kITa- DEVELOPMENT OF AN ANDROID-BASED LOST AND FOUND SYSTEM FOR CAVITE STATE UNIVERSITY

Rationale/ Introduction

A lost and found system manages and tracks misplaced belongings, ensuring their secure storage until reclaimed. At Cavite State University (CvSU), the University Civil Security Services Office currently handles lost and found items manually, relying on paper logs and inperson reporting. This process is inefficient, time-consuming, and disorganized, causing delays in reuniting items with their owners. Students, faculty, staff, and visitors frequently face difficulties due to misplaced belongings.

The need for an improved system arises from key issues identified through surveys and interviews: manual data entry leading to errors, inconsistent record-sharing across departments, and the absence of a centralized database. These inefficiencies hinder effective tracking and management, making it difficult to monitor lost and found items systematically. Additionally, data security and accountability concerns further highlight the risks of misplaced or improperly claimed items.

Lost items can impact students' academic performance, cause financial burdens, and create stress. Survey results show that 54.1% of employees struggle to locate lost items, while 60% of students experience communication issues with the current system. Addressing these challenges requires a more efficient and secure lost and found management system to enhance operations, protect belongings, and improve trust within the university community.

Significance of the Study

This study is essential in improving Cavite State University's (CvSU) lost and found management system by addressing inefficiencies in the current manual process. By developing a more efficient and centralized system, this study aims to enhance the security, accuracy, and accessibility of lost and found records, ultimately benefiting students, faculty, staff, and visitors.

For students, the proposed system will minimize academic disruptions and financial burdens caused by misplaced belongings. Faculty and staff will experience a more organized and reliable process, reducing the time spent managing lost items. The University Civil Security Services Office will benefit from streamlined operations, improved data tracking, and enhanced accountability, ensuring that lost items are properly recorded and returned to their rightful owners.

Moreover, this study contributes to CvSU's commitment to digital transformation by integrating modern solutions to improve campus services. Implementing a structured and technology-driven approach will not only improve operational efficiency but also strengthen trust within the university community. Ultimately, this research serves as a model for other academic institutions seeking to modernize their lost and found management systems.

Scope and Limitations of the Study

This study focuses on developing the "kITa" Android-based application and an administrative website to improve the lost and found management system at Cavite State University (CvSU). It aims to identify issues with the current manual process through interviews and surveys, analyze the collected data using fishbone diagrams, and design a system with key features such as account management, incident reporting, item information display, validation, and real-time communication.

The study includes the development of a mobile application for Android and a web portal, with system testing conducted on Android devices and PCs. The system will be evaluated based on performance, security, reliability, and maintainability using ISO 25010 quality attributes. A deployment and implementation plan will also be prepared. However, the study is limited to CvSU's campus, with the mobile application developed exclusively for Android devices and no immediate plans for expansion to other platforms. Testing will be done on a limited set of devices, and integration with other university software or databases beyond lost and found management is outside the scope. While user feedback will be collected for system evaluation, the study's results may not be fully applicable to other institutions with different needs or resources. Additionally, long-term training and maintenance may be addressed in future initiatives.

Objectives of the Study

This study aims to develop the "kITa" Android-based application and an administrative website to improve lost and found management at CvSU. Specifically, it seeks to:

1. Identify issues in the current lost and found system through research methods such as interviews and surveys.
2. Analyze collected data using fishbone diagrams.
3. Design a system with key features, including:

    - **Account Management Module** – Three access levels: Admin (full control), Security Moderator (manages reports), and Users (students, faculty, staff).
    - **Information Module** – Allows users to view and claim lost items, search reports, and access a data-driven dashboard.
    - **Incident Report Module** – Enables users to report lost or found items, managed by administrators and security personnel.
    - **Validation Module** – Ensures accurate claims and cross-matches reported items.
    - **Communication Module** – Provides real-time notifications and direct messaging.

4. Develop the kITa mobile application and a web-based portal using Java/Kotlin for Android and HTML/CSS/JavaScript for the web.
5. Conduct comprehensive system testing across Android devices and PCs.
6. Evaluate the system using ISO 25010 quality attributes for performance, security, reliability, and maintainability.
7. Prepare a system deployment and implementation plan.

By addressing inefficiencies and enhancing security, the kITa system will provide a more organized and user-friendly lost and found management service for the CvSU community.

Expected Outputs

The expected output of this study is the successful development and implementation of the "kITa" lost and found management system at Cavite State University (CvSU), which will significantly improve the efficiency and organization of the current manual process. The system will include key features such as a mobile Android application and a web-based

administrative portal, allowing users to easily report, search, and claim lost items. The application will provide real-time notifications, direct messaging, and ensure accurate item validation through the Validation Module. Administrators and security personnel will benefit from a streamlined process for managing incident reports and tracking items through a centralized database.

The system is expected to reduce delays and errors in item retrieval, improve communication between users and administrators, and enhance security and accountability in managing lost and found items. Comprehensive system testing will ensure that the mobile application and web portal function smoothly across Android devices and PCs. The final output will also include a detailed deployment and implementation plan to guide the system's rollout at CvSU. Additionally, the system will be evaluated for performance, security, reliability, and maintainability based on ISO 25010 quality attributes, ensuring that it meets the needs of the CvSU community.

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