

AUFound: Retrieval of Misplaced Personal Belongings Through Mobile Application and Web-Based Management System Designed for Angeles University Foundation

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Abstract

Individuals are always concerned when they lose their belongings and searching for the items is quite challenging and difficult, especially for the students. Notices concerning missing items are often put on notice boards in each department, but due of the constant updating of notes on the board, it does not last long, leading them to disregard it. With the advanced technology, system about lost and found can help with these kinds of issues by tracking and managing its records. To gather the effectivity of the AUFound system, students and admins were given a survey with the use of 7-Point Likert Scale. Following an analysis of the collected data and the survey results, it is concluded that the system will greatly benefit the locale by bringing awareness, give an accurate data and enhance the manual system.

Keywords

lost and found; reporting; retrieval; personal belongings; lost items

1. Introduction

Behind this project, the researchers had a vision of improving the opportunities. The system will be called “AUFound,” which includes the management and tracking of missing items – or most commonly known as the lost and found system. The primary feature of the mobile application is to fill out the report form, wherein the students will answer the indicated fields. On the other hand, the Website includes the list of all items that were Claimed, Unclaimed, Due, Donated, and Search Filter, which will be handled by the administrators. Forgetfulness is very popular, with occasionally lapse in memory being usual at every age (Harvard Publishing School, 2021). With the different strategies of finding the lost or misplaced items, not everybody has the confidence and patience to do it. A lot of people who are staying at the campus often lose their valuable properties too, such as phones, wallet, books, and other things; and it seems complicated and challenging to find them because of how big the university is – this is similar to Angeles University Foundation, which always happens up until now. Strategies of finding the lost or misplaced items, not everybody has the confidence and patience to do it. A lot of people who are staying at the campus often lose their valuable properties too, such as phones, wallet, books, and other things; and it seems complicated and challenging to find them because of how big the university is – this is similar to Angeles University Foundation, which always happens up until now. Information about the lost items is normally posted in each department on the AUF school boards. The notes exist in there, however, since the posts on the board are constantly changing and updating, it allows the students to ignore in this regard. With the advanced technology and services, we can avoid these kinds of situations, including:

- **Limited information of the student regarding the lost and found at the said locale.** Some items are left unattended until such point no one will claim it, this is why the OSAFA is giving the rightful owner a span of whole school year to retrieved the said lost item, or else it will be donated to the Center for Christian Formation and Praxis, which is commonly known as CCFP.

- **Difficulty and time consuming in validation.** The information is prone to errors because they use a manual system which requires written documentation.
- **Difficulty in documenting the lost and found reports** (claimed, unclaimed, and donated items). The written texts from the OSAFA Logbook are inconsistent since the administrators manually listing the reported items. Additionally, the table that is needed – based from the given labels such as the name of an item, date, and location, doesn't fit in one page. This means that the admin requires to draw another set of label or table.
- **Unsecured data.** Since the information contains sensitive data and it's recorded manually, there's possibility that the logbook can be misplaced. Furthermore, the written data can be seen by other people and they can easily identify the information in an instant.

1.1 Objectives

The general objective of the system aims to enhance the connection between the students and the OSAFA administrators with the use of web and mobile application in which it will serve as a reminder and preparedness regarding the reports about misplaced belongings of the locale.

1. The system aims to enhance the manual-based records management of the OSAFA (Office of Student Affairs and Financial Aid) and equip it into web-based system.
2. To develop a mobile application for other mobile users to receive notification. Help the organization in decision-making by filtering the reports, in which it is already sorted accordingly, that is available in web application. Provides accurate and more secured data.

2. Literature Review

A. Difficulty in Losing of Items

Ahmad et. al (2015) stated that as the twenty-first century approaches, living seems faster, people become stressful and busy. When the life of each individual gets more luxurious, it creates pressure to push and work harder. As a consequence, they must handle different tasks every day. This problem introduces the challenge of being unorganized on one specific work.

Staff find it difficult to manage lost and found things. There hasn't been a process to properly handle things when they are found, verify who really is, and, most importantly, return items to their rightful owner (24/7 Software, 2021). This can lead people to anxiety and creates fear because on how it might be expensive or valuable. It will take time to go back and look for the lost item – hoping that their personal belonging will just appear (Harburg et al., 2015).

Different studies have been conducted to emphasize the problem of misplaced and lost objects, and the results demonstrate that this problem is now very widespread worldwide.

B. Statistics about Missing Items

According to SpotyPal (2019), The average American spends 60 hours per year searching for misplaced things, which costs \$2.7 billion in U.S. families in replacing prices each year. To further elaborate: (a) A person spends 10 minutes every day looking for their keys, mobile and other misplaced belongings; (b) Every week, thousands of computers such as laptop, are stolen in airports in the United States; (c) Every year, 120,000 mobile phones are lost in taxicabs just in Chicago; (d) Every year, million bicycles are stolen, and only 5 percent are retrieved and returned to their respective owners; and (e) people spent an average of 4.5 hours each week looking for the TV remote. Biggs (2017) shared the survey created by Pixie about the missing and found items: (a) 45 percent of people often misplaced their TV remotes weekly; (b) 33 percent on mobile phones; (c) 28 percent for home keys, including the car keys; (d) 27 percent for eyeglasses; (e) 24 percent for shoes; and 20 percent for wallets. Consumed time is not the only reason of being forgetful. According to the research, (a) 60 percent of individual have been late for work or school due to misplaced belongings; (b) 49 percent because they missed meeting and appointments; (c) followed by 22 percent who have missed transportation such as bus, train or plane. This turns out that misplacing stuff isn't only costly; it's also a huge time waste. If people are just organized, each person can save at least 16 minutes to 1 hour per day, said by the American Demographics (Ahmad et al., 2015).

C. Lost and Found System

The main issue with the departments who handle lost and found is the procedure through which things are claimed, unclaimed, documented, recorded and retrieved (24/7 Software, 2021). From the things that were mentioned, it is really essential to create a system that can support in the resolution of these issues (Ahmad et. al, 2021). With the advanced technology, it's not new that there are existing systems that can track, list and can return the lost items to its owner which have been created to make human life easier (Harburg et al., 2015).

A web-based database is integrated into the system of lost and found to track missing and found items at the entire ground level (Bolu-Steve et al., 2015), same as with the mobile application. This creates a dynamic overview of stuff found and misplaced, where customers try to portray and view them online. This is designed to enable very precise methods with limited human involvement and provide possible solutions (Bataineh et al., 2015).

At the company stage, the existing processes Lost and Found were maintained. When the level of the company is massive, most things are not adequately connected or found quickly. That include airports, amusement parks, shopping center, hospitals, facilities for public transit, and etc. Many of these unclaimed items have never been lost and sold by these organizations in large auctions. The following information of how this is done at all stages of the organization. Many of the items which have not been claimed will never be lost and sold by those organizations in large auctions (Yerramsetti, 2018). Here are specifics about how it is applied on multiple stages of organization:

At the Airport. In different airports and virtually all airlines, the system of Lost and Found are operated. They help to retrieve the missing things from the passengers at the airports and store it to the passengers who lost it. The service found by the officials or authorities is managed based on the description and classification of the stuffs. Sorting manually may also be ambiguous since it is the individual who classifies the object. Although they do provide a network technology browser, it meets the system's connectivity needs only. The systems cannot simplify this process as much as they can. The implementation of these programs poses numerous problems and challenges. The authorities have difficulties in dealing with travelers from all around the world about the lost objects. It takes a long time to collect and manually list all these items, whilst passengers will have to leave their location to go to their destination from the flights. The time for processing in this case is therefore an essential part.

Services in the Public. The said system which is Lost and Found, is also operated in the public services such as in bus, trains, and etc. Many of the travelers forget about their thing – these items are collected and handled safely so that the people who have misplaced them can be returned. Finding of the missing objects and their telling the description is a challenge in this situation.

D. Locations of Lost and Found System

Educational Institutions and the Departments. Many private and government organizations, colleges and universities still adopt the system that have been lost and found based from the level of their organization. The difficulty in this kind of situations is to keep the company connected to continue or maintain the said system. These systems are decentralized on departmental levels in order to face this problem. Often it may be complicated for the users to know where he had found his lost personal belonging. Handling several claims about an item identified in this case is another problem.

E. Lost and Found System in Universities

Notices about the lost items are usually posted on the notice boards in every department. However, the notices don't remain long, because of continuous updating of notes on the board and that leads students to neglect those kinds of notices. Today, with the broadening use of internet services, students can quickly search for the lost items on the internet, and people who help to locate the lost item can upload the description of it on the internet. According to RepoApp (2019), there are benefits of having a Lost and Found System in universities and colleges:

With the web-based system focusing on school, the database will be monitored, maintained and updated by the administrator; and for the student, they will be utilizing the use of the mobile application. In line with this, the university network is able to gain a great many benefits by having an online of lost and found. Usually, the said system will be available to all college students, workers, and staffs; and the user-interface is simple and easy to understand. This framework can reduce the operation of the admins who are in charge of monitoring lost and found items. Their aim for doing the application is to encourage honesty between the users that will help raise awareness among them about the efficiency of the tab search in addressing problems on the retrieval item related (Awotunde et al., 2019). Research has shown that a good number of students use the internet every day; even some universities provide their students and staff with easy internet connectivity, helping facilitate the passage of knowledge and recovery which may be helpful on applying in a situation of losing items and trying to retrieve it (Sadiku et al., 2019). There's also an impact with the use of mobile application. Nowadays, the said device is a great tool in providing a communication and system services since there's a large number of users own by it. The goal is to transform some old patterns in the incident of a lost and found item, that when someone saw a missing item inside the premises of the said locale, the standard procedure was to return the item to its rightful owner. Some people are hesitant to report a missing object due to old and manual system of reporting, which in fact, it requires a lot of time and effort. Authorities are also requiring to work response with such reports in a hurried manner (Razi and Putra, 2020).

3. Methods

Rapid Application Developments is a development methodology that promotes quick prototyping and feedback rather than lengthy construction and testing cycles. With this the researcher will be able to construct and continuous update the project from time to time. The Rapid Application Development consist of 4 phases,

- **Requirements Planning** In this phase, the team are capable of analyzing and collecting the necessary information needed for the development of the prototype.

- **User Design.** This phase is the most crucial part among the phase that the researcher has been tackled; by all that means, the particular client can suggest or even give new ideas and perspective that let the researcher to avoid further problems as they may encounter in the latter part of developing the project/system.
- **Construction.** Once everything was settled and figured out, the researcher can now start with building and testing the specific project.
- **Cutover.** Once the system reaches its full functionality and error free, it will be implemented to the client. This is the implementation phase where everything is ready to deploy or launch in the public.

4. Data Collection

4.1 Internal Source of Data

A short term for Internal Data or Internal Resources, it is from the same organization. Data of the study will be coming from the accumulated reports of lost and claimed items from the OSAFA. With this, the researchers can identify the most common problem associated with misplacing personal belongings; the data are expected to show significant value to the study. Before moving to the development, the needed data will be gathering, specifically the lost and found logbook of OSAFA. In order to get the statistical value of the said data, the researchers will tally the total accumulated reports each academic year.

4.2 UX Survey using Seven-Point Likert Scale

Given that there's a pandemic, students are unavailable to test the application, it is understood that it will be difficult to gather the data needed for testing of the system – in line with this, the researchers will be using the survey from the Google Form. The method that will be used is called UX Survey, also known as User Experience Survey.

User Experience Survey is a form of survey that validates the experience, and it gathers the feedback of the users towards the system or application to give an insight; allowing to understand what works and what doesn't and prioritize adjustments to enhance the UX. In order to interpret the data from the given survey, Likert Scale will be used.

The said scale is easy to quantify the sorts of findings, and it can be useful for evaluating vast amounts of data. For the study, 7-Point Likert Scale will be the approach in analyzing the results – this provides seven choices, ranges from “very dissatisfied” up to “very satisfied” based from the user's experience, which is known as most accurate among the types of Likert Scale, because it consists of neutral midpoint in accordance of the responses that shows real assessment and evaluation.

There will be two types of survey – the first survey is intended for the ten (10) user students of AUF, and the second survey is for the clients or the administrators of OSAFA.

5. Results and Discussion

Data were analyzed to describe and explore the number of subjects – students and administrators, about their experience with the new system, and to identify the score of the respondents from the survey. The findings relate to the objectives that guided the study. Upon the initial interview that was conducted with the client, which is the Office of Student Affairs and Financial Aid or OSAFA, it was discussed that the system must meet the required flow of the manual system of lost and found of the locale in which the proposed system was enhanced and made it more complex – easier for the admin to access the data that was recorded.

The Android Application Package (APK) of mobile platform will be available in the official website of AUF; and from that, the student can download and install the mobile application. On the other hand, the web application will be available with the local server of the admin.

5.1 Graphical Results

Table 1. Likert Scale

Likert Scale	Interval	Description
1	1.00 – 1.85	Extremely less effective
2	1.86 – 2.71	Very less effective
3	2.72 – 3.57	Less effective
4	3.58 – 4.43	Neutral
5	4.44 – 5.29	Effective
6	5.30 – 6.15	Very effective
7	6.16 – 7.00	Extremely effective

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According to the result of the said analysis, the researchers observed that in the first three months – June, July and August of 2017, there were plenty of students who reported an item, and on the other hand, there were less reports accumulated at the end of the school year. This clearly shows that as the month and year progresses, the reported items decrease.

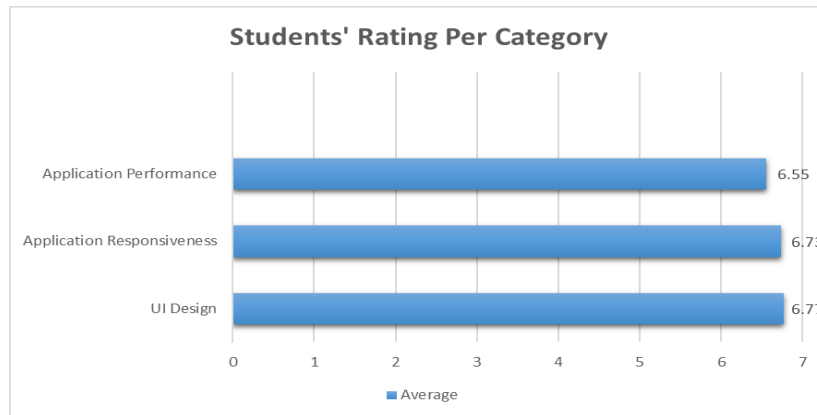


Figure 1. Student’s Rating Per Category

Based on the Figure 1, the mobile application is extremely effective – meaning, it has an impact on student’s perception. Since majority of the college students are using mobile device, this will help and make it easier for them to report and retrieve their personal belonging. Additionally, based from the result of the survey and given criteria, the overall rating of the application shows neatness, clear objectives and met the expectation of the users.

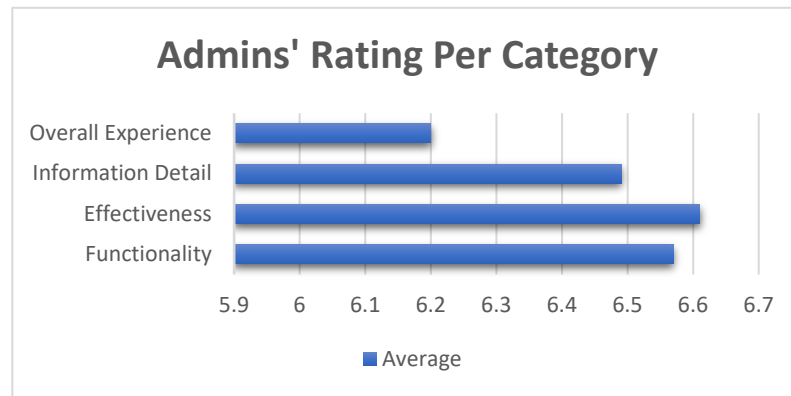


Figure 2. Admin's Rating Per Category

The Figure 2 shows that the website met the expectation of the admins. It clearly shows that the deployed system is very useful for the locale. From the outcome, it summarizes that the system they are using was enhanced and the data are properly secured.

5.3 Proposed Improvements

To further enhance the study and the system, these are the recommendations of the researchers and for those who will pursue and aspire to continue this study even further:

1. Setting an appointment schedule with the OSAFA to save time and process it quickly;
2. Availability for iOS platform;
3. Adding visual representation of statistics for better understanding the data in mobile application.

6. Conclusion

Upon the analysis of the data gathered and the conducted survey, the researchers concluded that the system will greatly benefit the locale.

Firstly, bringing awareness towards its students that the Angeles University Foundation does not only care about the intellectual knowledge, but also to deliver a perception that their belongings are also part on how the University care for its students, as mentioned earlier one of the primary features of the system is that connection and communication is made easier and faster with the help of cloud messaging notification.

Secondly, it is beneficial to the admin since it allows them to get an accurate data more efficiently and effectively from the reported item; the proposed system works, mainly the student, will be the one to input the parameters in the end of the admin – this will be done with the help of the mobile application and the data will automatically record without the admin interfering.

Lastly, the researchers were able to enhance the manual system that the client is currently utilizing. The manual system consists of logbook which is prone to error and confusion. With AUFfound, the data are more secured simply because it delivers safe environment: tables are organized, items are categorized, search bar is present, and generated number of reports are shown.

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