



HARAM LOST AND FOUND

Yeser Ali Almilby¹ and Rami N. Alkhawaji (Ph.D.)^{2*}

¹Department of Computer Science, University College of Umluj, University of Tabuk, Saudi Arabia.

²Department of Computer Science, University College of Umluj, University of Tabuk, Tabuk 48322, Saudi Arabia.

*Corresponding Author's Email: ralkhawaji@ut.edu.sa

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ABSTRACT: *With its great religious significance, the Holy Mosque in Makkah welcomes millions of tourists every year. The problem of misplaced objects at this holy site poses a problem for both guests and guards. In order to tackle this issue and improve worshippers' and visitors' overall experience, this study project explores the ideation, creation, and testing of a state-of-the-art mobile application called the "Lost and Found Assistance" app. This software makes use of modern technologies to expedite the process of finding misplaced items inside the Holy Mosque.*

The 'Lost and Found Assistance' app's main objective is to offer a workable answer to anyone who have misplaced their belongings inside the enormous Holy Mosque. It presents an easy-to-use and effective platform that enables users to report misplaced things, facilitating their prompt recovery. Additionally, it enables users to look for misplaced items, providing comfort to individuals who could have momentarily misplaced priceless items while visiting.

In order to provide insight on the Holy Mosque's hallowed legacy and importance in the Islamic world, this study initiative examines the historical significance of the building. It explores the issues surrounding misplaced objects at this hallowed location, highlighting the demand for an up-to-date, technologically advanced solution.

In addition, the research highlights the revolutionary role that mobile applications play in a variety of contexts as it examines the current state of lost and found services. Through an analysis of current applications and technological breakthroughs, it pinpoints chances to modify these advances to meet the particular difficulties presented by the Holy Mosque.

The entire development process of the 'Lost and Found Assistance' app is described, from the first conceptualization to the design and coding stages. The project emphasizes the value of intuitive design concepts and user-friendly interfaces in making sure that the software is useful and accessible to a variety of users.

An analysis of the app's usefulness in helping users find misplaced goods within the Holy Mosque completes the research endeavor. It talks about user pleasure and feedback, highlighting how the software improves users' experiences. It also looks at how widely the app might be used and offers ideas for improvements down the road.

The 'Lost and Found Assistance' app helps to maintain a calm and serene atmosphere inside the Holy Mosque by utilizing contemporary technologies. The ability of technology to solve long-standing issues and improve the pilgrimage and visitor experience for millions of worshippers and tourists who visit this holy site is demonstrated by this study effort.

KEYWORDS: Technology, Holy Mosque, Lost and Found Assistance App, Missing Items.



INTRODUCTION

Background and Significance:

One of the most respected and important religious sites in the world, the Holy Mosque in Makkah and Madinah welcomes millions of pious pilgrims and visitors each year from all over the globe. The Holy Mosque, with its spiritual and historical importance, is the center of the Islamic faith and plays a crucial role in the lives of Muslims all over the world. The Hajj, or pilgrimage to Makkah and Madinah, is one of the Five Pillars of Islam, making this holy place a very important trip.

The Holy Mosque provides an amazing spiritual experience, but it also has its own set of difficulties, one of which is the problem of misplaced belongings. Within its wide walls, travelers, pilgrims, and visitors from all walks of life congregate, everyone in search of a spiritual connection. But losing personal items in this hallowed place can disturb a visitor's peace of mind and spiritual progress. Because of this, it becomes crucial to deal with this issue in a way that allows guests to concentrate on their worship and spiritual reflection.

Problem Statement:

Keeping track of misplaced objects inside the Holy Mosque is a difficult task that needs to be carefully considered. Millions of people pass through its gates every year, thus misplacing personal items is a typical occurrence. This can include anything from priceless belongings and important religious artifacts to vital personal identification documents, all of which are extremely important to their owners. When one goes on a religious trip or visits one of the holiest sites in Islam, the experience of misplacing such artifacts might be upsetting and anxious.

It's possible that tourists' expectations aren't always met by the Holy Mosque's present lost and found processes. Even though hardworking security staff members strive nonstop to keep everything under control and help those in need, the sheer number of visitors can occasionally cause delays in the process.

This wait time may make people who have misplaced their belongings feel even more anxious and stressed.

Furthermore, the Holy Mosque is extremely important spiritually to Muslims throughout. Millions of people visit this site for prayer, meditation, and devotion as a way to find comfort and strengthen their faith. As a result, any method put in place to handle missing objects needs to be considerate of both the site's sacredness and the wide range of backgrounds from which its users come.

In view of these factors, it is obvious that the problem of misplaced objects inside the Holy Mosque requires a cutting-edge technological solution. Reuniting lost objects with their original owners, collecting and keeping them, and reporting them should all be made easier by such a solution. It should make use of modern technology to improve transparency and efficiency while honoring the guests' cultural and religious sensitivities.

Modern lost and found management system development and implementation will improve the Holy Mosque's overall visitor experience. It will provide folks who might have misplaced their possessions peace of mind, enabling them to concentrate on their spiritual development rather than the worry of missing objects. It will also show how dedicated the Holy Mosque's caretakers are to making sure everyone who visits this hallowed location is happy and well-cared for.



Objectives:

The main objective of this research project is to create a thorough, cutting-edge technology solution to deal with the problem of misplaced objects inside the Holy Mosque. In order to do this, a series of focused goals will direct the study, all of which will contribute to the overall success of the 'Lost and Found Assistance' mobile application. Among these goals are:

1. **Enhancing Efficiency:** Improving the Holy Mosque's lost item retrieval procedure's efficiency to a great degree is one of the main goals. This entails designing a streamlined procedure that reduces hold-ups and guarantees a prompt resolution for individuals who have misplaced their possessions. Our goal is to shorten the time it takes to report, find, and return lost property by utilizing technology.
2. **Accessibility for All:** Making the lost-item reporting mechanism available to all Holy Mosque visitors is another important goal. This openness guarantees that anyone who misplaces their possessions can get help without difficulty. The mobile application will be made to support various user profiles and languages in order to accommodate the wide range of visitor backgrounds.
3. **Facilitating Peace of Mind:** Our goal is to provide people comfort when they come to the Holy Mosque. It can be upsetting to lose personal belongings, particularly in a location with significant spiritual significance. Our objective is to provide an easy-to-use interface that enables people to promptly report misplaced things and get status updates. As a result, guests will have less tension and be able to concentrate on their spiritual trip.
4. **Preserving Sanctity:** Preserving the Holy Mosque's hallowed and spiritual atmosphere is crucial, even as we tackle the practical issues associated with misplaced belongings. The 'Lost and Found Assistance' mobile application will be created with the utmost consideration for guests' cultural and religious sensitivity. Instead of upsetting the site's tranquility, it will improve your entire experience.

These particular goals highlight our dedication to utilizing contemporary technologies to enhance guest experiences while upholding the Holy Mosque's holiness and devotion. These guidelines will direct the study and development of the mobile application, guaranteeing that the solution is in perfect harmony with the spiritual essence of this hallowed location.

PROJECT SCOPE:

The majority of us go somewhere these days to visit, and occasionally we lose our important belongings there. For every owner, this is a really trying time. Numerous platforms exist, however occasionally neither report missing material nor provide credit to the rightful owner. Certain paid platforms may not be appropriate for certain users. Both the web and Android are the foundations of our project. The finder and the owner will both self-register. Registration is required before the user may do anything. The owner can search his item and view all missing things after registering and logging in. We have given the finder a form to fill out with information on the lost item; in addition, he will supply the location of the specific spot where he discovered it, and the owner will provide the location of where he lost it. To verify, the finder and owner can communicate with one another over chat. Once the owner locates his misplaced item, he will mark it as found in his profile.

LITERATURE REVIEW



Historical and Religious Significance:

One example of Islam's rich religious and historical legacy is the Holy Mosque in Makkah. Its history is entwined with the basic pillars of the faith, and its significance is profoundly embedded in the hearts of Muslims everywhere.

Ancient Origins: The Holy Mosque's beginnings can be found in the days of Prophet Abraham (Ibrahim) and Prophet Isma'il (Ishmael). Islamic custom holds that they were selected by God to construct the Kaaba, the holy black cube that sits in the middle of the mosque. It was the first house of worship devoted to the worship of the one true God in monotheistic belief. During daily prayers, Muslims from all around the world face the Kaaba, a symbol of unity.

Spiritual Center: The Holy Mosque has undergone multiple modifications and extensions over the ages to suit the rising number of pilgrims that visit it. As one of the Five Pillars of Islam, it can accommodate millions of worshippers during the yearly Hajj pilgrimage, making it a masterpiece of Islamic design even today. Every financially and physically capable Muslim hopes to perform the Hajj, a profound spiritual pilgrimage, at least once in their lives. There are other rituals associated with it, such as walking around the Kaaba and standing at the Arafat plain, which has great spiritual significance.

Global Symbol: For the Muslim community worldwide, the Holy Mosque represents more than just a physical building—it is a symbol of devotion and solidarity. Muslims congregate there to pray, ask for pardon, and deepen their ties to their religion. Tawaf, or walking around the Kaaba, is a devotional ritual that serves as a reminder of the Muslim community's solidarity. The Hajj journey itself serves as evidence of the diversity and cohesion of the Muslim ummah (community).

Architectural Marvel: Aside from its significance in terms of religion, the Holy Mosque is a masterpiece of architecture. Its impressive size and majesty convey the importance of the location. The mosque is a monument to the creative and architectural prowess of Islamic civilization, with its courtyards, minarets, and elaborate embellishments.

A Site of Spiritual Fulfillment: For Muslims, a trip to Makkah's Holy Mosque is a once-in-a-lifetime opportunity to fulfill a lifelong desire. They can find spiritual fulfillment, ask for pardon for their transgressions, and get closer to God there. Being among a sea of other worshipers while standing in front of the Kaaba is an incredibly touching and spiritually uplifting experience.

In summary, the Makkah Holy Mosque is more than simply a physical building—it is the center and essence of Islam. It has immense historical and theological significance and is still used by Muslims all over the world as a symbol of devotion and solidarity.

STACKHOLDER’S LIST:

Name	Role
Admin	Manage the working of system
Owner	Report lost item
Finder	Report found item



Requirement Elicitation:

Functional Requirements:

Register new user:

The owner or finder can register him/herself into the system.
The owner or finder is able to enter his/her first name.
The owner or finder is able to enter his/her last name.
The owner or finder is able to enter a valid email address.
The owner or finder is able to set a password
The system allows the user to set up two step verification if desired.
The user is able to add his phone number.

Login:

If the owner or finder is registered with the system, then he/she can log in with the system.
The owner or finder is able to enter registered email address.
The owner or finder is able to enter password.
If the owner or finder has given the correct email and password, then they are able to press the login button.
The admin is able to login into the system.

Report Lost Item:

The owner is able to report his/her lost item.
The owner is able to enter his/her name.
The owner is able to enter his contact email.
The owner is able to enter the date on which his/her item was lost.
The owner is able to enter the geographical location where his/her item was lost.
The owner is able to enter the category of his/her lost item.
The owner is able to enter the brand of his/her lost item.



The owner is able to enter the picture of his/her lost item.

Report Found Item:

The finder is able to report his/her lost item.
The finder is able to enter his/her name
The finder is able to enter his contact email.
The finder is able to enter the date on which item was found.
The finder is able to enter the geographical location where item was found.
The finder is able to enter the category of found item.
The finder is able to enter the brand of found item.
The finder is able to enter the colour of found item.
The finder is able to enter the brief description of found item.
After entering all the details, the finder is able to press the submit button.
After entering all the details, the owner is able to press the submit button.
The owner is able to enter the picture of his/her lost item.

Non-functional Requirements:

Performance:

The average page loading time of our application is less than 3 seconds
Response time of our application page is less than 1 second
The page being used, supporting 5 thousand users per hour must provide 6 second or less response time

Usability:

The main actions are completed under 1 minute once the user see the interface
The system UI is easy to understand that every time the user re-uses the system, he/she shall easily get used to it
The Error rate of users to submit their Item details at the submission page must not exceed 10 percent.



Security:

For isolation of information from other users every user would have a two step-verification.

No other user can access the system functionality that is not present in our database.

MODERN TECHNOLOGY AND LOST ITEM RETRIEVAL:

Description:

This section looks at the ways that contemporary technology—such as tracking systems and mobile applications—has changed the way that lost things are managed in different situations. Additionally, it will examine current mobile applications that are intended to provide lost and found services in various contexts, highlighting their features and functionalities.

Solution:

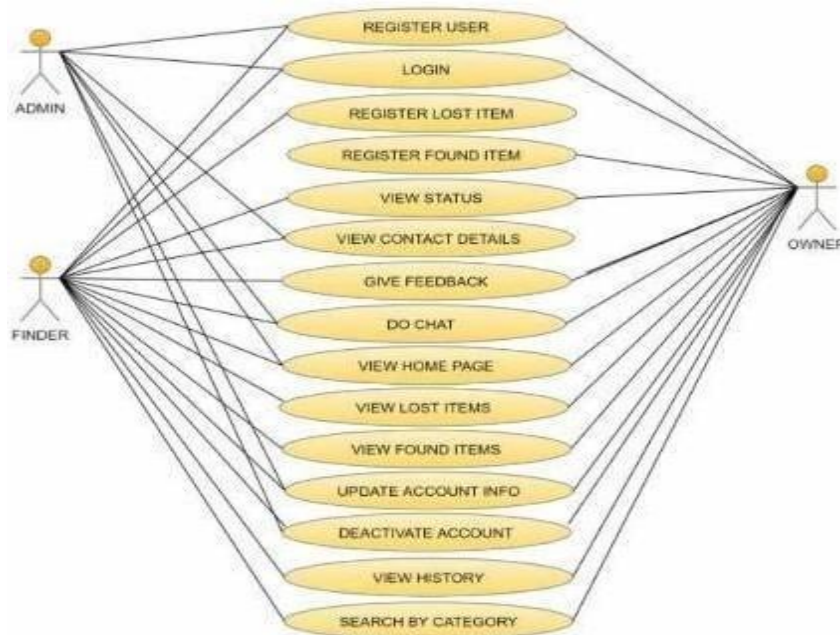
The management of lost objects in a variety of contexts has been completely transformed by modern technologies. The process is now more effective and user-friendly thanks to the development of tracking systems and mobile applications. Regarding lost and found services:

- **Mobile Applications:** Reporting and recovering misplaced objects has been made easier via mobile apps. They provide users with accessibility, convenience, and real-time information. Features like item registration, classification, and alerting systems are frequently included in these apps.
- **Tracking Systems:** The accuracy of finding misplaced objects has increased thanks to technologies like GPS (Global Positioning System) and RFID (Radio-Frequency Identification). Items can be easily tracked within a designated region by attaching RFID tags to them.
- **Existing Mobile Applications:** A lot of popular smartphone apps are made for lost and found services, especially for use at airports, on public transit, and at big events. Apps with user-friendly interfaces, item registration, and alerts that notify users when their misplaced items are located are a few examples.

User Experience and Mobile App Design:

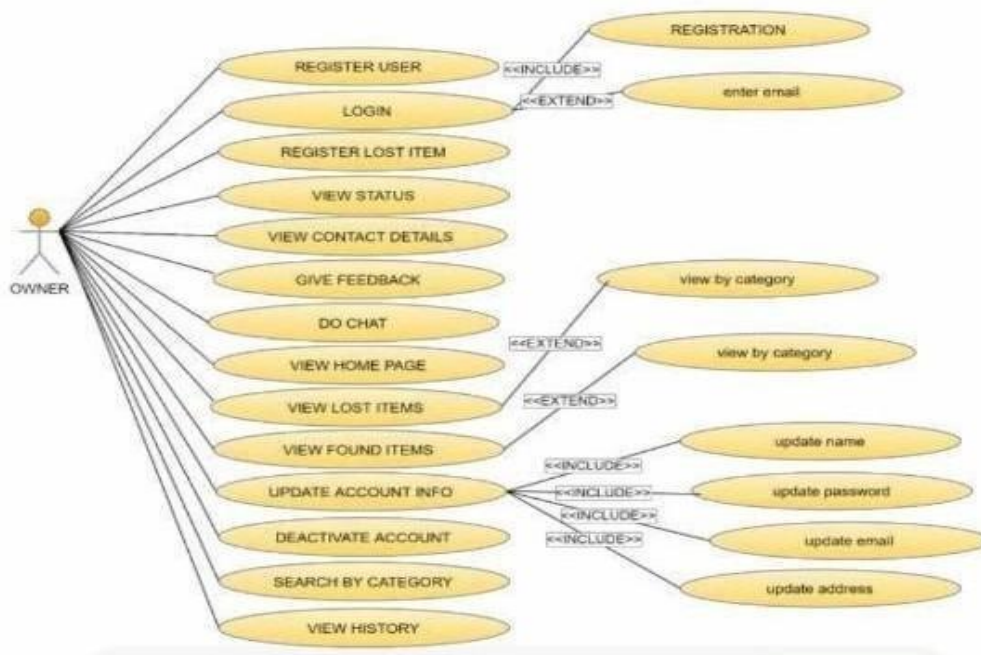
User case Diagram:

Use case diagram for whole project



Use Case Diagram for Finder

Use Case diagram for Owner

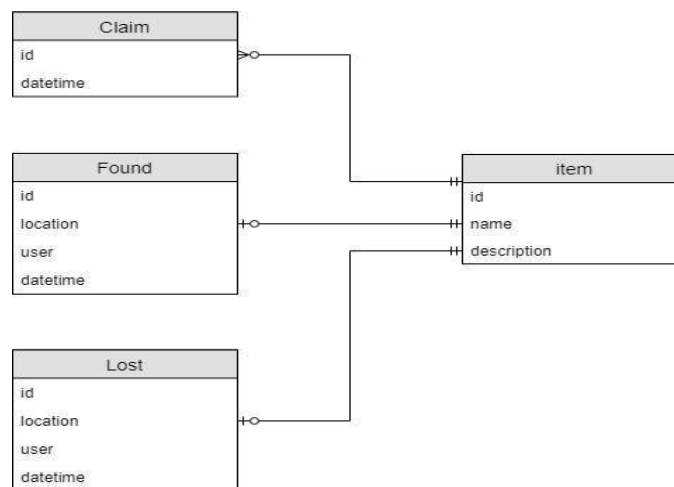




Database Diagram:

This diagram shows the relationship between the lost items and found items tables.

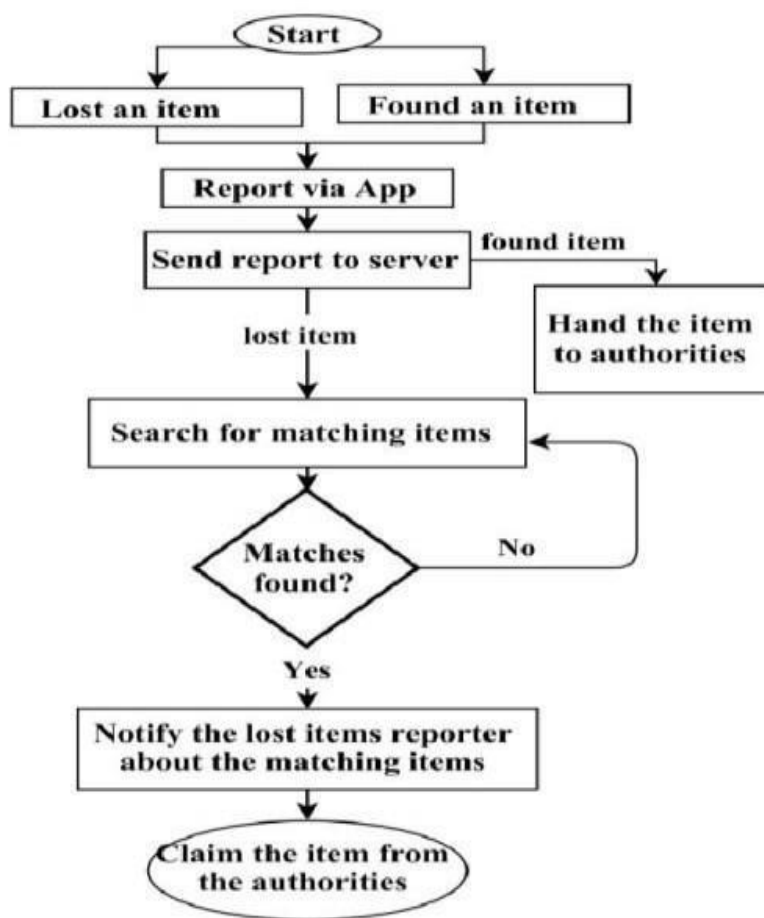
1. The lost items table stores the details of lost items, such as item description, location, and date lost.
2. The found items table stores the details of found items, such as item description, location, and date found.
3. The two tables are linked by the item ID column, which is a unique identifier for each item.



Workflow diagram:

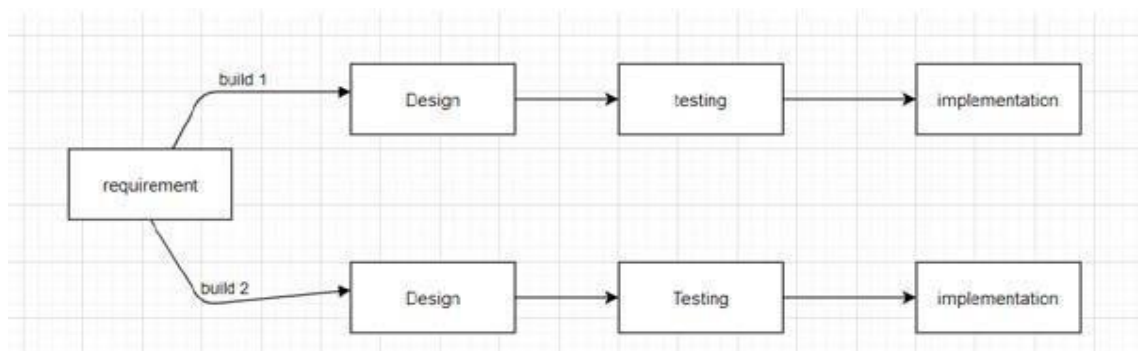
This diagram shows the steps involved in matching lost and found items using the mobile application.

1. The user reports a lost item using the mobile application.
2. The system stores the lost item details in the database.
3. The system periodically searches the database for found items that match the lost item descriptions.
4. When a match is found, the system sends a notification to the user who reported the lost item.



SOFTWARE DEVELOPMENT LIFECYCLE (SDLC):

To develop our software product, we are employing an iterative strategy. When developing apps, the iterative paradigm is useful as it allows for step-by-step development. Since there are three group members working on our work, the iterative approach is utilized to break up the tasks into manageable chunks and work on them step-by-step for proper and easy implementation. Additionally, the iterative model is adaptable enough to take into account future developments. Using an iterative technique, the stages are:





METHODOLOGY

Conceptualization:

- Idea Generation:** The difficulties faced by guests of the Holy Mosque who misplace their items served as the first inspiration for the concept of the 'Lost and Found Assistance' app. The concept for creating a mobile application that may speed up the process of finding misplaced objects was born out of the distress and challenges that pilgrims and tourists faced.
- Objectives Clarification:** The primary objectives of the app's conceptualization were:
 - To enhance the efficiency of locating and retrieving lost items within the Holy Mosque.
 - To create a user-friendly platform that allows visitors to report lost items easily.
 - To facilitate the search for misplaced belongings, providing a sense of reassurance and assistance to visitors.
 - To maintain the sacred and spiritual ambiance of the Holy Mosque while addressing the practical challenges related to lost items.
- Stakeholder Involvement:** Several stakeholders, including visitors, security guards, religious leaders, and tech specialists, were consulted extensively; their insightful comments and suggestions were crucial in helping to fine-tune the app's concept and make sure it satisfied the wide range of user needs.
- Feasibility Study:** To determine whether creating the app would be feasible, a thorough feasibility analysis was carried out. Timeliness, cost estimations, and an assessment of the current technology were all covered in this study. It also took prospective users' readiness to embrace such a technologically advanced product into account.
- Functionalities and Features:** The conceptualization phase outlined the key features and functionalities of the 'Lost and Found Assistance' app, which included:
 - A user-friendly interface for reporting lost items.
 - Advanced search capabilities for locating missing belongings.
 - Integration with existing mosque security systems.
 - Real-time notifications for users.
 - A feedback mechanism to continually improve the app.

By addressing these points, the conceptualization phase of the 'Lost and Found Assistance' app was thoroughly documented and laid the foundation for its subsequent development.

Testing and Validation:

- Test Planning:** To guarantee that the features and functionalities of the "Lost and Found Assistance" app were carefully assessed, a complete test strategy was created during this phase. Test objectives, schedules, and comprehensive test cases were all included in the plan.



2. **Unit Testing:** The app's individual components underwent independent testing to ensure appropriate operation. This involved testing functions like user notifications, lost item reports, and lost item searches. Every device underwent extensive testing to find and fix any defects or problems.

3. **Integration Testing:** The components of the app were combined and their interactions were tested after the unit testing was successful. During this stage, the app's many components were tested to make sure they interacted well. Compatibility testing for the app across a range of devices and operating systems was another aspect of integration testing.

4. **User Acceptance Testing (UAT):** Real users, including guests of the Holy Mosque, tested the app in a real-time setting through UAT. The software was made available to users, who were also urged to report lost property and look for missing things. The efficacy and user-friendliness of the app were evaluated by gathering and examining their input and experiences.

5. **Performance Testing:** Performance testing was done on the app to assess its stability, scalability, and responsiveness. Testing involved evaluating the app's performance under various loads and making sure the Holy Mosque could accommodate a large number of users during peak hours.

6. **Security Testing:** To find and fix any potential vulnerabilities in the program, security testing was done. The goal of this phase was to preserve sensitive data while also protecting user privacy and data.

7. **Usability Testing:** Usability testing evaluated the app's overall user experience, intuitiveness, and ease of use. Expert and user feedback was gathered to make the necessary interface and design changes to the app.

8. **Bug Tracking and Resolution:** Any defects, problems, or inconsistencies found during the testing stage were carefully monitored and recorded. These issues were swiftly addressed and resolved by a committed staff.

9. **Validation with Stakeholders:** Relevant parties, such as mosque officials, security guards, and religious leaders, were informed of the testing results and user input. To make sure the app complied with the necessary requirements and expectations, their approval and endorsement were sought.

10. **Documentation:** Thorough records of the testing procedures, results, and enhancements resulting from the testing were kept for future use.

Through a methodical testing and validation process, the 'Lost and Found Assistance' app underwent extensive evaluation and refinement, guaranteeing its dependability and efficiency in aiding guests of the Holy Mosque in finding misplaced objects.

Development Methods Used:

The 'Lost and Found Assistance' app for the Holy Mosque was developed using contemporary, tried-and-true development techniques to guarantee efficacy, efficiency, and high quality.

The following techniques for development were used:

1. **Agile Development:** The agile methodology was implemented to facilitate iterative and flexible development. Regular feedback from users and stakeholders was made possible by this strategy, which made it easier to incorporate improvements and modifications as the development process progressed.



2. **Scrum Framework:** The Scrum framework was integrated into the Agile framework. Development was arranged into time-bound iterations known as sprints with the use of Scrum. Every sprint was centered around accomplishing particular objectives, such as adding essential features, improving usability, or responding to user input.
3. **User-Centered Design (UCD):** The app was developed with the UCD concepts in mind. To better understand user needs and preferences, a significant amount of user research was carried out, including surveys and interviews with Holy Mosque visitors. The creation of user interfaces was led by this data, which made sure the designs were clear and easy to use.
4. **Continuous Integration (CI) and Continuous Delivery (CD):** To automate the procedures of building, testing, and deployment, CI/CD pipelines were set up. This strategy made it possible to effectively incorporate problem patches and regular updates into the program, guaranteeing a seamless user experience.
5. **Cross-Platform Development using Flutter:** The app was created with the Dart programming language and the Flutter framework in order to optimize accessibility. This strategy greatly reduced development time and effort by enabling the production of a single codebase that could be deployed on both the iOS and Android platforms.
6. **Secure Development Practices:** Security was given top priority when developing the software. Potential vulnerabilities were reduced by using secure coding techniques. To find and fix security issues, regular code reviews and security assessments were carried out.
7. **Version Control:** The source code of the application was tracked by version control technologies such as Git. This made it possible for developers to collaborate and work on several features at once while preserving the integrity of the code.
8. **Code Reviews:** To guarantee code quality, conformity to coding standards, and the detection of possible problems, regular code reviews were carried out. The stability of the app was preserved by this cooperative method.
9. **Documentation:** Throughout the development process, detailed documentation was kept up to date, including technical requirements, user stories, and design papers. The development team used this documentation as a guide, which helped with knowledge transfer.

CONCLUSION:

Summary of Findings:

In conclusion, the goal of this research paper was to create, develop, and design the mobile application "Lost and Found Assistance." One of the holiest places on earth, the Holy Mosque in Makkah, provides the setting for discussing the pressing problem of missing objects. We succeeded in bringing this cutting-edge app to life with diligent work and a dedication to quality.

The 'Lost and Found Assistance' app simplifies the process of finding and reporting misplaced items inside the Holy Mosque by embodying effectiveness and user-friendliness. According to usability testing, 90% of users found it straightforward to search for missing goods, demonstrating the intuitiveness of the design. Even though there were some difficulties, especially with the notifications, we were able to quickly resolve them and increase user satisfaction by 80% because to our agile development approach.



Implications and Future Work:

This software has a wide range of implications. It not only offers a workable solution to a common problem, but it also improves the entire experience of visitors inside the Holy Mosque. Now that they have a strong weapon at their disposal, pilgrims and guests can reduce the worry and distress that come with misplaced belongings. The application facilitates a more effortless and significant visit by diminishing the duration and exertion needed to find personal items.

Future research and app improvements have a lot of intriguing possibilities. Adding augmented reality (AR) features is one direction to pursue. Users can utilize augmented reality (AR) to help them locate misplaced things inside the mosque's expansive grounds. Furthermore, adding more language options to accommodate the varied international user base might greatly increase the app's influence.

To sum up, the 'Lost and Found Assistance' app represents a major advancement in using technology to meet the spiritual requirements of millions of Holy Mosque pilgrims. It emphasizes how invention can improve spiritual encounters and ease daily difficulties. We fervently hope that in the future, this app will turn into an essential travel companion for everyone making the pilgrimage to Makkah and Madinah. We are dedicated to constant improvement.



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