# Project Report

Digital Lost & Found System

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**01**

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# Chapter 01

# 1 Introduction

## 1.1 Introduction

In any educational setting, the likelihood of misplacing or losing personal belongings is probable, particularly in large university campuses with thousands of students and staff interacting daily. Items like ID cards, wallets, USB drives, water bottles, books, mobile phones, and even laptops are frequently categorized as lost. At the same time, many people with good intentions who may have found lost items are somewhat hesitant to return the item as there is no formal way in which to get the advantage sending it back to the rightful owner etc.

Historically the methods employed by universities to process lost and found have relied on either manual lost and found desks or physical notice boards. Both methods potentially have merit, but they are also met with limitations they rely heavily on manual recording, human memory, and, mostly, word-of-mouth and proposed activity is encouraged through the interface. The time to modify this is now as technology allows students and university staff to have speedy and timely contactless exchanges.

This project proposes a web based lost and Found Management System establishing a system for users to report lost property, advertise found items, and track updates through a safe and

organized online platform. The system is intended to be used only in a university environment for ease, organizational and community engagement. All students and staff can use the system, securely logging in with their own university credentials, therefore establishing identity, and responsibility. An admin will monitor the submissions, validate claims, and assist in matching lost items with found ones.

### 1.1 Project Background

Historically, campuses had a model of small help desks or a “lost item book” in reception or security. These solutions slow, difficult to access, and rarely perform to avoid losing data. There is no real searching or matching, or notifying system. Often lost items go unclaimed until they are ultimately discarded or forgotten.

With the rapid adoption of digital technology in every aspect of life from online class registration to e-learning portals, it is only fitting to move lost and found systems online.

An online platform can help users report lost items in a manner that is easy and streamlined, helping items return quickly and accurately.

By adopting this application, the university is taking a step forward in the arena of digital transformation, contributing to improved services for students and staff, while being transparent and accountable.

## 1.2 Problem in Brief.

At universities or educational institutions, students and staff often misplace personal items such as ID cards, USB drives, mobile phones, water bottles, books, and other personal items. When individuals find themselves in a situation and cannot locate an item, they typically use traditional methods of communicating such as notifying the security guards, placing notices or

postings on campus boards, and asking around campus. These measures are often inefficient, lack organisation, and often take time.

Many times, the item that was found is reported, the individual who found it has no clue on how or where to report it, and the person who lost has no clue where to go to check. As a result, many good or valuable items are unclaimed or never returned to the rightful owner. This results in unnecessary stress, anxiety, uncertainty, and loss to the university community.

There is not a proper digital record or centralized system to register found items, and then compare it to a list of items that were reported lost. Even if they create and keep a log of lost items, manually, over time it becomes cumbersome and often its difficult to look up, update, or verify information related to the item when staff change. The system doesn't notify staff/students when they are matched to any found items, so there is no information communicated to staff or students when their items are located.

The lack of a cohesive platform means that communication between the person who found the item and the person who lost the item is less effective, minimizing the probability of an efficient resolution to recovering the lost item. Subsequently, as student numbers grow and campus size continues to expand, the demand for a smart, digital approach has never been more pressing.

Clearly, there is a gap in the current practice in an educational institution's lost and found process. A digital means for addressing this gap would provide a simplified solution for students and staff to report lost items, upload notices of found items, and post updates in one digital place. This would make the lost and found process quicker, safer, and more efficient for anyone walking about campus.

## 1.3 Objectives

The goal of this project is to create a straightforward Digital Lost and Found Web Application for university students and staff, to allow them use the web-based platform to report lost objects, report found objects, and track records online. This will be a centralized service to cut down on the main stress point when an item is misplaced on campus.

The objectives are:

1. To provide a simple platform for users to report lost items.

- Users will enter the item name, description, where it was lost, and date it was lost.

2. To allow users to add information about found items.

- Anyone who finds an item will be able to upload the details of the object and accompanying images, to allow the item owner to identify the object as theirs.

3. To allow for lost and found records to be matched either automatically or by users.

- Users will be able to help get possibilities of matches between their lost item and posted found items, by filtering by category, date, or location.

4. To reduce the manual workload and time associated with the current process. - This process should enable users to take care of the lost and found items faster and with more organization than via notice boards or word of mouth.

5. To inform users of matches or newly posted items.

- Notify or alert users of any items that match their post are added to the system.

## 1.4 Proposed Solution

The proposed solution is a web-based Lost and Found application specifically designed for university students and staff. The Lost and Found application will act as a centralized location where users can report lost items and post found items safely and easily.

The Lost and Found application will offer:

A simple form to submit lost or found items along with who found or lost it, date, location, description, and image.

A way to create evidence of lost and found items in the case of a dispute.

A matching method to find possible matches of lost and found items.

Users will receive a notification when a match is made.

A login system with authentication so only staff and students will be able to access the system.

Available for both mobile and desktop so that users can access the page from anywhere at any time.

This solution will create efficiencies in processing lost and found items, minimize manual effort, and give items the best chance of being returned quickly and correctly

## 1.4 Summary

The Digital Lost and Found Web Application is designed to upgrade the antiquated manual process of reporting and tracking lost items within educational institutions. It provides a simple, secure, and user-friendly interface with features such as intelligent matching, notifications in real time, and a singular reporting system. This system minimizes the amount of time to report and recover lost items. The Digital Lost and Found adds to the ease of communication, promotes accountability, and can streamline the recovery of someone's valuable items, thus providing a modern solution to meet the contemporary needs of today's campus.

# Chapter 02

## 2 Analysis & Design

## 2.1 Introduction

This section of the project details how the system is planned and designed. Initially we investigate the problems inherent in the current mode of reporting lost and found articles. Second, we analyse what the users (students and staff) needed.

Once we have defined the problem, we can prepare to design the system. This includes building the design for the appearance and feel of the website, how the users will interact with it, how the data will be moving around inside the system.

At this stage of the project, we will be able to ensure that the system is clear, easy to use, and working appropriately before we even begin to code the actual website

# Chapter 03

# 3 Project Description

## 3.1 Introduction

The Digital Lost and Found Web Application is a system that has been designed to assist students and staff at a university or an educational institution to easily report and locate lost items online. People often lose items like ID cards, books, flash drives, wallets and mobile phones on campus. The problem arises when there is no proper system to find these lost items. People usually rely on word of mouth, bulletin boards or people they know, which takes time and is often not successful.

This web-based application offers a simple and easy-to-use platform that allows any user report a lost item after entering the item name, description, date and location. A discoverer of an item can also post the details of their found item with photos, so the owner can identify it and reclaim it. The system will automatically notify the user when it finds a potential lost item match based on the lost and found item details. The system will provide matching based on information provided by both parties.

The application contains user registration and user login for security purposes, limiting access and use of the system to students and staff only. The application will also save a record of all found and lost items so that they can be tracked in the future. The application is designed to be accessed on either a computer or mobile device so that users can have access at all times while on campus.

In conclusion, this project aims to reduce the time and confusion associated with lost and found duties that are traditionally done face-to-face, by providing a smart, digital solution that is quick, safe and easy to use for all users on-campus.

# Chapter 04

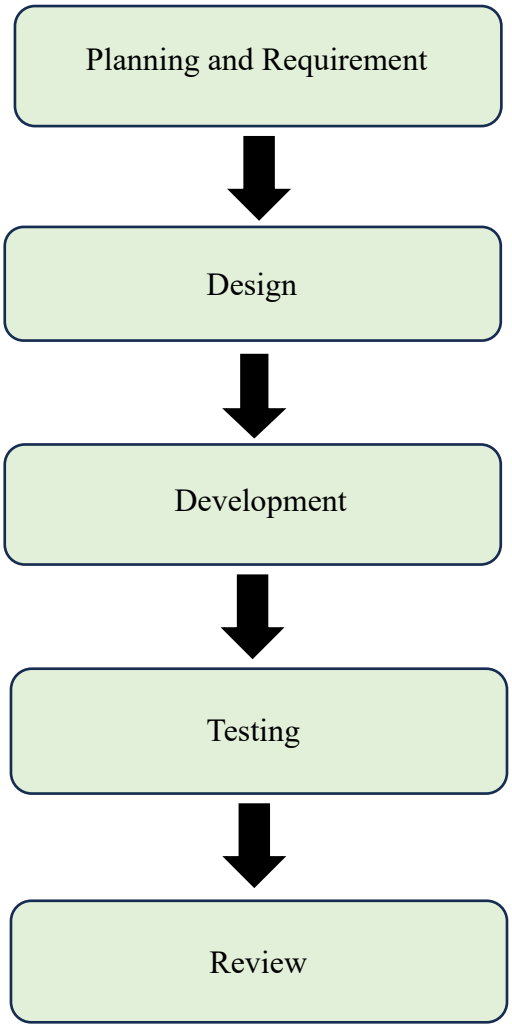
# 4 Methodology

## 4.1 Introduction

Methodology means the process or steps we follow to design the project in a proper way. For this project we chose the Agile model, as it provides a way to build the system in small parts, test early, and adapt to changes rapidly.

Agile is adaptive, which means we can be flexible and adapt and improve the system in real time during development. The Agile methodology focuses more on team-based collaboration, continuous testing, and quickly adopting an operational system from the start of the project. In fact, the Agile methodology is very suitable for small academic projects like a Digital Lost and Found System.

Process Flow:



# Chapter 05

# 5 Resources

## 5.1 Introduction

This section lists the key resources consulted during the development of the project, which utilized Python as the core programming language, MySQL for database management, and the Kivy library for building the graphical user interface.

**Tutorials & Documentation**

1. **Using MySQL with Kivy – Python Kivy GUI Tutorial** *KivyCoder* https://kivycoder.com/using-mysql-database-with-kivy-python-kivy-gui-tutorial-56/ A comprehensive guide to integrating MySQL with Kivy, including database setup, connector installation, and GUI development.
2. **Login Form using Python, Kivy GUI, and MySQL Connector** *Achraf Othman* https://achrafothman.net/site/login-form-using-python-and-kivy-gui-and-mysql-connector-tutorial/ Tutorial for building a secure login system using Kivy and MySQL, with screen management and user authentication.

**Sample Projects**

3. **Blog Application using Python, Kivy, and MySQL** *GitHub – Suwadith* https://github.com/Suwadith/Blog-Application-Python-Kivy-MySQL A full-featured blogging application demonstrating the use of Kivy for UI and MySQL for backend storage.
4. **Python Kivy Projects – Pythonista Planet** https://pythonistaplanet.com/python-kivy-projects/ A curated list of Kivy-based projects ranging from beginner to advanced, useful for understanding practical applications.

**Libraries & Tools**

5. **KivyMD – Material Design for Kivy** https://github.com/kivymd/KivyMD An extension of the Kivy framework that provides Material Design components for enhanced UI/UX.
6. **MySQL Connector/Python – Official Documentation** https://dev.mysql.com/doc/connector-python/en/ Official documentation for the MySQL Connector used to connect Python applications to MySQL databases

## Chapter 06

# 6 Implementation

## 6.1 Introduction

The implementation phase is the most important part of the software development lifecycle. During this phase everything that was documented up to this phase gets built into a working application. We write code to create the database structure, read and write to the databases, structure the API layer, integrate the front-end and back-end user interfaces, and test how everything works together to give the end user - in this case students and staff - the ability to report lost items, view found items, and manage records efficiently and securely.

## 6.2 The important matters involved

Below are the key steps/modules involved with the implementation:

**1. Database Setup**

Tables are to be created for users, lost items, found items, and admin records.

All data will be managed using MySQL.

In setting up the database tables and relationships, look for opportunities to use foreign keys connection between tables.

**2. Front End Development**

After Database setup, the next step is to develop the user interface using HTML, CSS, and JavaScript.

To ensure that the forms are user-friendly for reporting lost and found items and for retrieving them, it is important to consider navigation modules that can be used.

Responsive design including desktop and mobile design support for accessing the user interface.

**3. Back End Development**

Write PHP scripts for:

User login

User registration

Submitting lost / found item reports

Admin managing posts

Connecting the front end to the MySQL database setup above.

**4. CRUD Operations**

Create: Users will create lost or found item records.

Read: All users will have access to view the items that are posted.

Update: Admin can make any necessary updates to the status of item (returned or not).

Delete: Admin can delete duplicate or fake records.

**5. Authentication and Security**

Username and password log in - each user will create their own password.

Validation of all inputs to protect against SQL injections.

Admin panel will have restricted access.

**6. Testing**

Unit testing on each of the modules.

Integration testing on the full flow: login → post item → retrieve item.

UAT (User Acceptance Testing) with feedback.

**7. Deployment**

Deploy on localhost using XAMPP software.

May also host on online hosting platform (e.g. on github) for open access in real-time.

## 6.3 Summary

The implementation process brought together planned modules of the proposed system; it brought the proposed system into a real live, functional web application with secure login via other measures and an easy to use interface, with seamless functionality in the Digital Lost and Found System, was implemented using PHP, MySQL, HTML, CSS.

**Chapter 07**

# 7 Our Approach

## 7.1 Introduction

The focus of our approach emphasizes building a user-friendly Digital Lost and Found System for university students and staff. Our goal is to assist users in easily reporting and tracking lost or found items by utilizing a web-based platform. In constructing the system, we have leveraged CRUD operations and added cutting-edge web technologies to support efficiency and reliability.

## 7.2 Planning

We utilized an Agile methodology to change the project into multiple clear phases, as depicted below:

Week 1 - Requirement-gathering and Design

Week 2 - Front-end and back-end development

Week 3 - Module Integration and database connection

Week 4 - Testing, bug fixes and presentation

At each week, we had an end goal to simply have progress and completion on-time.

## 7.3 Objective Achieved

Overall, our focus has been to create a central database to manage lost items and associated dealings. More specifically, users can:

Report lost items

Post found items

View and Search records

The Administrator can verify and manage posts

Overall, this system improves communication and resulted in a better opportunity for item recovery.

## 7.4 Summary

In all, our approach was practical, tightly structured, and targeted a clearly defined problem; the university problem of lost items. By applying web technologies and reasonable planning, we built a functional Digital Lost and Found System that answered the user need and added value to campus life.

# Chapter 08

# 8 Conclusion and Further Work

## 8.1 Introduction

As the necessity for organized and effective lost and found management continues to develop in university settings, our project – the Digital Lost and Found System – was kicked-off to address the shortcomings of standard approaches. Lost and found management typically occurs through physical notice boards or verbal communication that can leave room for misunderstandings, mismanagement and unreturned items.

Our project focused on changing this process by offering a digital solution that, first of all, allows staff and students to easily report lost or found items, review the related information and follow the process of retrieving their items. The system was designed to be as clear, user-friendly and functional as possible so that anyone, even those with no technical capabilities, could follow and enjoy using it.

## 8.2 Conclusion and Further Work

The Digital Lost and Found System has successfully met the project objectives. The system contains the following main elements:

- User registration and login

- Post and view lost/found items

- Admin dashboard to manage records

- Search functionality to locate items quickly

These components create a centralized location where records of lost and found items can be accessed and managed easily. The fast and efficient delivery of lost and found data through digital operation minimizes the chances of unclaimed items due to ineffectiveness and legacy methods of record keeping.

Nonetheless, the following areas have been recognized as opportunities for improvement and future development.

**1. Photo upload and item image preview**

An excellent improvement will be to allow users to upload photos of the item which will streamline the item identification process and expedite returns.

**2. Notification System**

Implement alerts, via email or SMS, to notify users there is an item matching their description found/verified.

**3. Matching Algorithm (AI-based)**

Integrate intelligent matching which would compare item descriptions, keywords or images, and automatically suggest match candidates between lost and found postings.

**4. Mobile Application Version**

Create a mobile App to improve users access to the system, as well as allow for on-the-go functionality!

**5. Language Options**

Include language options, languages such as Tamil, Sinhala, etc. would ensure a much larger user base and reach more demographics!

## 8.3 Summary

In conclusion, the Digital Lost and Found System offers a trusted and efficient mechanism for reclaiming lost items at a university. The project successfully exemplifies how a straightforward web-based solution can eliminate the headache and inconvenience of all traditional lost and found practices.

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