

FindItHere: Lost and Found Item Matching Web Application

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Abstract

The 'FindItHere' project addresses the problem of effectively managing lost and found items in Universiti Tun Hussein Onn campus. Losing personal belongings can be stressful, and the absence of a centralised platform will make it difficult for students and staff to recover their items. 'FindItHere' is a centralised and user-friendly web application that enables users to report about lost or found items within the campus by providing necessary information and image of the items. The objective of the project is to improve user and admin collaboration to simplify and make the recovery process faster. The 'FindItHere' system is developed using HTML, CSS, PHP and JavaScript while the database is implemented using MySQL. The Agile methodology is used in the development of the project, which enables continuous development and feedback to improve functionality and features. The development of the main modules of the system such as user registration, login, lost and found reporting page, report history, automated item matching, real-time notifications and admin dashboard are implemented in phases. At every phase, the modules are tested and evaluated to ensure functionality and usability. A User Acceptance Test (UAT) is carried out after the system is developed completely to gather feedback from users about the system and the system is hosted on a local server. In conclusion, 'FindItHere' provides a complete lost and found management system that facilitates better interaction between administrators and users.

1. Introduction

The 'FindItHere' project addresses the problem of lost and found items on the campus of Universiti Tun Hussein Onn Malaysia (UTHM), where inefficiencies and lost recovery possibilities occur due to the absence of a centralised reporting system. The inconsistent and time-consuming aspect of current methods, such as social media or direct enquiries, makes it challenging to find lost items efficiently [1][2]. The aim of this project is to create a web-based platform specifically for the UTHM community that will allow staff and students to track the status of their complaints, report lost or found items and get real-time notifications for matched items. The aim of this project is developing an effective reporting system, promoting user-admin cooperation, and conducting complete testing to make sure the system satisfies user requirements. The project scope focusses on enhancing user satisfaction, encouraging greater accountability, and improving the lost-and-found process through the implementation of a centralised and user-friendly system [3].

The 'FindItHere' system offers an effective, user-friendly platform that improves the reporting and tracking of lost and found items. In addition to increasing recovery rates for lost items and ensuring transparency through

real-time updates and notifications, it will also speed up users and administrator interactions. The technology also improves the process of finding lost things, making it a more efficient and organised option for the UTHM community [4].

2. Literature Review

This section analyses the relevant literature and the conceptual basis for the creation of 'FindItHere' system.

2.1 Domain Background

Lost and found systems play a crucial role in reconnecting individuals with their lost belongings, especially in crowded areas like universities, transportation hubs, and large-scale events. Effective systems should be accessible, user-friendly, and tailored to specific environments to overcome inherent challenges [1]. In educational institutions, however, the absence of centralized systems results in fragmented reporting methods such as social media posts, circulars, and word-of-mouth communication [2]. These traditional reporting methods are often inefficient and lead to mismatches, further complicating the recovery process. Research underscores the advantages of adopting digital lost-and-found reporting systems, with institutions reporting a 40% increase in recovery rates after implementation, as demonstrated by Smith et al. [3].

Modern technologies have improved how lost and found systems operate by offering more structured and accessible solutions. Although some advanced systems may use Artificial Intelligence (AI) and image recognition to improve matching accuracy, the 'FindItHere' system focuses on more practical and straightforward techniques such as category filtering and text-based matching. By comparing keywords like item name, category, and description, the system helps users find possible matches between lost and found reports. This approach improves the chances of recovering items in a timely manner without relying on complex AI models. The development of 'FindItHere' is based on addressing the limitations of traditional manual methods, using efficient form input, user notifications, and a centralized platform to make the lost and found process more organized and effective.

2.2 Online Lost and Found Item Reporting System

Online lost and found item reporting systems have revolutionized the recovery process by replacing manual and inconsistent methods with efficient, centralized platforms. These systems bridge the gap between item finders and owners, allowing users to report lost or found items, search through databases, and receive timely updates seamlessly [4]. Innovative features like image recognition and AI-based algorithms enhance these platforms by comparing photos of lost and found items to identify matches, reducing human effort significantly. By fostering user engagement and a sense of community, these systems encourage participation in the recovery process, making it more efficient and inclusive [5].

There are still challenges in despite their advancement. The lack of user-friendly interfaces in many current systems prevents those with less technological expertise from using them. Furthermore, protecting data security and privacy is essential, requiring strong defences against unauthorised access to personal data, such as role-based access control and encryption. These problems highlight how important it is to create a safe, comprehensive, and user-friendly system, all of which the 'FindItHere' project aims to successfully accomplish.

2.3 Methods and Technologies

The "FindItHere" system is built using PHP, HTML, CSS, and JavaScript, supported by a MySQL database. It uses basic matching methods that compare text details like item name, category, location, and date to help match lost and found items. Metadata such as item type and report date helps organize and classify the reports. To keep user information safe, the system includes security features like password encryption and role-based access, making sure only the right users and admins can access certain parts of the system.

2.4 Comparison Between Existing Systems and Proposed System

This section lists the existing system that are related to Lost and Found Reporting. The systems are 'Airport Lost and Found' [8], 'Lost-Found.Org' [9] and 'Troov' [10]. These existing systems provide basic services for reporting lost and found items, but each has its own strengths and limitations when compared to 'FindItHere'.

The 'Airport Lost and Found' system focuses only on items lost within airport premises. It allows users to fill out a form online but does not provide account registration, login functionality, or notifications. Users cannot view the status of their report after submission, making it difficult to follow up. It is also limited to a specific location and is not meant for everyday environments like university campuses.

Next, the 'Lost-Found.Org' is a simple platform that allows users to report items without creating an account. While this makes it easy to use, it also means users cannot manage their reports, track progress, or receive

updates. There is no matching algorithm or user dashboard, and the platform lacks proper security and personalized interaction.

Lastly, 'Troov' is more advanced than the other two systems. It includes a matching feature that tries to connect lost and found items based on item details. However, it is designed for public use and not targeted for specific institutions like universities. While it does offer some form of report tracking, it does not provide a role-based system that separates user and admin responsibilities.

In contrast, the 'FindItHere' system is specifically built for the UTHM community. It includes user registration and login, allowing users to track their reports and view complaint history. The system uses text-based matching to compare item names, categories, and locations. When a potential match is found, users receive a real-time notification. Additionally, the platform has a secure admin panel where staff can manage reports and monitor system statistics. Features like role-based access, password encryption, and a structured complaint flow make 'FindItHere' not only more secure but also more relevant and user-friendly for the university environment. Table 1 shows comparison table of existing systems and 'FindItHere'.

Table 1 Comparison Table of Existing System and 'FindItHere'

Features	Airport Lost and Found [8]	Lost-Found.org [9]	Troov [10]	FindItHere
Login	No	No	No	Yes
Register	No	No	No	Yes
Matching Algorithm	No	No	Yes	Yes
Real-Time Notification	No	No	No	Yes
Secure	No	No	Yes	Yes
User-Friendly Interface	No	Yes	Yes	Yes

3. Methodology

The methodology and software development life cycle model used in the development of the 'FindItHere' project is shown in this section. The Agile Model is the specific methodology selected for this project. Agile methodology is a collection of methods and procedures that enable flexible planning, continuous integration, and developmental progress. Initially conceptualized in the early 2000s, Agile was designed to address the limitations of traditional project management frameworks, such as the Waterfall model, which often struggled to accommodate changing requirements and stakeholder feedback throughout the development lifecycle [6]. Agile divides the development process into phases, which are smaller, easier to manage.

This project uses the agile methodology to create a changing environment in which it can adapt. In projects like 'FindItHere' where the needs may change over time and quick feedback from users can influence the system's design, it works effectively. A planning, design, development, testing, and deployment and review phase is shown in Figure 1. After every phase, the result is delivered to the user to be used and evaluated. The user welcomes and accepts any updates that improve the application, regardless of the process's stage. Agile encourages collaboration between the development team and stakeholders, ensuring that the final product aligns with user expectations and requirements [7].



Figure 1 Agile Methodology

3.1 System Development Workflow

Table 2 shows the system development workflow for each phase:

Table 2 System Development Workflow

Phases	Task
Planning	Gathering requirements, creating a Gantt chart, and defining system features.
Design	Developing wireframes, mock-ups, and database schemas.
Development	Implementing features iteratively using HTML, PHP, JavaScript and MySQL.
Testing	Conducting unit, integration, and usability testing to ensure reliability.
Deployment and Review	Launching the system and gathering user feedback for improvements.

4. Analysis and Design

The analysis and design methods used to create the ‘FindItHere’ system are discussed in this section. Section 4.1 presents the requirement analysis which includes functional requirements analysis and non-functional requirements. Next, Section 4.2 goes into detail on the system design, while Section 4.2.1 shows the flowchart of the system. The Context Diagram is shown in Section 4.2.2 and Data Flow Diagram (DFD) is shown in Section 4.2.3. The Entity Relationship Diagram (ERD) is shown in Section 4.2.4. The user interface (UI) of the system is shown in Section 4.3.

4.1 Requirement Analysis

Analysing requirements is an important stage in system development that involves determining and documenting the features and characteristics required for the ‘FindItHere’ system to be implemented successfully. The ‘FindItHere’ system requirements are divided into functional and non-functional categories.

Table 3 Functional Requirements

Module	Description
User Registration and Login	Users (students/staff) must be able to register and log in to access the system.
Submit Lost Item Report	Users should be able to submit details of lost items via a form.
Submit Found Item Report	Users should be able to report found items using a structured form.
Receive Notification on Match	Users should receive notifications when their report matches another.
View Report History	Users should be able to view the status of their submitted reports.
Admin Registration and Login	Admins must be able to register and log in to access the admin dashboard.
View All Reports (Admin)	Admins can view all lost and found reports submitted by users.
Update Report Status (Admin)	Admin can update the status of the complaint made by users.
Delete Reports (Admin)	Admins can delete reports in the table.
View Statistics (Admin)	Admins can view bar chart of total lost or found reports per year, and pie charts of item categories lost or found per month. Admins can also export the charts as PDF documents.

Table 4 Non-Functional Requirements

Requirement	Description
Operational	The system will function only when connected to the internet.
Usability	The system should have a simple and user-friendly interface for easy navigation.
Performance	Pages should load quickly, and form submissions should be processed efficiently.
Security	User passwords must be encrypted, and user sessions should be securely managed.
Scalability	The system should be designed to support an increasing number of users and reports.

Availability

The system should be accessible 24/7.

4.2 System Design

System design is the process of developing a thorough framework that directs the development and implementation of the 'FindItHere' system. It defines how the system functions and communicates with users by translating the requirements found during the analysis phase into architectural components. To meet user expectations and provide an effective solution, the design process involves defining the system's flow, functionality, and underlying architecture.

4.2.1 Flowchart

The flowchart shown in Figure 2 provides a clear visual representation of the system's workflow by showing each step involved in the 'FindItHere' system. It starts with an Index Page which redirects to the Login Page. If user does not have an account, they must Register before able to login into the system. After login, user will be directed to the Home Page of the system. Next, users can choose if they want to complain about Lost Item or Found Item. Users must input details such as item name, category, description and image to make a complaint. After that, users can view the complaints they have made. The system Processes and Matches the data and uses the matching algorithm to find possible matches for things that have been lost or found. A notification is sent and if the user views the notification, it will redirect them to the View Found Items Page. Lastly, the user can logout from the system. The flowchart provides a general summary of how users interact with the system.

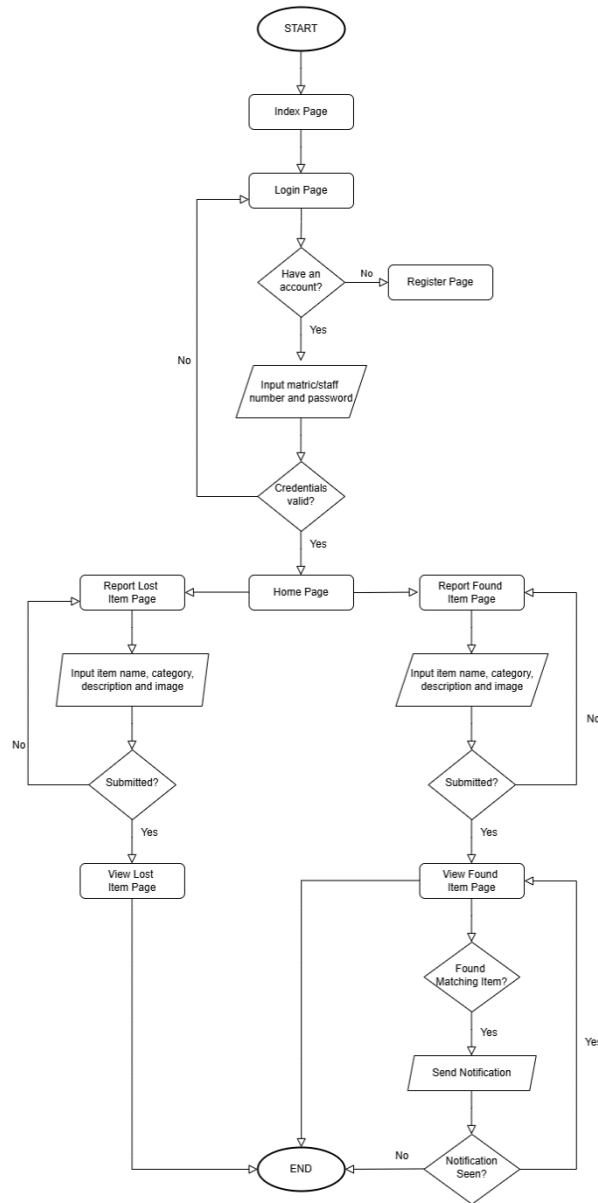


Figure 2 User Flowchart

4.2.2 Context Diagram

The Context Diagram in Figure 3 shows how the main external entities which are Users and Admin that interact with the 'FindItHere' system. This diagram illustrates how information and document flow between these users and the system.

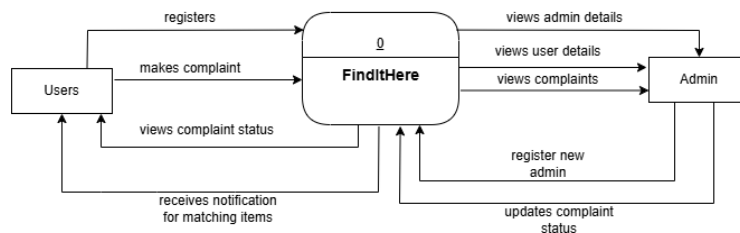


Figure 3 Context Diagram

4.2.3 Data Flow Diagram Level 0

The 'FindItHere' project's DFD Level 0 shows how the main process interacts with external entities which are Admin and Users to give an overview of the system's functioning. Registering, reporting lost or found items, checking the status of their reports, and getting notifications for similar items are how users engage with the system. This ensures people are using the platform regularly and are easily notified of updates.

Administrators, on the other hand, update the status of reports and monitor user information and complaints to manage the system. Accurate status updates and efficient monitoring are guaranteed by this procedure. By storing and processing information about user registrations, report submissions, and notifications about matched items, the system makes it easier for users and administrators to communicate effectively. The main feature that facilitates smooth data flow and communication between administrators and users is the centralised 'FindItHere' process. By clearly defining the management of inputs and outputs, this Level 0 DFD provides an outline for the system's fundamental functions. The DFD Level 0 is shown in Appendix A.

4.2.4 Entity-Relationship Diagram

The ERD defines important entities in the 'FindItHere' application, including users, lost_item_reports, found_item_reports, notifications, admins, admin notifications and appreciation, as well as their attributes and relationships. The ERD is shown in Appendix B.

5. Result and Discussion

The FindItHere web application is implemented using PHP, HTML, CSS and JS. The database management system used is MySQL, which is widely used for data management and storage across different applications.

5.1 Implementation of System

Figure 4 shows the registration and login page for users. Users must create an account before being able to use the website. Users must input their full name and select if they are a student or staff. If the user selects student, they must input their matric number or if user selects staff, they must input their staff ID. Next users must also input their contact number, email address and their preferred password where the password must be at least 8 characters and must contain at least 1 letter, 1 number and 1 special character. Once the registration process is complete users can login to the website. Users must select their user type if they are a student or staff and must input their password to login into the website. A "Forgot Password" link is also available to enable users to reset their password if they have forgotten it.

Signup

Password must meet the following requirements:

- At least 8 characters
- At least one letter
- At least one number
- At least one special character

Already have an account? [Login Now](#)

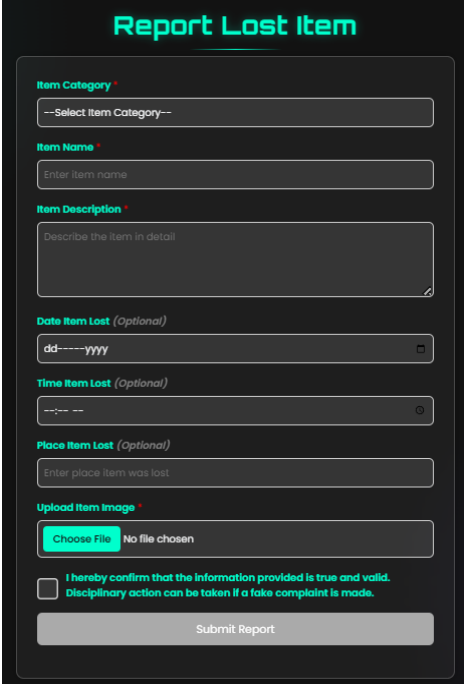
Login

[Forgot password](#)

Don't have an account? [Signup Now](#)

Figure 4 User Registration and Login Page

Figure 5 shows the report lost item page and its algorithm. User can lodge a report if they have lost an item within the university campus in this page. Users must select the category of item they have lost, input the item name, description and upload a picture of the item they have lost. Users can also input the date, time and place they lost the item, but those details are optional. Users must click on the confirmation checkbox before being able to click on the submit button to acknowledge that the report they are making is true and valid.



Algorithms

Start

1. Validate user session:


```
if(!isset($_SESSION['id'])) {
    redirect('login.php');
}
```
2. Process form submission:


```
if(isset($_POST['report_lost_item'])) {
    $item_name = validate($_POST['item_name']);
    $item_category = validate($_POST['item_category']);
    $image = validate($_FILES['image']['name']);
}
```
3. Upload image and insert report:


```
if(move_uploaded_file($_FILES['image']['tmp_name'],
    $target)) {
    $stmt = $conn->prepare("INSERT INTO
    lost_item_report(...) VALUES(...)");
    if($stmt->affected_rows > 0) {
        $report_id = $conn->insert_id;
    }
}
```
4. Check for matching found items:


```
$match_stmt = $conn->prepare("SELECT * FROM
    found_item_report WHERE item_category=? AND item_name=?");
if($result->num_rows > 0) {
    while($match = $result->fetch_assoc()) {
        $notify_stmt = $conn->prepare("INSERT INTO
        notifications(...)");
        $assign_stmt = $conn->prepare("INSERT INTO
        user_notifications(...)");
    }
    alert('Notifications sent for matches');
} else {
    alert('No matches found');
}
```

End

Figure 5 Report Lost Item Page

Figure 6 shows the report found item page and its algorithm. Users can lodge a report if they have found an item within the university campus in this page. Users must select the category of item they have found, input the item name, description and upload a picture of the item they have found. Users can also input the date, time and place they found the item, but those details are optional. Users must click on the confirmation checkbox before being able to click on the submit button to acknowledge that the report they are making is true and valid and another checkbox is to notify the user to return the item they have found to 'Pos 4: Pos Masjid Sultan Ibrahim UTHM (24 hours) - 074533435.

Report Found Item

Item Category *

--Select Item Category--

Item Name

Enter item name

Item Description

Describe the item in detail

Date Item Found (Optional)

dd----yyyy

Time Item Found (Optional)

--:--:--

Place Item Found (Optional)

Enter place item was found

Upload Item Image *

Choose File No file chosen

I hereby confirm that the information provided is true and valid. Disciplinary action can be taken if a fake complaint is made.

Please return the found item to Pos 4: Pos Masjid Sultan Ibrahim UTHM(24 hours) – 074533435.

Submit Report

Algorithms

Start

1. Validate session and form inputs:

```

if(!isset($_SESSION['id'])) {
    redirect('login.php');
}
if(isset($_POST['report_found_item'])) {
    $item_name = validate($_POST['item_name']);
    $item_category = validate($_POST['item_category']);
    $image = validate($_FILES['image']['name']);
}

```
2. Process image upload and database insertion:

```

if(move_uploaded_file($_FILES['image']['tmp_name'], $target)) {
    $stmt = $conn->prepare("INSERT INTO found_item_report(...)
VALUES(...)");
    if($stmt->affected_rows > 0) {
        $report_id = $conn->insert_id;
    }
}

```
3. Check for matching lost items:

```

$match_stmt = $conn->prepare("SELECT * FROM lost_item_report
WHERE item_category=? AND
item_name=?");
if($result->num_rows > 0) {
    while($match = $result->fetch_assoc()) {
        $notify_stmt = $conn->prepare("INSERT INTO
notifications(message, found_item_id)
VALUES(?, ?)");
        // Assign to all users
        $users_result = $conn->query("SELECT id FROM users");
        while($user = $users_result->fetch_assoc()) {
            $assign_stmt = $conn->prepare("INSERT INTO
user_notifications(...)");
        }
    }
    alert('Notifications sent for matches');
}

```
4. Validate confirmation checkboxes:

```

if(!confirmationCheck.checked) !returnCheck.checked) {
    disable(submitButton);
}

```

End

Figure 6 Report Found Item Page

Figure 7 shows the list of all lost items reported page where all lost items reported will be shown in the table. The table has an action column with a “Found” button. Users can click on the “Found” button if the item they found is similar to the lost item reported by another user. The button will redirect the user to the report found item page where the item category, item name and description will be automatically inputted to reduce the chances of inputting the wrong details as the lost and found item is mainly matched based on the item category and item name. A hint of the button is also showed on the top to indicate if the “Found” button is clickable they can make a report if the item they have found is similar to the lost item reported and if the button is not clickable it indicates the lost item has been found by the owner. There is also a search bar included in this page to help users search for items and they can filter the items based on the report status and sort the reports from newest to oldest, oldest to newest and alphabetical order.

List of All Lost Items Reported

Button Hints:

FOUND - Click this button if this is your found item to claim it

FOUND - The button is disabled because the item has been claimed by it's owner

Search items... Search All Statuses Newest First

ITEM NAME	ITEM CATEGORY	DESCRIPTION	DATE LOST	TIME LOST	PLACE LOST	IMAGE	TIME REPORTED	REPORT STATUS	ACTION
HTML Book	Stationery	Oxford HTML Book	2025-05-20	05:45:00	BT 1, Library		2025-05-28 00:56:45	Item Claimed	FOUND
Camera	Electronics	Black camera	Canon 2025-05-19	17:30:00	Auditorium FSKTM		2025-05-28 00:20:27	Item Claimed	FOUND

Figure 7 List of All Lost Items Reported Page

Figure 8 shows the list of all found items reported page where all found items reported will be shown in the table. The table has an action column with a “Lost” button. Users can click on the “Lost” button if the item they lost is similar to the found item reported by another user. The button will redirect the user to the report lost item page where the item category, item name and description will be automatically inputted to reduce the chances of inputting the wrong details as the lost and found item is mainly matched based on the item category and item name. A hint of the button is also showed on the top to indicate if the “Lost” button is clickable they can make a

report if the item they have lost is similar to the found item reported and if the button is not clickable it indicates the found item has been claimed by the owner or the report is made by the user who is logged in. There is also a search bar included in this page to help users search for items and they can filter the items based on the report status and sort the reports from newest to oldest, oldest to newest and alphabetical order.

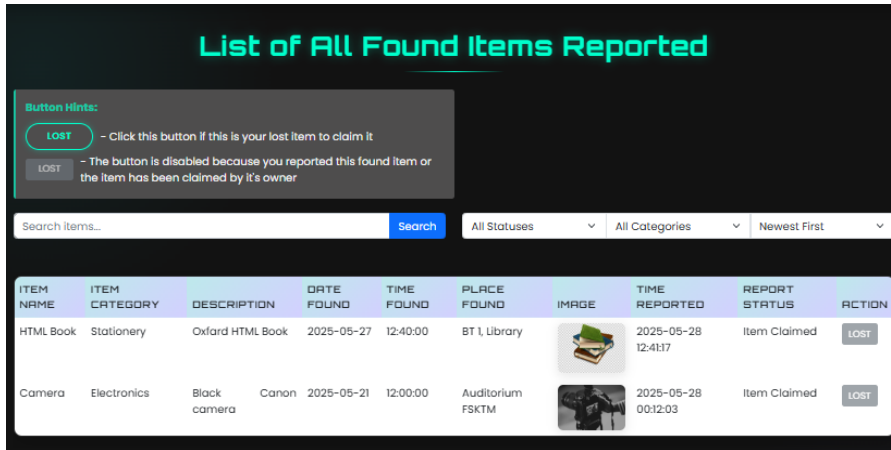


Figure 8 List of All Found Items Reported Page

Figure 9 shows the user notification page. The notifications received by users about the matching items found or any appreciation message will be displayed here. A 'View Item' button is shown under every notification where users will be redirected to the respective view reports page based on the report type which can be lost or found report. Next, users can choose to clear the notification one by one or all at once to maintain a clean notification interface.

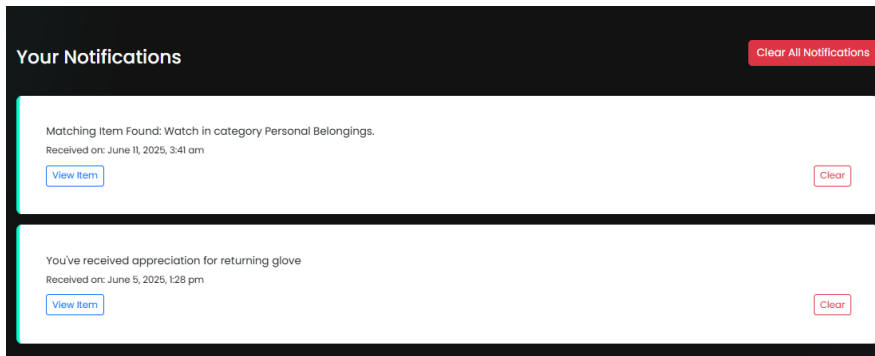


Figure 9 User Notification Page

Figure 10 shows the registration and login page for admin. Admins must input their staff ID, full name, contact number, email address and their preferred password where the password must be at least 8 characters and must contain at least 1 letter, 1 number and 1 special character. Lastly, they must upload their profile picture and click on the "Signup" button to complete the registration. Once the registration is complete, admins can login using their staff ID password to access the admin dashboard. Admins must input their staff ID and password to login into the admin dashboard. A "Forgot Password" link is also available to enable admins to reset their password if they have forgotten it.

Figure 10 Admin Registration and Page

Figure 11 shows the admin dashboard for 'FindItHere' website. The dashboard will show the first 10 reports for lost and found item reports. The dashboard will show the total number of lost and found item reports, user accounts and admin accounts. The sidebar will show the links to the respective pages such as lost item reports, found item reports, users, admins and report statistics. The header will show a search bar to enable admins to search necessary information in the page. The header will also show a bell icon to show the notifications if a new report is made and will redirect admin to the notifications page and lastly a profile icon will be displayed based on the admin profile picture and when clicked it will show link to view profile and logout.

Figure 11 Admin Dashboard Page

Figure 12 shows the view lost item reports page. Admins can view the lost item reports made by users. The table will show the image, item name, time reported and report status. In the action's column, admins can click on the eye icon which will display the complete details of the report including the reporter's details such as their name and contact details. Next, admins can click on the edit icon beside the eye icon to edit the report status which will be "Pending" in default. In the edit popup, admin can also view admin details who receive and return the item and update claimer details when the report status is updated to 'Item Claimed' and lastly admins can delete the report by clicking the trash bin icon. Admins can also sort the reports based on newest report, oldest report, alphabetical order or report status and they can also select the number of reports they would like to view in a page.

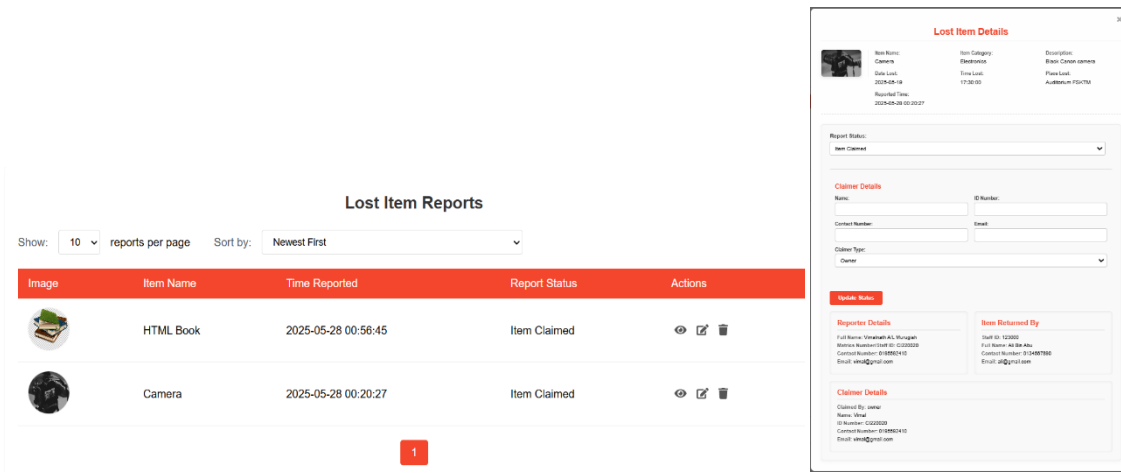


Figure 12 Admin View Lost Item Reports Page

Figure 13 shows the view found item reports page. Admins can view the found item reports made by users. The table will show the image, item name, time reported and report status. In the action's column, admins can click on the eye icon which will display the complete details of the report including the reporter's details such as their name and contact details. Next, admins can click on the edit icon beside the eye icon to edit the report status which will be "Pending" in default. In the edit popup, admin can also view admin details who receive and return the item and update claimer details when the report status is updated to 'Item Claimed' and lastly admins can delete the report by clicking the trash bin icon. An appreciation column with an "Appreciate Finder" button is included in this page where admins can send an appreciation message to the user who found the item and helped in returning the item to its owner. The message will be sent directly to the user who reported about this found item and can be viewed by the user when they login to their account. Admins can also sort the reports based on newest report, oldest report, alphabetical order or report status and they can also select the number of reports they would like to view in a page.

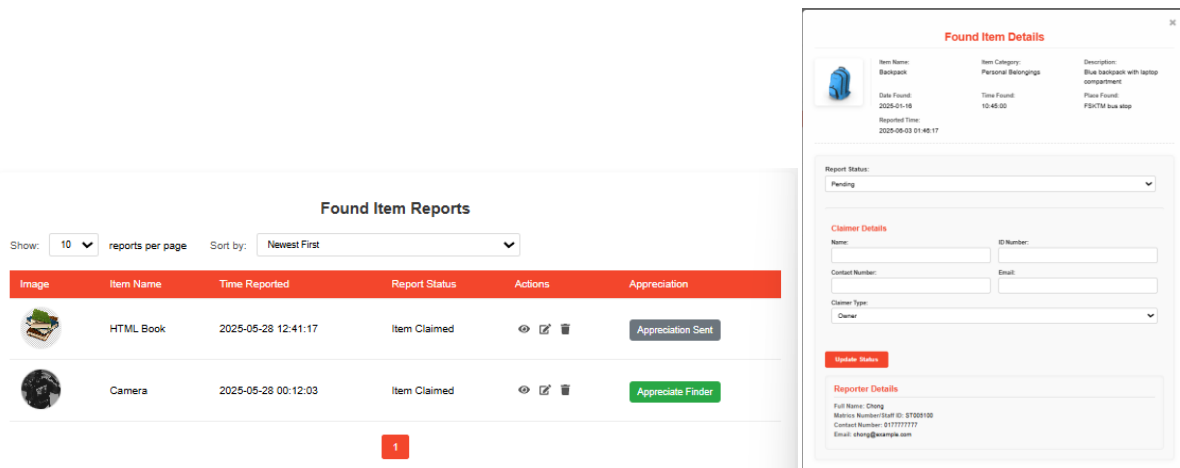


Figure 13 Admin View Found Item Reports Page

Figure 14 shows the report statistics page. In this page, admins can view "Lost or Found Item Reports by Category" where admins can select the report type either lost or found reports, month and year. A pie chart will display the statistics of the item category which are lost or found for that month. Admins can also view the "Total Lost or Found Item Reports" for 1 year in this page. Admins can select the report type either lost or found reports and year. Admins can select the data they would like to view where it can be the total number of reports, total pending, received and claimed reports which will be displayed in a bar graph. Admins can also download these statistics in a PDF document.

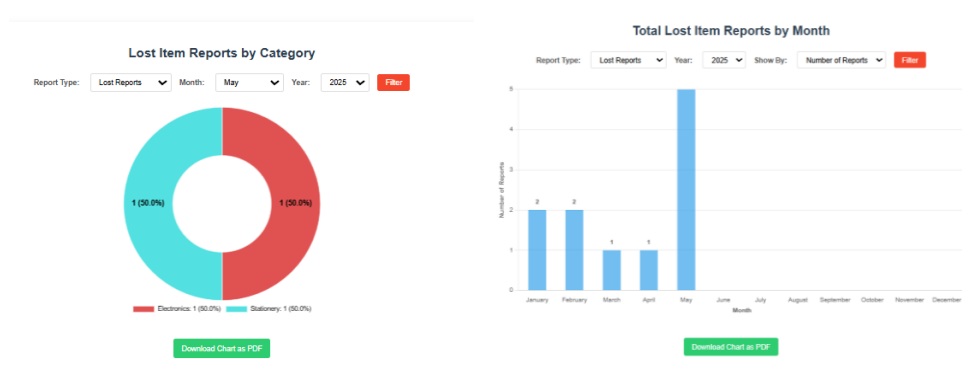


Figure 14 Report Statistics Page

Figure 15 shows the notifications page where admins will be redirected when they click on the bell icon at the homepage. In this page, admins can view the notifications about new reports made by users in this page. Admins can click on the “View Report” button which will redirect to the view reports made based on the report type which can be lost or found report. A “Clear” button is included at every notification where admins can delete the notifications of the reports they have seen or simply clear all the notifications by clicking on the “Clear All Notifications” button.

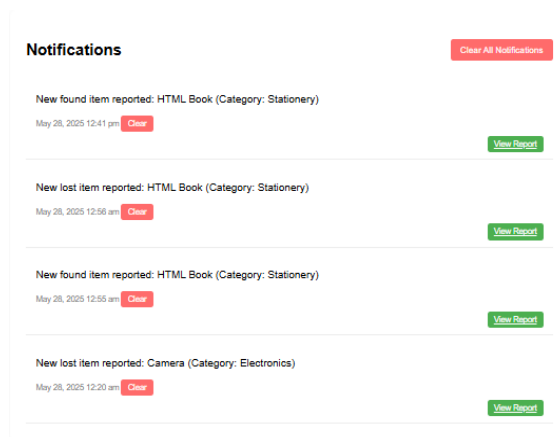


Figure 15 Admin Notification Page

5.2 System Testing

The system must be tested before hosting to ensure it is bug-free and meet its criteria to ensure system performance. The system was tested using a test plan and user acceptability test.

5.2.1 Test Plan

The results of the test plan are showed here. Table 5 shows the functionality test plan result for user module, while Table 6 shows the functionality test plan result for admin module.

Table 5 Functionality Test Plan Result for User Module

Test	Expected Result	Actual Result
User Registration	User can register their account successfully.	Pass
User Login	User login to the website successfully using the correct login credentials and redirected to the homepage.	Pass
Submit Lost Item Report	User can make a report about a lost item successfully.	Pass
Submit Found Item Report	User can make a report about a found item successfully.	Pass
View Reports	The reports made by user are correctly showed.	Pass

Receive Notification for a Matching Item	User receives notification when a similar item is reported lost and found.	Pass
Profile Update	User can successfully update their email and contact number in the user profile page.	Pass
Navigation Between Pages	Pages load correctly and consistently when user switch between pages using the menus in the header.	Pass
Receive Appreciation	User who reports about a found item receives an appreciation from the admin when the found item is successfully returned to the owner who lost it.	Pass

Table 6 *Functionality Test Plan Result for Admin Module*

Test	Expected Result	Actual Result
Admin Registration	Admin can register their account successfully.	Pass
Admin Login	Admin login to the website successfully using the correct login credentials and redirected to the dashboard.	Pass
View Reports	The reports made by users are correctly showed when admin clicks on the eye icon.	Pass
Update Report Status	Admin can update the report status by clicking the edit icon where the status updates successfully.	Pass
Receive Notification for New Report	Admin receives notification when a new report is made by users.	Pass
View and Download Report Statistics	Admin can view the item categories often lost and found in a pie chart and a bar chart showing total number of lost and found reports made every month in a year and the charts can be downloaded as PDF files.	Pass
Profile Update	Admin can successfully update their email and contact number in the user profile page.	Pass
Navigation Between Pages	Pages load correctly and consistently when user switch between pages using the menus in the header.	Pass

5.2.2 User Acceptance Test Results for User Module

The results of the user acceptance test for the user module are shown in Appendix C. This test was conducted to gather user's experience while using the system based on the usability, functionality, and user satisfaction with the system. The test was conducted through Google Form and the target users are the students and staff of UTHM. User satisfaction is rated on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree).

5.2.3 User Acceptance Test Results for Admin Module

The results of the user acceptance test for the admin module are shown in Appendix D. This test was conducted to gather admin's experience while using the system based on the system's functionality, ease of use, report management capabilities, and overall performance from an admin perspective. The test was conducted through Google Form and the target users are the students and staff of UTHM. User satisfaction is rated on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree).

6. Conclusion

In conclusion, the 'FindItHere' project is an effective method to deal with the difficulties in the UTHM campus's lost and found items management system. Web technologies like PHP, JavaScript, and MySQL are used together with Agile methodology to create a centralised platform that allows users to report lost or found items, receive notifications, and track the status of complaints. This project was completed using the project methodology that required detailed system designing, requirement, and module development along with the regular testing to make sure that all the components met with the user demands and system objectives.

The project outcome has shown great results in terms of better recovery procedures of items, better interaction between the users and administrators, and positive response on user acceptance testing (UAT). The addition of pie and bar charts to handle administrative statistics makes the system more practical and easier to use. Overall, the system has achieved its main set of goals as it is offered user-friendly, efficient, and secure system

that was designed to benefit the UTHM community. Possible future enhancements include expansion of the system functionality, adding image-based matching, and implementing the system in live usage to facilitate its use across campus.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

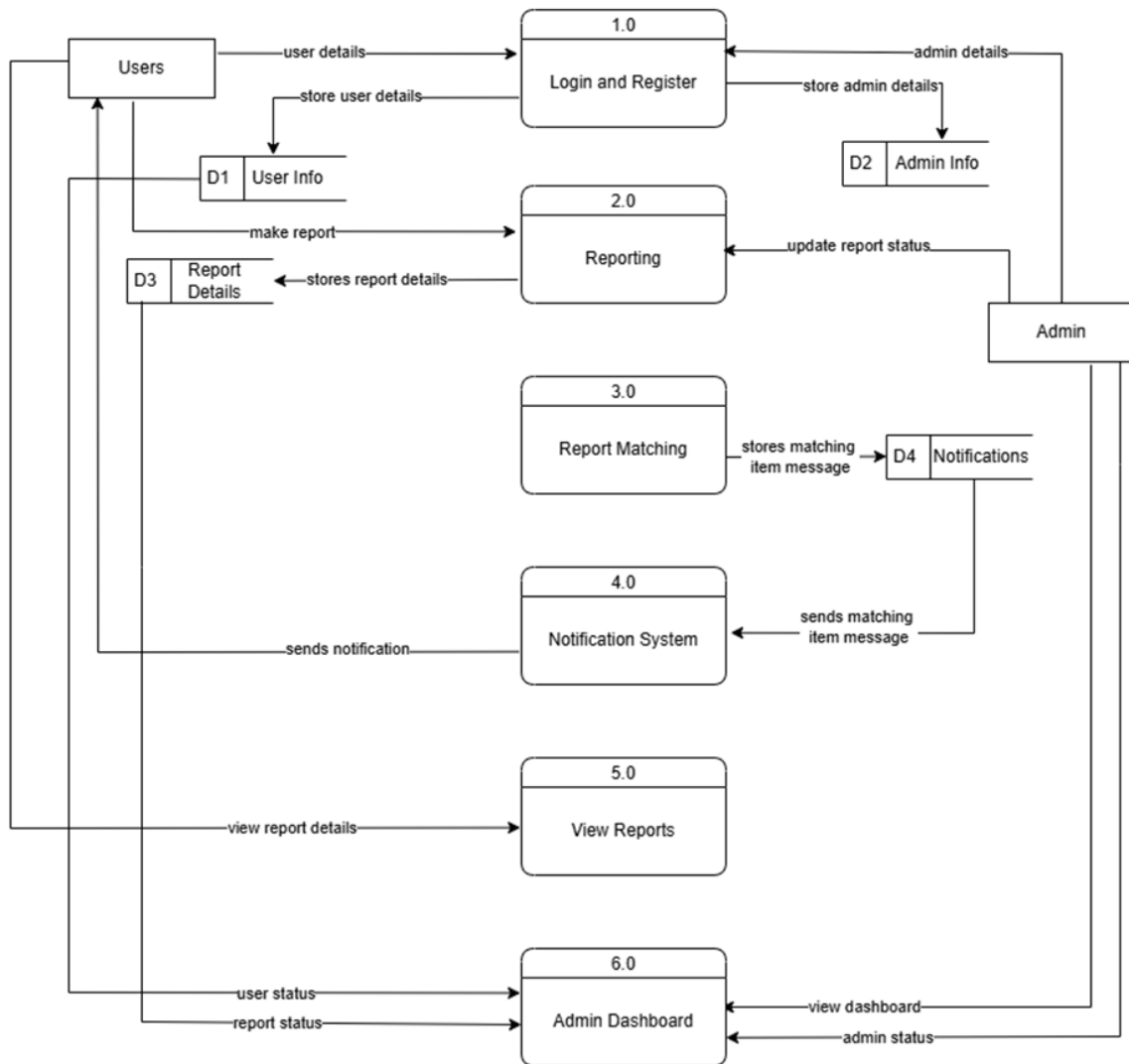
This journal requires that all authors take public responsibility for the content of the work submitted for review. The contributions of all authors must be described in the following manner:

*The authors confirm contribution to the paper as follows: **study conception and design:** Vimalnath Murugiah, Rosmamalmi Mat Nawi; **data collection:** Vimalnath Murugiah; **analysis and interpretation of results:** Vimalnath Murugiah, Rosmamalmi Mat Nawi; **draft manuscript preparation:** Vimalnath Murugiah, Rosmamalmi Mat Nawi. All authors reviewed the results and approved the final version of the manuscript.*

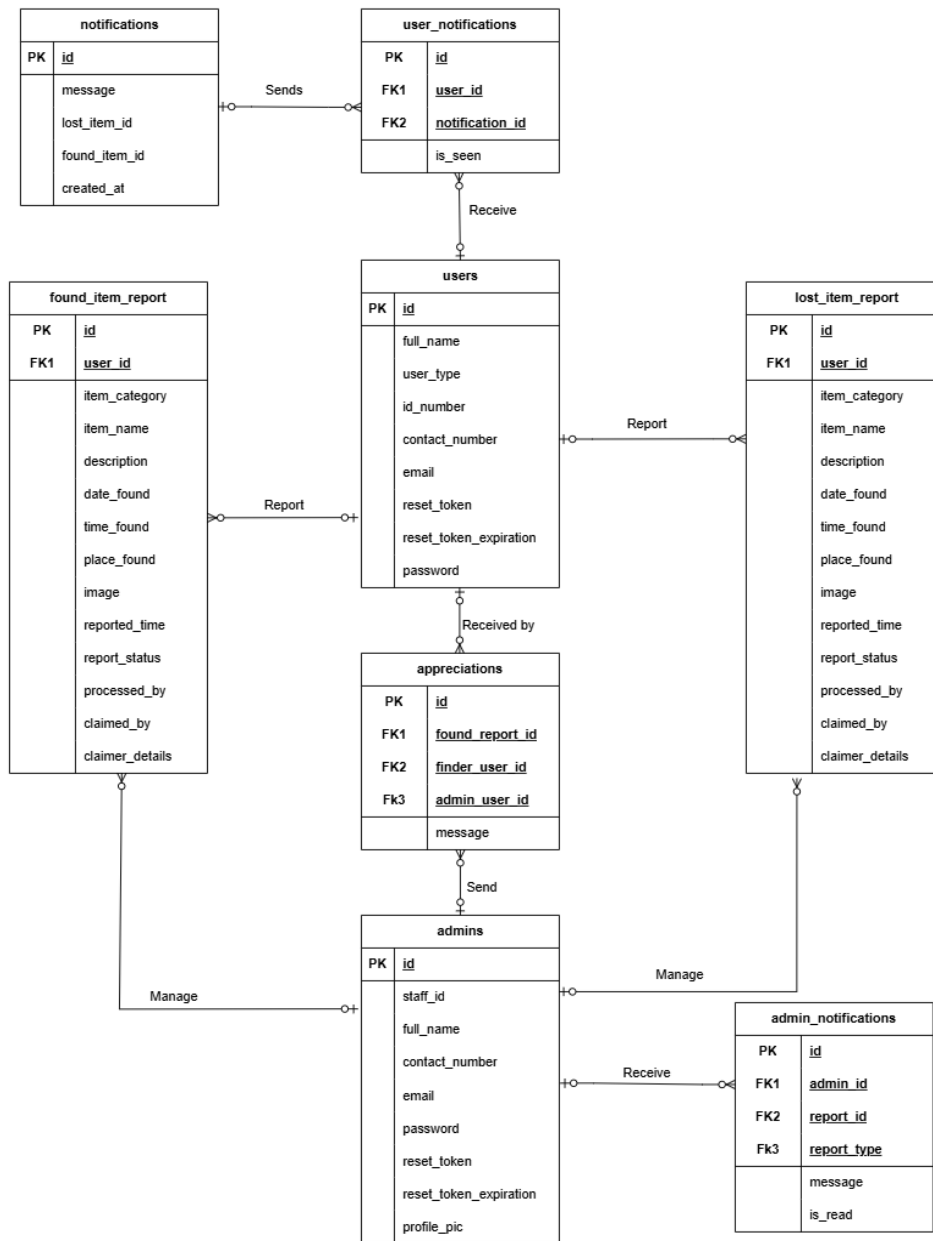
References

- [1] Wilson, D. C. (2023). AppalLOCATE: A Lost and Found Solution (Doctoral dissertation, Appalachian State University).
- [2] Suchana, K., Alam, S. M. E., Meem, A. T., Turjo, M. D., & Khan, M. M. (2021). Development of User-Friendly Web-Based Lost and Found System. *Journal of Software Engineering and Applications*, 14(10), 575-590.
- [3] Smith, J., Doe, A., & Johnson, R. (2021). The impact of digital solutions on lost and found item recovery rates: A comparative study. **Journal of Community Management**, 15(3), 45-60.
- [4] Zhou, M., Fung, I., Yang, L., Wan, N., Di, K., & Wang, T. (2024). LostNet: A smart way for lost and find. *PloS one*, 19(10), e0310998.
- [5] Razi, A. A. and Putra, R. P. (2020). The hooked model as communication strategy of "kembaliin" app as an information media for handling lost and found.
- [6] Schmitt, A. and Hörner, S. (2021). Systematic literature review – improving business processes by implementing agile. *Business Process Management Journal*, 27(3), 868-882.
- [7] Mishra, A., & Alzoubi, Y. I. (2023). Structured software development versus agile software development: a comparative analysis. *International Journal of System Assurance Engineering and Management*, 14(4), 1504-1522.
- [8] Malaysia Airports. *Lost and Found Services*. Available: <https://airports.malaysiaairports.com.my/en/klia1/airtravel/services/lost-and-found>
- [9] Lost-Found.org. *Report Lost Item*. Available: <https://lost-found.org/report/>
- [10] Troov. *Lost Items Service*. Available: <https://troov.com/en/lost>

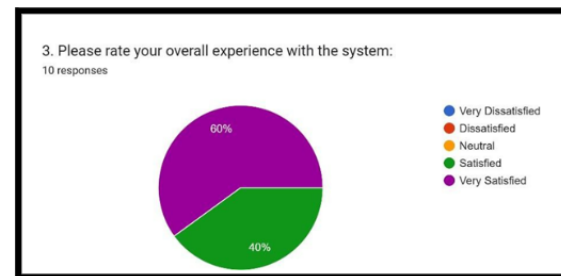
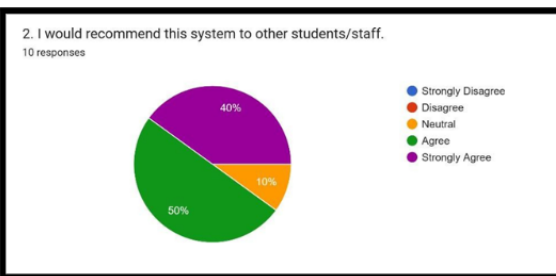
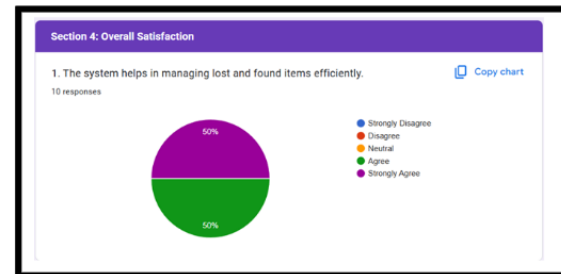
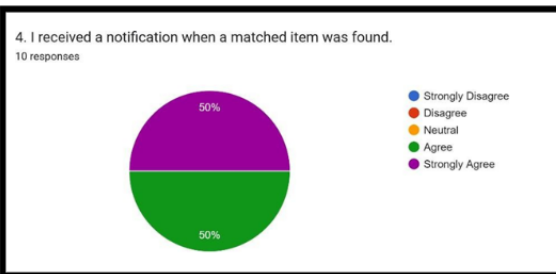
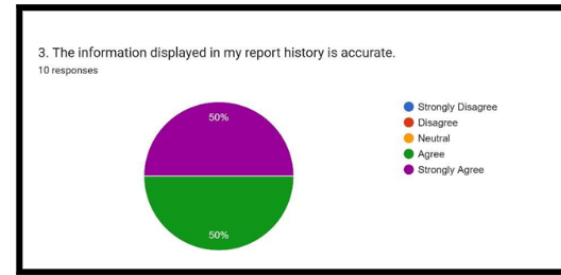
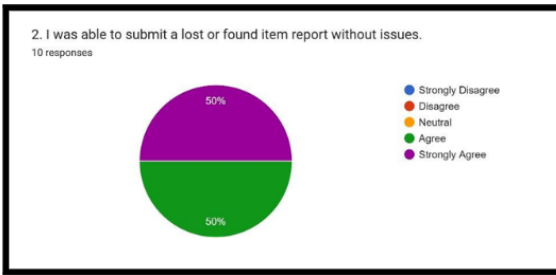
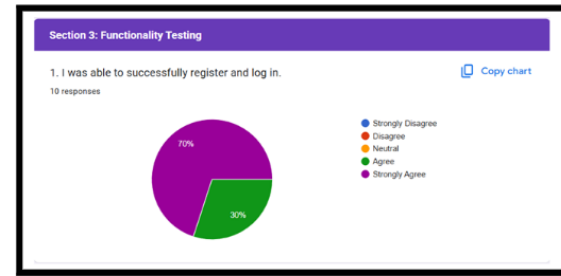
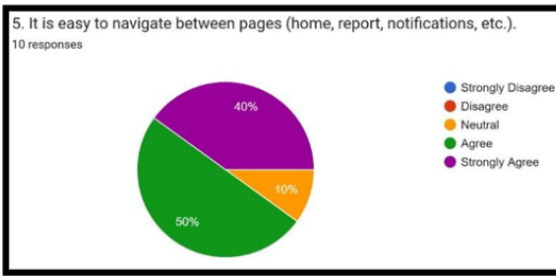
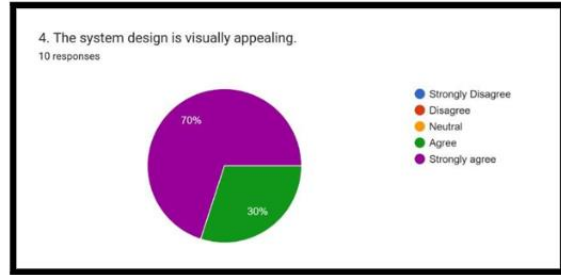
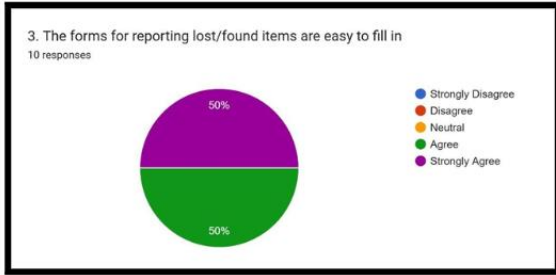
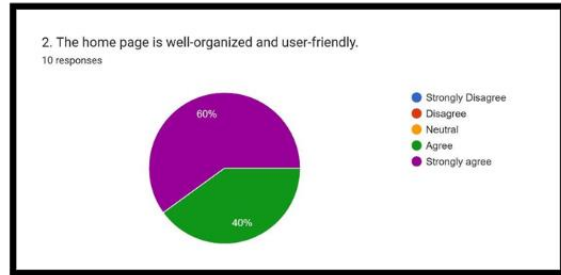
Appendix A: DFD Level 0



Appendix B: Entity-Relationship Diagram (ERD)



Appendix C: User Acceptance Test Result for Users Side



Appendix D: User Acceptance Test Result for Admin Side

