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Visitor's Management System for Apartments

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ABSTRACT: In the twenty-first century, the Visitor Management System is critical in almost all organisations. Visitor management is essential for any organisation because it aids in the maintenance of a visitor record system. The organisation should have a proper system in place to track who is in the facilities, when they arrived, and why they are there. When a visitor arrives at the guard house, the information is manually recorded by either the visitor or the guard using the traditional paper log or guest book, and this physical process takes a long time and involves tedious work. Another issue is that the increasing number of visitors indicates security issues, which occur primarily because the operators lack time to verify each visitor's identification at the entry. The solution proposed in this paper aims to provide an automated system by replacing the existing manual method with a computerised system. The solution makes use of the visitors' facial features. The primary goal of this application is to assist Apartment residents. Residents can use this application to identify visitors to their own flats before they enter by using their photo and information. This project also assists apartment owners in preventing unauthorised people from entering the apartment.

KEYWORDS: apartment, visitors, identification.

I.INTRODUCTION

The level of recognition of visitors is directly related to the organization's authenticity. A precise, straightforward, and well-defined visitor management system calibrates tonnes for a constructive and worthwhile visitor experience while causing the least amount of disruption to employees. Visitors visit the organisation on a regular basis, and there is no digital record because the security guard asks the visitor to register himself by writing his details in a register and taking his signature, which takes a long time when the number of visitors exceeds the limit. Furthermore, a paper log is insufficient to provide greater traceability because it cannot be archived or efficiently retrieved after several years.

Apartment Visitors Management was created to assist the administration department of apartments in managing visitors who visit the flats residents. This application's modules are admin, residents, and employee. Admin is the super user who is in charge of managing and monitoring the entire application. First, admin enters all of the resident house flat numbers that are available in the apartment. The complete information of the residents and employees of the apartments is then added. The administrator is receiving a visitor report.

Employees and residents have secured user credentials to successfully and securely login to the application, making the data within this application secure from unauthorised users accessing it. The employee enters the visitors' information with their captured photo, which aids in fully and correctly knowing the outsiders' details. When the employee uploads visitor information, a message is sent to the concerned flat owner (resident) about the person who came to visit that resident. This feature distinguishes our application and makes it the most popular among users.

The flat owners are given the authority to accept or reject the visitor's details that the employee receives based on the information provided by the visitor. The visitors report is viewable by the administration, employees, and residents, making it very easy to track who visits the flats on a regular basis.

The admin can view a list of visitors who visited the flats individually, which helps the admin determine how many outsiders visited the flats on a given day. This application can be used comfortably and effectively by flat owners and apartment administration teams because the features designed will allow them to track outsiders visiting the flats fluently and easily. Because the message sent to the owners about the visitor allows them to determine who is visiting the flat with the photo being captured. This application is user-friendly and effective.

The primary goal of this application is to improve people's safety in their daily lives. Face recognition is an important part of safety, surveillance, and security in today's world. As a result, we require an application that is both efficient and cost effective.

Both security and residents in apartments face difficulties with visitor identification and management of their personal information. This application assists them in digitally managing visitor identification and details. It simplifies and

simplifies their work. The image of the visitor is saved in the database by this application. All information about the visitors who entered and left the apartment will be saved in a database. As a result, it will be extremely beneficial to apartment dwellers.

II.LITERATURE SURVEY

Harish Rapartiwar, PushpanjaliShivratri, OmkarSonakul, and Prof.AshwiniBhugul [1] created a system that solves the problem of appointments by capturing all relevant information about visitors and storing it in a centralised database server that provides data management.

Omar Abdul RhmanSalim, RashidahFunkeOlanrewaju, and Wasiu Adebayo Balogun [2] created a comprehensive embedded class attendance system with door access control using facial recognition. The system is built around the Raspberry Pi, which runs the Raspbian (Linux) operating system from a micro SD card. The Raspberry Pi is connected to a 5-inch screen as well as the Raspberry Pi Camera. By facing the camera, the image is captured and sent to the Raspberry Pi, which is programmed to handle face recognition using the Local Binary Patterns algorithm LBPs. If the students input image matches with the trained dataset image the prototype door will open using Servo Motor, then the attendance results will be stored in the MySQL database. The database is connected to Attendance Management System (AMS) web server, which makes the attendance results reachable to any online connected web browser. The system has 95% accuracy.

Kirti Dang and Shanu Sharma investigated various face detection algorithms, including Viola- Jones, SMQT features and SNOW Classifier, Neural Network-Based Face Detection, and Support Vector Machine-Based Face Detection. All face detection method comparisons rely on DetEval Software, which calculates the precision and recall value of the bounding boxes around the faces to provide accurate results[3].

Visitor Management System with Face Recognition Rikshitetal , proposed a method for managing the office premises using biometric security systems, which includes a high-end face recognition system to identify people in the office and to recognize strangers, i.e. visitors, and make appointments for them. A token-based authentication method via mail is used in the case of Unknown face recognition[4].

Secure Cloud Storage and File Sharing SreeVivek and Bharat Department of Information Sciences and Technology, Pennsylvania State University, Abington, PA 19001, USA 2 ICU Medical, Chennai, India, proposed the disintegration protocol as a secure file sharing mechanism for the cloud (DIP). The paper also introduces new contributions to the seamless file sharing technique between different clouds that do not require the sharing of an encryption key[5].

Madhurametal created a face detection and recognition system with Python and the OpenCV package. This system includes three free modules: detection, training, and recognition. Essentially, the detection module detects the face that enters the camera's field of vision and saves it as an image in JPG format. The system is then trained using the Haar cascade algorithm by the training module[6].

A Face Recognition Technology ManjeetKaur, spoke about their research on human behavior and characteristics. This paper explains how we can use computers to recognize faces. Also discussed are the various methods available for face recognition and the issues associated with each technology[7].

The Previous author proposed an automated visitor tracking management system. Their visitor management system was useful in places where a large number of visitors come and visit, such as colleges and tourist attractions. Their visitor management solutions provide visitors with a soft copy ID. At the time of check-in, all of those visitors' records were saved in the database. Their modern visitor management system was used to keep visitors out of restricted areas by sounding an alarm, sending a notification, or sending SMS at the time of their visit[8].

III. PROBLEM DEFINITION

The main goal of this application is to manage apartment visitors digitally using an Android application. which is not only used to keep visitor records but also to check on visitors to a specific flat. Although certain papers exist to manage visitor details, there is no system in place to obtain the flat owner's approval before allowing visitors to enter the apartment. To assist the residents with the visitor who visited their flat, we created an android-based application to

identify the visitor. People are becoming increasingly tired of manually entering visitor information. This app is beneficial to both security guards and residents.

A traditional method of communication is used in the existing housing society management system, which includes a common notice board system operated by responsible society members. The data is saved in files, the processing is done manually, and the report generation is slow. In a notice board system, one must assume complete responsibility for operating and maintaining the notice board. It builds trust with the specific person. For these common activities, a person's time schedule must sometimes be compromised. It has been observed that complaints from society members are ignored by higher management because constant follow-up is required until the issue is resolved.

The problems mentioned above in the traditional approach can be overcome by implementing a web application known as Apartment Visitors Management. This application securely stores data in a central database and prevents unauthorised users from accessing it. Employees and residents successfully logged in with auto generated user credentials. Less time is spent entering visitor information into this application because it stores data inside the application online, reducing the manual work of writing into a book. When the visitor information is saved inside this app, tracking becomes easier for the employee the next time the visitor visits. With the visitor details, a photo is also captured and stored within the application, making it even more secure and monitoring less time consuming. When an outsider comes to visit, a message is sent to the resident with whom the outsider has come to meet, letting them know before the outsider meets. The proposed system addresses system reliability and security by prohibiting unauthenticated or fictitious visitors from entering the organization's premises. The digitised and automated solution can overcome the limitations of traditional manual methods and grace as the most simple and secure system with guaranteed security.

A visitor who wants to visit the apartment can make an appointment through the Android application. The first visitor must register himself by filling out certain details such as name, address, contact number, email, and setting the username and password, as well as clicking a photo of his face for verification at the time of visit. When making an appointment, the visitor simply needs to login, enter who he wants to visit, the purpose of the meeting, and the meeting date, and then submit it.

Stage 1: On the day of the visit, the visitor must enter his id, and the camera setup will detect a human face by taking a photo of the person.
Stage 2: If an appropriate match is found, the individual is recognised and accepted by the system, and information such as date, time, image, and so on are saved in the database for record management.
Stage 3: If the individual's characteristic record does not match, he or she will inquire at the help desk.
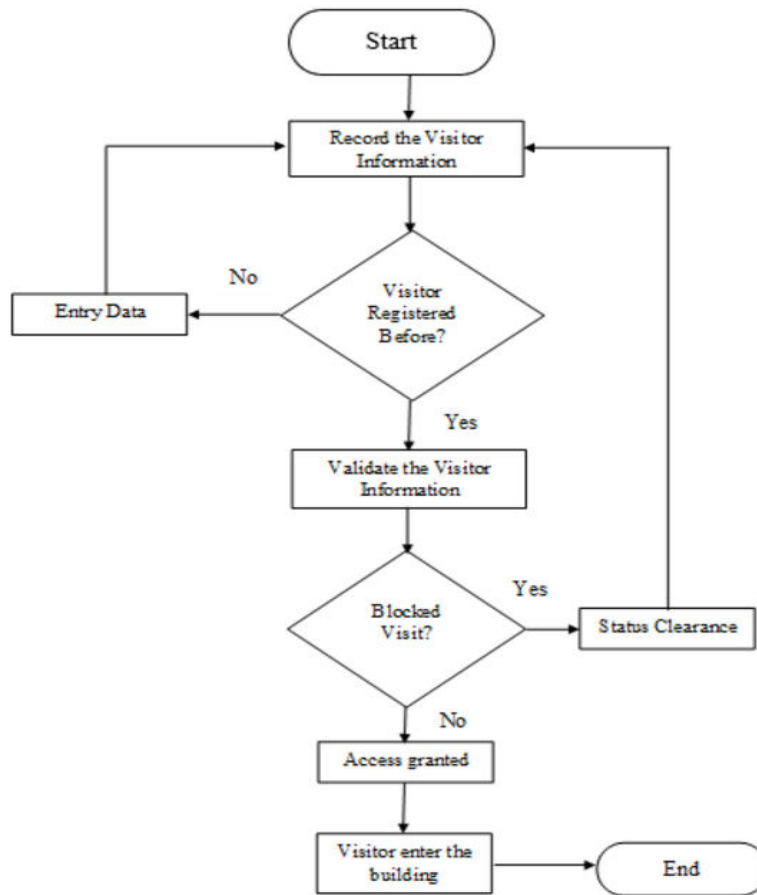
Flow Diagram

IV.CONCLUSION

The Apartment Visitor Management application focuses on accurately providing visitors who visit the flat residents with information. The administration department of the apartment where the security guard makes entry of the visitors along with their photo can track their information here on time.

The security guard sending a message to the flat residents informing them about the visitor only makes them aware of the visitor beforehand. The data within the application is secure and safe, and unauthorised people cannot access it. This application becomes user friendly and comfortable enough for security guards and flat owners to use anywhere and at any time.

As a result, a new proposed model for apartment residents is developed. The system's future potential is very promising, not only for apartment dwellers but also for villa dwellers. This technique is a simple way to recognise a visitor and also to keep track of the visitor's information.

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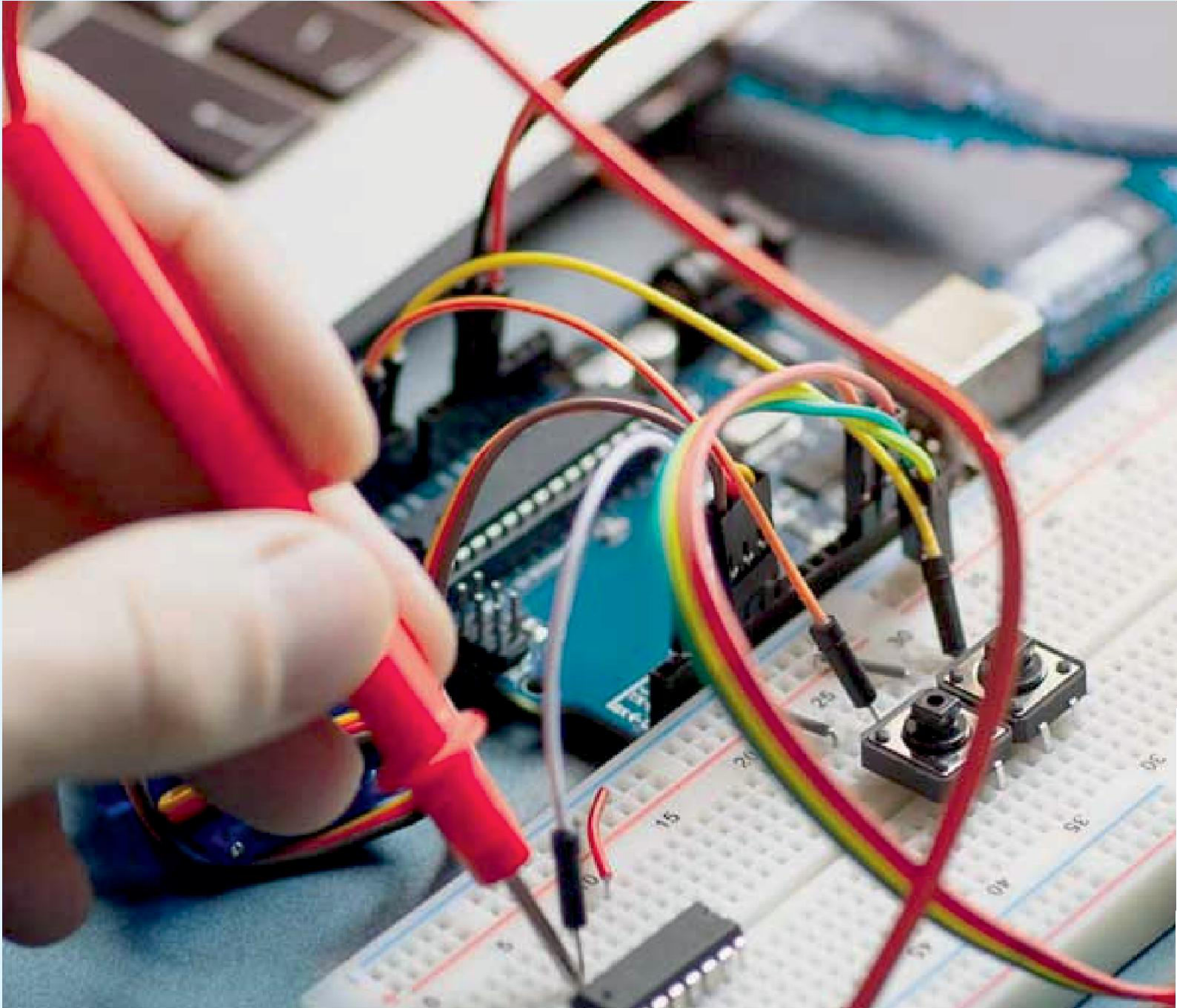
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