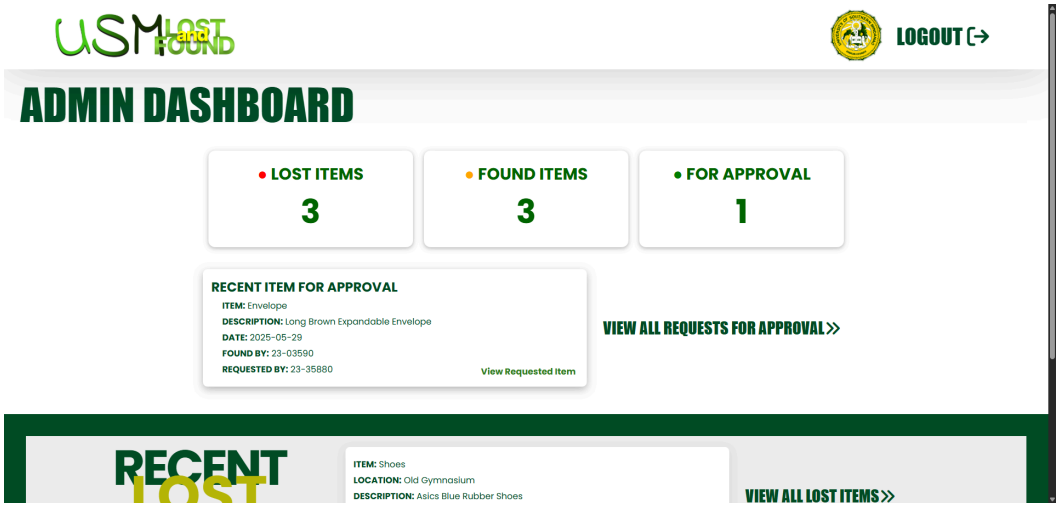


Fig.20. Admin Dashboard

Figure 21 shows the section for viewing all lost items and found items reported by the user. Also, the View all lost items is a navigational button directed to the lost item section, and the View all found items is directed to the found section.

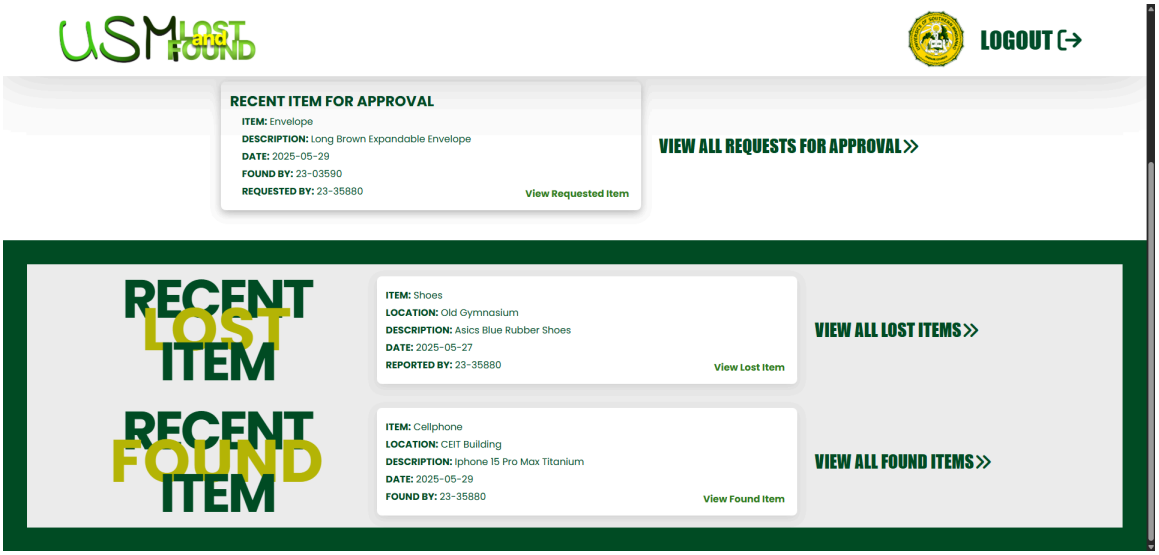


Fig.21. Viewing Lost and Found Items

Figure 22 shows the editing form where the admin can modify the description of an item if needed.

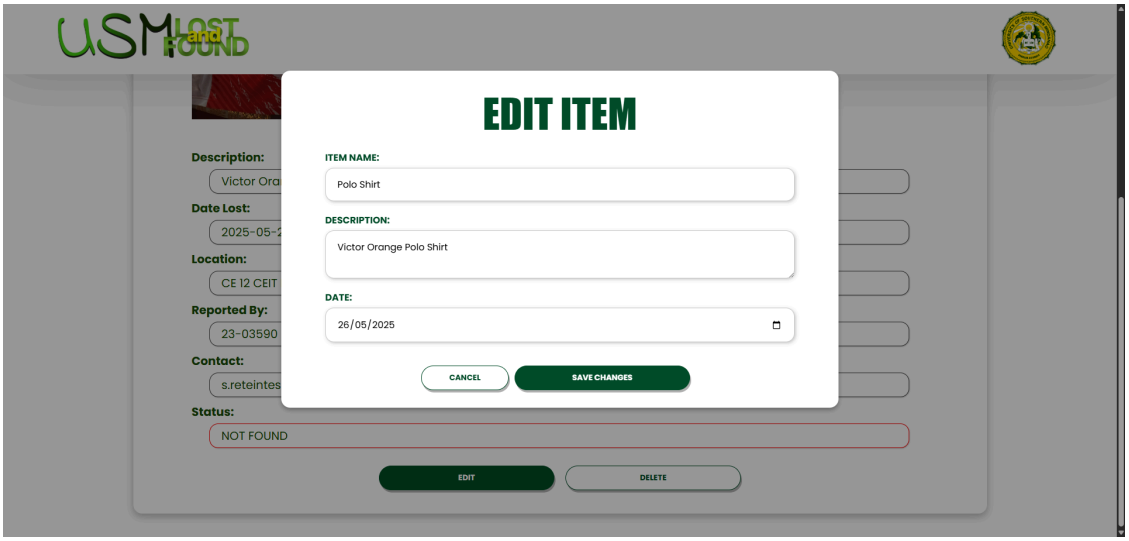


Fig.22. Item Editing Form

Figure 23 shows a submission form where the user can report their lost or found items. The Lost and Found Items form contains an input field that is required to be filled when submitting a report.

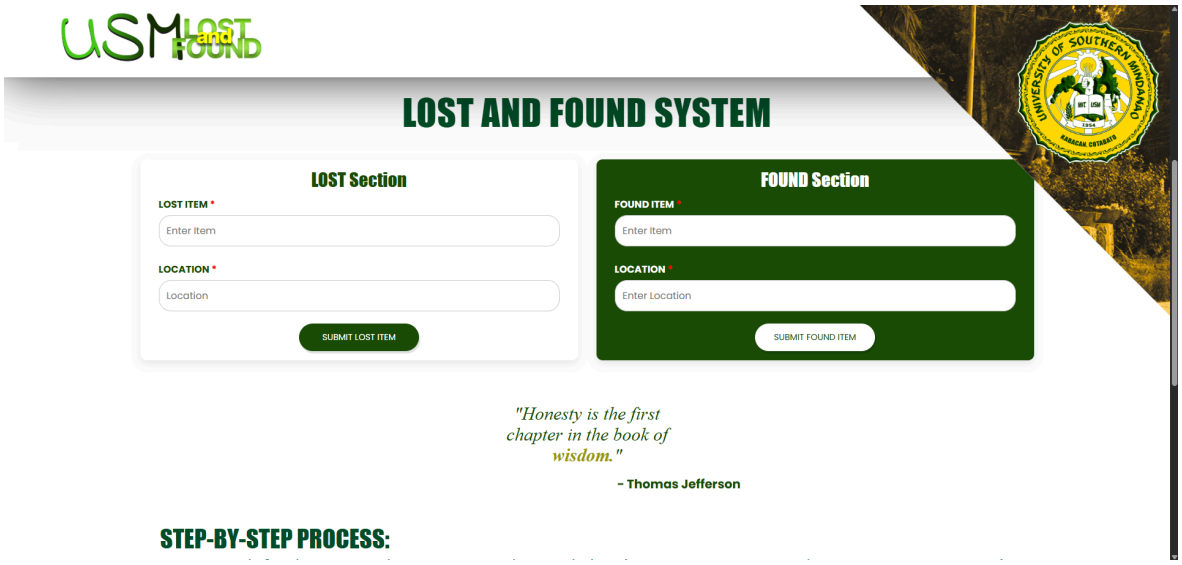


Fig.23. Lost and Found Items submission

Figure 24 shows the interface of the lost item section, where there is a search button for searching lost items and a filter method(search by item, location, and date).

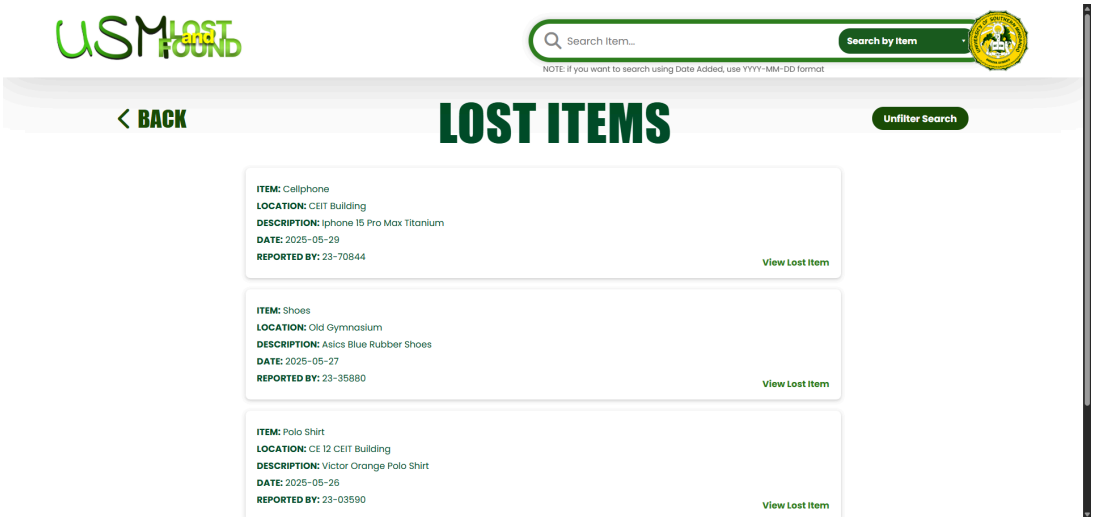


Fig.24. Search Lost Item

Figure 25 shows the found item section, where the user can also search for found items and has a filtering method(search by item, location, date).

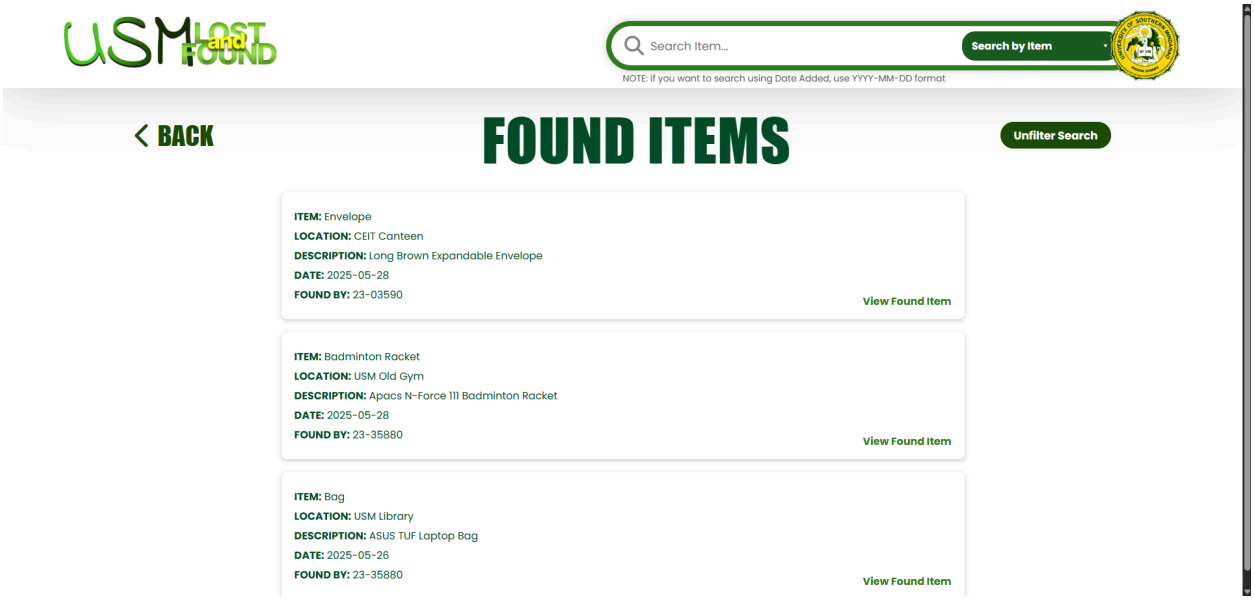


Fig.25. Search Found Item

Figure 26 shows where the admin can approve or reject an item retrieval request.

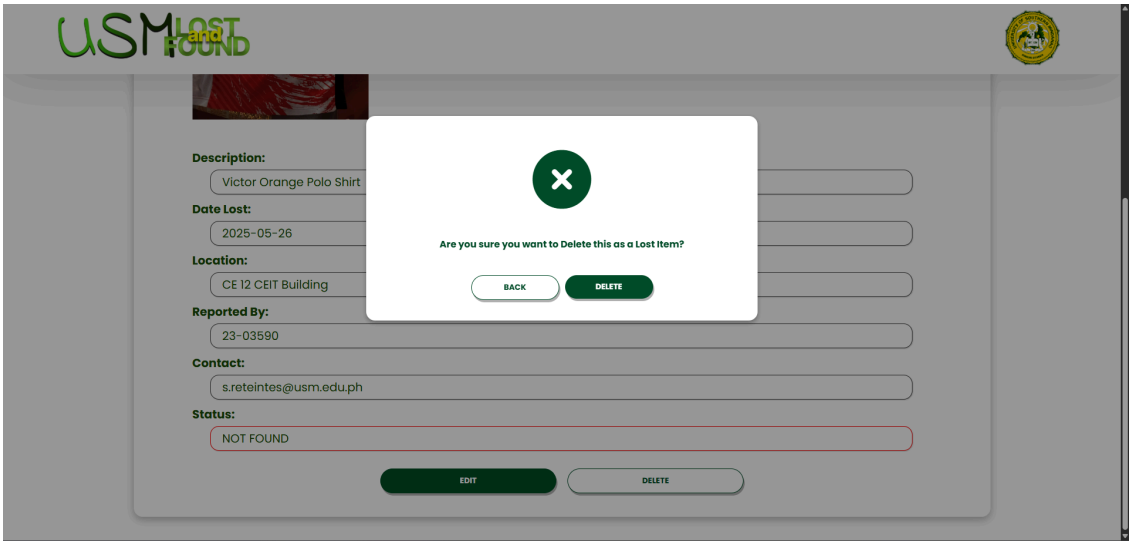


Fig.26. Approve or Reject Item

Figure 27 shows the display pop-up window when a user marks an item as found. It also requires an input field in order to mark the listed items as found.

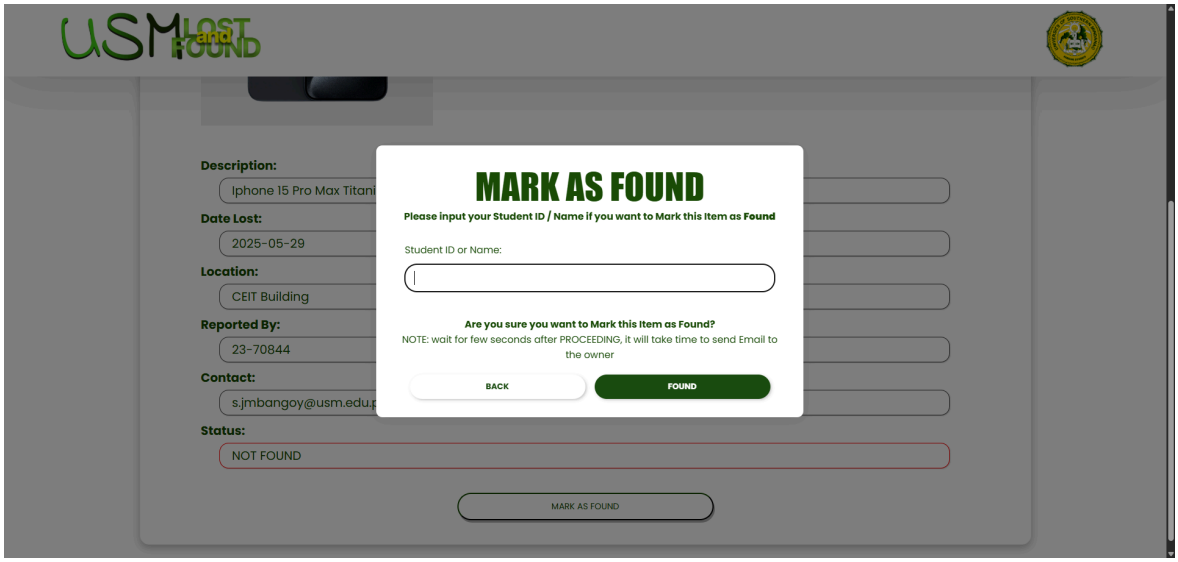


Fig.27. Mark as Found

Figure 28 shows the pop-up window when the user requests a found item. It will prompt an input field where the user is required to fill in to complete the request for item retrieval.

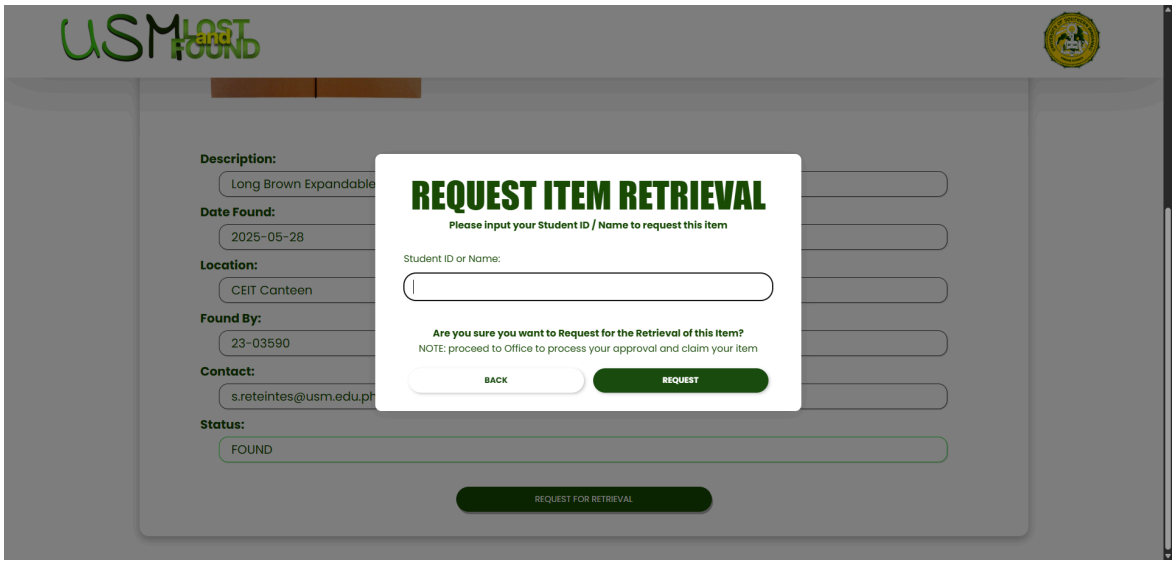


Fig.28. Request Item Retrieval

Figure 29 shows the item details of the submitted report of a lost item.

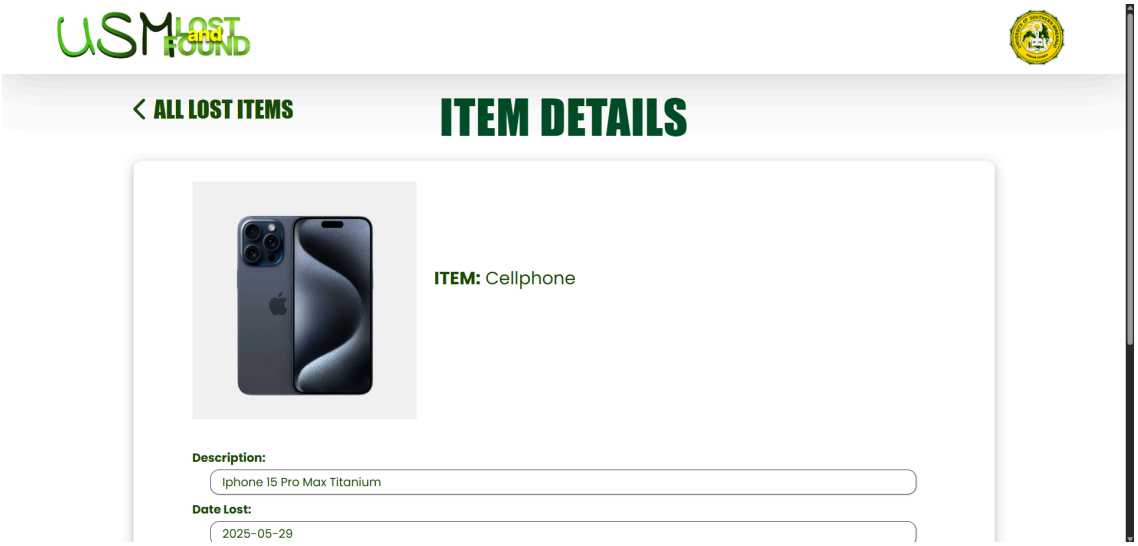


Fig.29. Lost Item Details

Figure 30 shows the item details of the submitted found item.

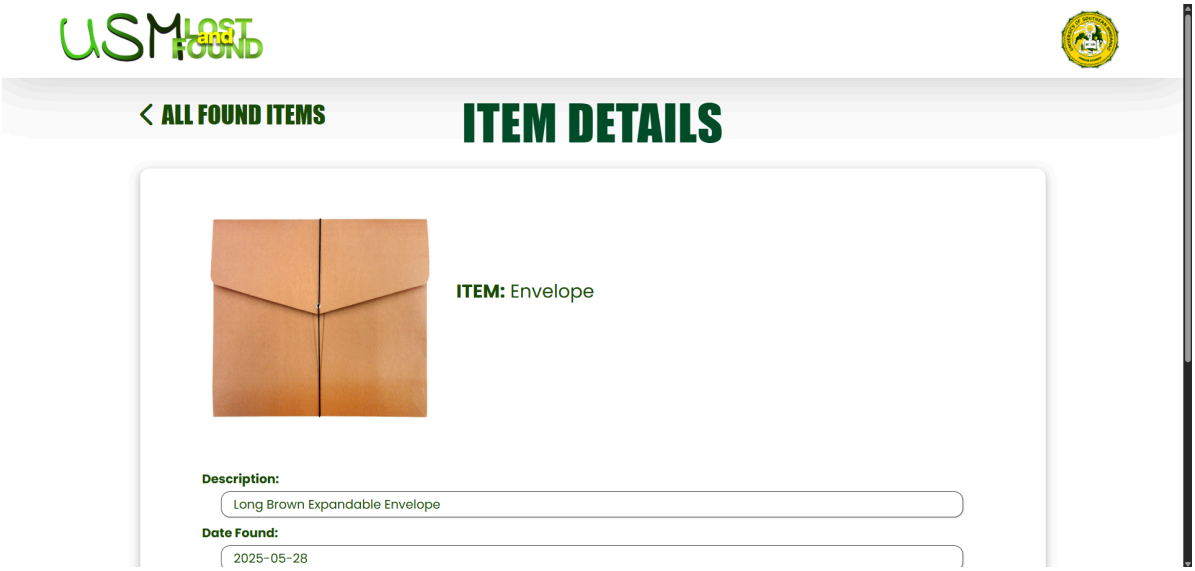


Fig.30. Found Item Details

APPENDIX

Survey Questionnaire

Scale:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

A. Experiences with Lost and Found Items in USM

No.	Statement	1 2 3 4 5
A1	have experienced losing a personal item within the USM Campus.	
A2	I have found someone else's item but didn't know the proper channel to report it.	
A3	Recovering or returning items at USM is often slow and difficult.	
A4	I have relied on social media (like Facebook) to report or search for lost items.	
A5	I believe that the current system lacks efficiency and proper documentation.	

B. Problems with the Current Process

No.	Statement	1 2 3 4 5
B1	The current process of reporting lost and found items is disorganized.	
B2	Social media-based reports are often delayed or not seen by the right people.	
B3	There is no centralized system in the university for tracking lost or found items.	
B4	Important lost items are often left unclaimed due to the poor reporting process.	

C. Perceived Benefits of the Proposed System

No.	Statement	1 2 3 4 5
C1	A centralized Lost and Found system would make it easier to report and track lost items.	
C2	Adding photos and descriptions will help in identifying the right items.	
C3	The system will reduce the dependency on social media for reporting lost and found items.	

C4 Notifications and updates from the system would increase the chances of item recovery.

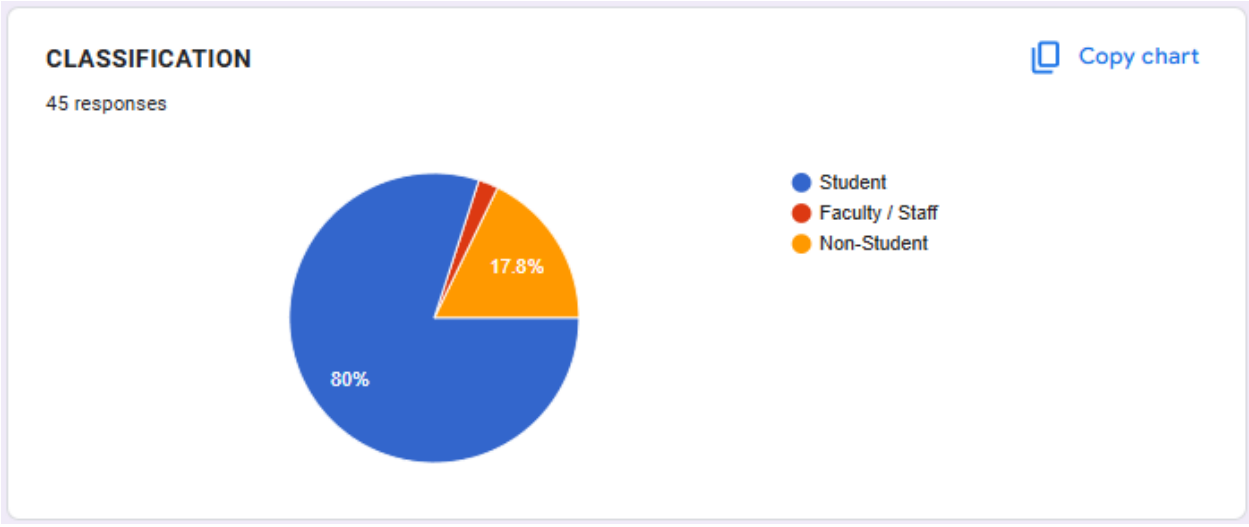
C5 I believe this system will make lost item recovery safer, faster, and more reliable.

D. Willingness to Use the System

No.	Statement	1 2 3 4 5
D1	I am willing to use this Lost and Found Management System if implemented at USM.	
D2	I would feel more secure about my belongings if this system existed.	
D3	I would recommend this system to other students or staff.	

Data Analysis

Figure 31 shows the data analysis of the online survey of the lost and found management system. This data is from the form answered by the respondents within the University of Southern Mindanao, Kabacan Campus. Based from the data this shows that there is a need of a centralized platform for Lost and Found Management system in the University of Southern Mindanao,Kabacan campus.

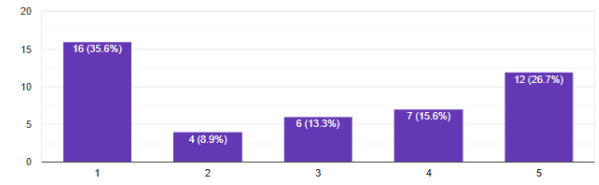


A. EXPERIENCES WITH LOST AND FOUND ITEMS IN USM

A1. I have experienced losing a personal item within the USM Campus.

Copy chart

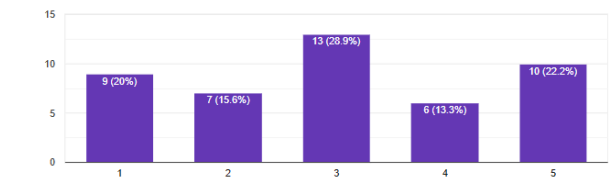
45 responses



A2. I have found someone else's item on campus but was unsure of the proper way to report it.

Copy chart

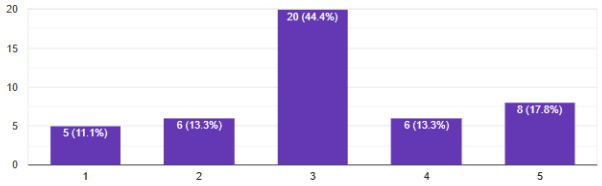
45 responses



A3. Recovering or returning items at USM is often slow and difficult.

Copy chart

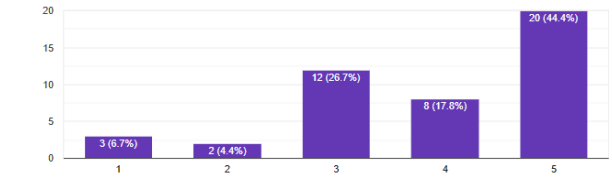
45 responses



A4. I have used social media platforms (e.g., Facebook) to report or look for lost items.

Copy chart

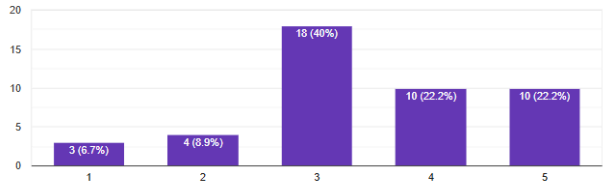
45 responses



A5. I believe that the current system lacks efficiency and proper documentation.

Copy chart

45 responses

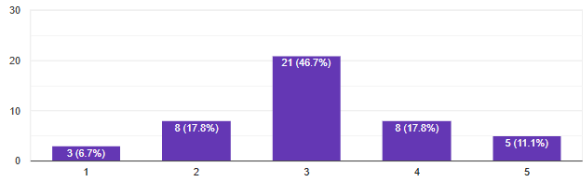


B. PROBLEMS WITH THE CURRENT PROCESS

B1. The current process of reporting lost and found items is disorganized.

Copy chart

45 responses



B2. The social media-based reports are often delayed or not seen by the right people.

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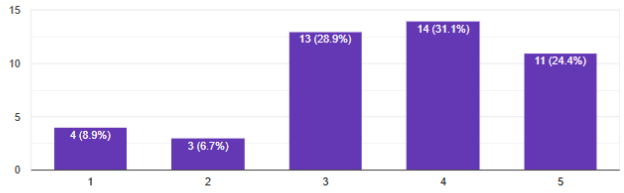
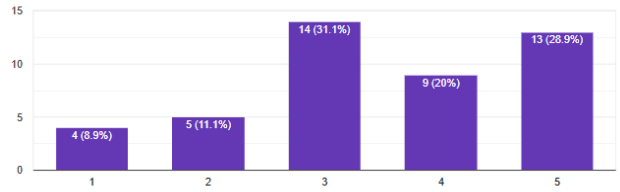
45 responses



B3. There is no centralized system in the university for tracking lost or found items.

Copy chart

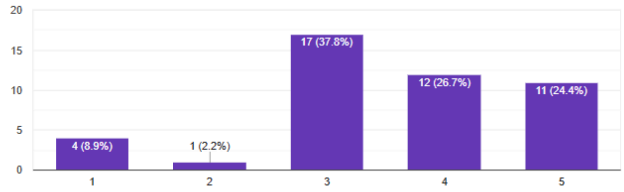
45 responses



B4. Important lost items are often left unclaimed due to the poor reporting process.

Copy chart

45 responses

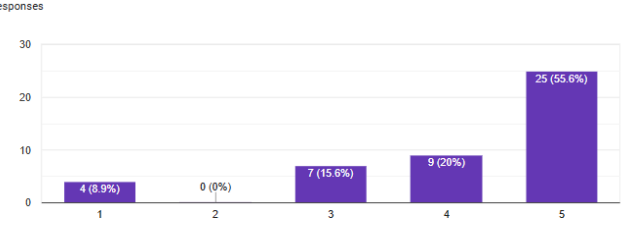


C. PERCEIVED BENEFITS OF THE PROPOSED SYSTEM

C1. A centralized Lost and Found system would make it easier to report and track lost items.

Copy chart

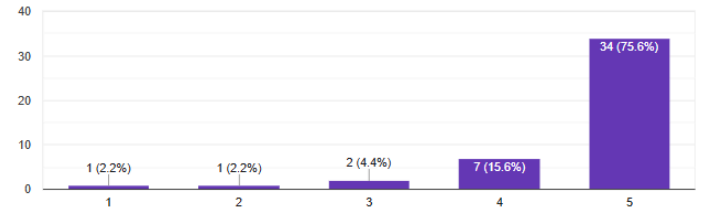
45 responses



C2. Adding photos and descriptions will help in identifying the right items.

Copy chart

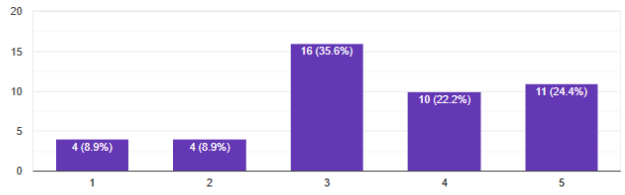
45 responses



C3. The system will reduce the dependency on social media for reporting lost and found items.

Copy chart

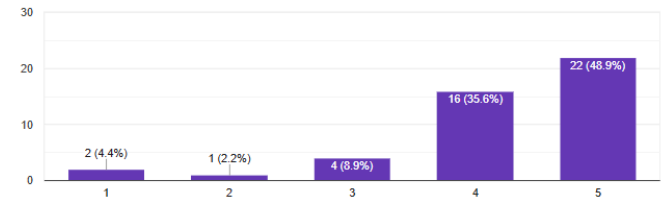
45 responses

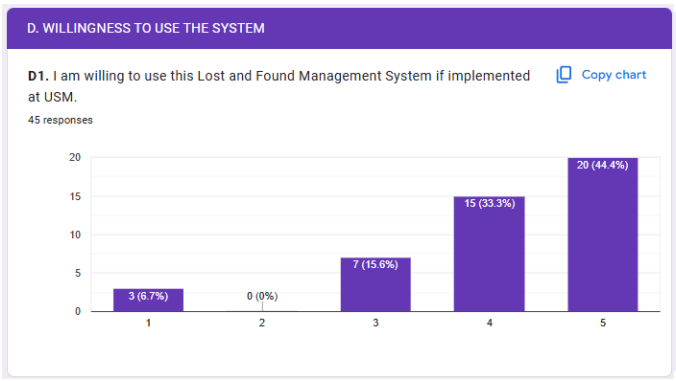


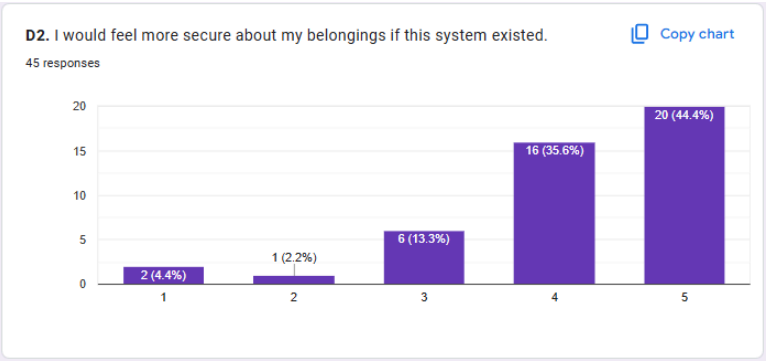
C4. The notifications and updates from the system would increase the chances of item recovery.

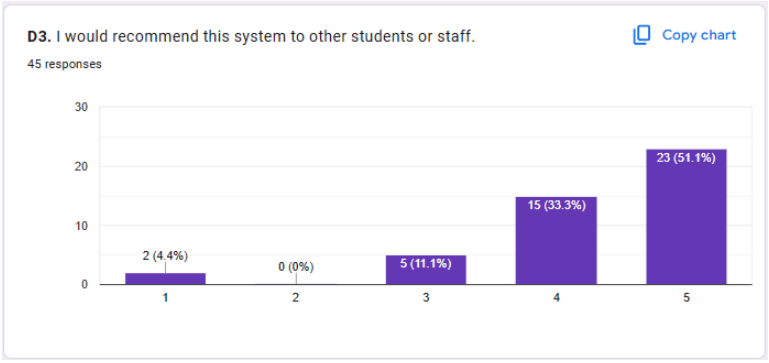
Copy chart

45 responses









Curriculum Vitae

A. PERSONAL

Name	:	JESSA MAE B. ANGOY
Nickname	:	“Samme”
Address	:	Purok 4B, Kisante, Makilala
Age	:	19

Birthday	:	October 15, 2005
Birthplace	:	Kisante
Sex	:	Female
Civil Status	:	Single
Citizenship	:	Filipino
Height	:	1.50m
Weight	:	45 kg
Religion	:	Roman Catholic

B. FAMILY

Father	:	Abundio C. Angoy
Mother	:	Gilda B. Angoy
Sisters	:	Gina A. Bidal
		Juliet A. Mun
		Joan B. Angoy
Brothers	:	Jacob B. Angoy
		Julius B. Angoy
		Jason B. Angoy

C. EDUCATIONAL BACKGROUND

College	:	University of Southern Mindanao Kabacan, North Cotabato Bachelor of Science in Computer Science 2023-Present
Senior High School	:	Kisante National High School Kisante, Makilala, Cotabato SY 2019-2023
Junior High School	:	Kisante National High School Kisante, Makilala, Cotabato SY 2017-2019
Elementary	:	Kisante Central Elementary School Kisante, Makilala, Cotabato SY 2012-2017

Curriculum Vitae

A. PERSONAL

Name	:	Eduard Jr. A. Flores

Nickname	:	“Gwapo”
Address	:	Digos City
Age	:	20
Birthday	:	March 15, 2005
Birthplace	:	Digos City
Sex	:	Male
Civil Status	:	Single
Citizenship	:	Filipino
Height	:	163m
Weight	:	54 kg
Religion	:	Roman Catholic

B. FAMILY

Father	:	Eduard C. Flores
Mother	:	Janet A. Flores
Sisters	:	None
Brothers	:	None

C. EDUCATIONAL BACKGROUND

College	:	University of Southern Mindanao Kabacan, North Cotabato Bachelor of Science in Computer Science 2023-Present
Senior High School	:	Senior High School In Digos City Digos City, Davao Del Sur SY 2019-2023
Junior High School	:	Digos City National High School Digos City, Davao Del Sur SY 2017-2019
Elementary	:	Ramon Magsaysay Central Elementary School Digos City, Davao Del Sur SY 2012-2017

Curriculum Vitae

A. PERSONAL

Name	:	REY TENER INTES
Nickname	:	“Gwapo”

Address	:	Cabpangi, Libungan, North Cotabato
Age	:	20
Birthday	:	January 25, 2005
Birthplace	:	Cabpangi
Sex	:	Male
Civil Status	:	Single
Citizenship	:	Filipino
Height	:	163 cm
Weight	:	60 kg
Religion	:	Roman Catholic

B. FAMILY

Father	:	Bernabe T. Intes
Mother	:	Ofelia E. Intes
Sisters	:	None
Brothers	:	Roy T. Intes

C. EDUCATIONAL BACKGROUND

College	:	University of Southern Mindanao Kabacan, North Cotabato Bachelor of Science in Computer Science 2023-Present
Senior High School	:	Libungan National High School Libungan, North Cotabato SY 2019-2023
Junior High School	:	Libungani National High School Libungan, North Cotabato SY 2017-2019
Elementary	:	Cabpangi Elementary School Cabpangi, Libungan, North Cotabato SY 2012-2017