



## Apartment Visitor Management System

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# APARTMENT VISITING MANAGEMENT SYSTEM

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**Abstract--** In an age of digital information sharing, ensuring the confidentiality and integrity of sensitive content is paramount. This project aims to develop a secure image sharing system that allows a sender to transmit an image to a receiver via a link, while implementing stringent security measures to prevent unauthorized actions such as screenshots, screen recordings, copying, printing, and any other forms of data leakage. The proposed system leverages cutting-edge encryption techniques to protect the image during transmission and storage. Upon receiving the link, the receiver is granted controlled access to view the image without the ability to capture it through traditional screenshot methods or perform actions that could compromise its confidentiality.

**Keywords—***End-to-End Encryption, Anti-Screenshot, Anti-Copy Measures, Access Control, User Authentication.*

#### • INTRODUCTION

In an age where security and convenience are paramount concerns for residents in apartment complexes, an efficient and comprehensive Visitors Management System (VMS) is not just a luxury but a necessity. The Apartment Visitors Management System Project seeks to address these concerns by leveraging cutting-edge technology to create a seamless, secure, and user-friendly solution for managing and monitoring visitors in our apartment community. The modern apartment lifestyle is marked by a constant influx of visitors, including guests, delivery personnel, maintenance workers, and more. Ensuring the safety of residents and property while maintaining a hassle-free visitor experience is the primary goal of this project. Our innovative VMS aims to streamline and enhance the entire visitor management process, from guest registration and entry authorization to real-time monitoring and historical tracking of visitor data. This project is driven by the recognition that traditional, paper-based visitor logs and manual verification processes are not only time-consuming but also susceptible to errors and security breaches. By integrating advanced technologies such as biometrics, access control systems, and mobile applications, our Apartment Visitors Management System promises to deliver a robust, efficient, and secure solution that caters to the unique needs of our apartment community. In this project, we will explore the key components, functionalities, and benefits of our Apartment Visitors Management System. From simplifying visitor registration and automating access control to providing residents with a convenient means of managing and monitoring visitors, our system promises to revolutionize the way we ensure security and convenience within our apartment complex. Join us on this journey as we delve into the details of our cutting-edge Visitors Management System and the countless advantages it brings to our community, from enhanced security to improved resident satisfaction. Welcome to the future of apartment living - welcome to the AVMS.

## I. LITERATURE SURVEY

2.1 Evaluation of Several Papers:

2.1.1 Karimah.M.N., Junaida.S, Norazia.A and Chen.K.H.(2022) using Mykad

Which was published in First International conference. Their approach in respective article is more on system architecture or configuration, software process model, data flow diagram (DFD) and logical design of the

system not on the user acceptance towards those systems. Nevertheless, computer becomes important equipment to the organization to store the data and to process the data for any purpose. It also can be used to access and process any data and information needed easily and less in time. Therefore, it is hope that VMS application system able to solve the problem according to these scopes:

- To keep track on all the incoming and out coming visitor visited each department in the company;

- To store and create new records on the information of staff;

- To ensure the staff information are belongs to right department;

- Through this computer-based system, any data changes should be able to be done instantly because all of the data are stored in the system. update function.

2.1.2 Harish Rapartiwar , Pushpanjali Shivratri, Omkar Sonakul, Prof. Ashwini Bhugul(2021)

“Visitor Gate Pass Management System” International Journal Of computer science and mobile computing.2021 The research paper discusses the development and implementation of a Visitor Gate Pass Management System. This system is designed to automate and streamline the process of managing visitors who enter a particular facility or organization. The authors aim to improve security, efficiency, and record-keeping in managing visitor access. Overall, the research paper “Visitor Gate Pass Management System” presents a theoretical framework and practical implementation of a system designed to improve visitor management, security, and efficiency within organizations. The authors aim to contribute to the field of computer science by providing a solution that addresses real-world challenges in visitor management.

2.1.3 UTAUT by Norizan Anwar; Mohamad Noorman Masrek; Yanty Rahayu Rambli

2020 IEEE Symposium on Business, Engineering and Industrial Applications Year: 2020 There are varieties similar systems available in the market when you search visitor management system in any of search engine available. Those systems come with various features to offer to their customer with attractive price range.

Albeit the systems availability is there, however, in this century, quite limited to see any organizations to have their own system in order to manage visitors entering their premises. However, it is quite common practice the organization is registering and recording their visitor information in a logbook. Furthermore, the visitor is required to hand over their identification card (IC) or some required driving license to be kept by the security officer during their visit to that particular organization. However, this registration activity has some weaknesses and limitation such as there is a possibility of misplace the visitor logbook during guard shift exchange, visitor data or information in logbook is already exposed to every visitor and it is difficult to read and search individual hand written visitor logbook [5]. Beyond, the organization required to keep these log-book when the

number is increasing. On the other hand, the decision to develop a visitor system may depend on the needs of an organization to conserve and provide public access to a resource in that particular organization. Due to that, support for the development of visitor system shall link closely to which department of an area in that organization.

2.1.4 Mr. Mogare Sumit R, Sanagare Prathamesh Ms. Anjarlekar Shraddha S, Mr. Kharat Ratnadipak N, Mr. Shikalgar Isaq.A(2018) designed system about Biometric Identification using Raspberry Pi. In this project, security provided that means the persons from outside is not entering a home without permission of the owner. This project alerts the house owner that who is going to enter in his home. If any stranger person wants to come, then that person is seen by owners first and then the owner can decide meet to that person or not. This can be done using Raspberry pi and Image processing technology. Biometric identification is the main feature of this project. Person's face is recognized by using webcam and that details are sent to the owner mobile android app by using Raspberry pi through Wi-Fi module. The gate opens automatically by pressing the button in the android app if the owner wants to take inside that person. Gate will be automatically close after some time. This system is useful for home as well as also to society.

2.1.5 Omar Abdul Rhman Salim, Rashidah Funke Olanrewaju And Wasiu Adebayo Balogun(2017) He developed a comprehensive embedded class attendance system using facial recognition with controlling the door access. The system is based on Raspberry Pi that runs Raspbian (Linux) Operating System installed on micro SD card. The Raspberry Pi Camera, as well as a 5-inch screen, are connected to the Raspberry Pi. By facing the camera, the camera will capture the image then pass it to the Raspberry Pi which is programmed to handle the face recognition by implementing 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 percent accuracy.

2.1.6 Amritha Nag, Nikhilendra J N, Mrutyunjay Kalmath They Implemented system for improvement of the door security of sensitive locations by using face detection and recognition in 2016. The proposed system mainly consists of subsystems namely image capture, face detection and recognition, email notification and automatic door access management. Face Recognition supported openCV is brought up because it uses Eigen faces and reduces the scale of face images without losing vital features, facial images for many persons can

be stored in the database. The door lock can also be accessed remotely from any part of the world by using Telegram android application. The captured image from pi camera will be sent to the authorized person through email for safety purposes.

2.1.7 Behzad Shoarian Satari They developed system that able to manage and monitor the visitors of an organization using Apartment visitor management systems developed system that able to manage and monitor the visitors of an organization using face Recognition as an authentication method in 2013. After the authentication and verification process, valid visitor ID get printed that contains face image of the visitor, date and time of visiting and the name of the person to be visited. visitors management system (AVMS) is proposed to enhance the security of an organization from outsiders that entering the building illegally for certain purposes such as spying or stealing the organization assets.

2.1.8 Gowtham, T. Sathishkumar, S. Lakshmi Prasad And P. Arumugam, G. Prabhakara Rao, "Automation of Visitor Gate Pass Management System", 2012 2nd International Conference on Intelligent Computing, Instrumentation and Control Technologies (ICICT) Nowadays, Radio Frequency Identification (RFID) cum Biometric based Access Control System (ACS) is gaining popularity for authenticating the employees of any organization, which ensures that only the employees granted permission to get into the organizational complex. However, visitors from various organization need to be granted entry into the complex, without which organization does not function effectively as all the organization invariably depend on other organization/ companies/firms for their growth. Contrary to this, most of the terrorist attacks are accessed, planned and implemented through visitors. Thus it becomes highly essential to implement highly effective method/system to ensure the genuineness of visitors to any organization. One such system, namely Visitor Gate Pass Management System [VGPMS] is illustrated with its features. Visitor Gate Pass Management System developed in-house has been operational for a period of two years and has been performing extremely well as anticipated. The advantage gained by in-house development extends into high maintainability and availability. Moreover, it is advantageous from security point of view as well.

2.1.9 Mangayarkarasi Nehru, Dr. Padmavati "Illumination Invariant Face Detection Using Viola Jones Algorithm" International Conference of Advanced Computing and Communication System in 2011. Visitor Gate Pass Management System developed in-house has been operational for a period of two years and has been performing extremely well as anticipated. Relational Database is created with eight tables. The first table is the Master table, which contains the information about Gate-pass details created by employees. The second table is visitor transaction table, used to store all transaction

details of the visitors, the third and fourth table is laptop/material table, which is used to store the details of laptop/materials carried by the visitor, the fifth table is employee master table, which is used to store details about employees of various groups and sixth table is for storing details of approving authority belonging to various groups. The last two tables are group and group mapping table, where the group table contains information about various departments available within the group and the last table group mapping is created to achieve that the single approving authority, common for two or more groups.

## II. SYSTEM REQUIREMENTS

### 1) HARDWARE REQUIREMENTS:

- Processor : Intel core I3/I5
- Hard Disk : 512 GB / 1 TB.
- Monitor : 1.56 colour monitor or advance
- Ram : 4 GB / 8 GB
- Device : Keyboard, Mouse

### 2) SOFTWARE REQUIREMENTS:

- Operating System - Windows XP/windows10
- Software development Kit - Google Chrome, Internet Explorer, Mozilla Firefox (any appropriate or suitable browser)
- Control Panel - Xampp Control Panel/Wamp Control Panel
- Programming Language - PHP, HTML, JAVASCRIPT
- Server - Apache Web Server  
Database – MySQL

## III. SYSTEM DESIGN

The apartment's visitor management system is an organized computerized system designed and programmed to deal with day-to-day entries of visitors and the block numbers of the flat they visit. The program can look after incomers, outcomes, their name and cell number, records of time spent after entrance and other required database. Information of visitors will be sent to the flat they request to visit and the visitor will be held at the main entrance until permission is granted for them to enter. If permission is not granted then the security staff will make sure that the visitor doesn't intrude the apartment. Apartment Visitor Management System will assist you the professionalized way in which you welcome your visitors. This software is a complete Visitor Management service to improve the efficiency, productivity and security.

### MODULES :

Modules : Admin

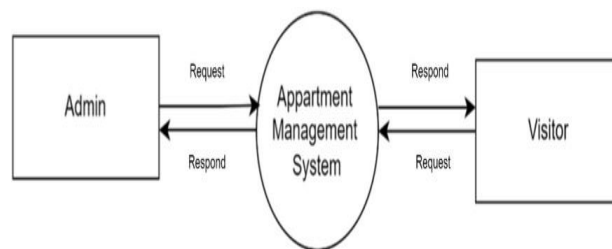
- Dashboard: In this section, admin can briefly view how many visitors visited in a particular period, total listed categories and total visitor pass created. Categories: In this section, admin can manage categories (Add/Delete).
- New Visitors: In this section, admin adds new visitors by filling their information in add visitors sections.

- Manage Visitors: In this section, admin can view and manage visitor's records. Admin also put visitors out time in the manage records section.
- Entry Pass: In this section, admin can manage entry pass (Create/View/Delete). Search: In this bar, admin can search a particular person by their name and phone number.
- Visitor B/W Reports: In this section admin can generate visitor's reports between two dates.
- Visitor Pass B/W Reports: In this section admin can generate visitor's pass reports between two dates. Admin can also update his profile, change password and recover password.

### SYSTEM ARCHITECTURE :

## 5.1 DATA FLOW DIAGRAM'S 5.2 LEVEL 0 DFD

A Level 0 Data Flow Diagram (DFD) is the simplest form of a DFD and represents the high-levelview of a system. In a Level 0 DFD, the entire system is depicted as a single process, and the flow of data between external entities and the system is shown. It provides a broad overview of the system's boundaries and the interactions between the system and its external entities.



### SYSTEM IMPLEMENTATION:

Implementing an Apartment Visitors Management System involves various techniques and algorithms, depending on the specific requirements and the technologies you choose. Here's a high-level overview of the techniques and algorithms you might consider

## IV. RESULT

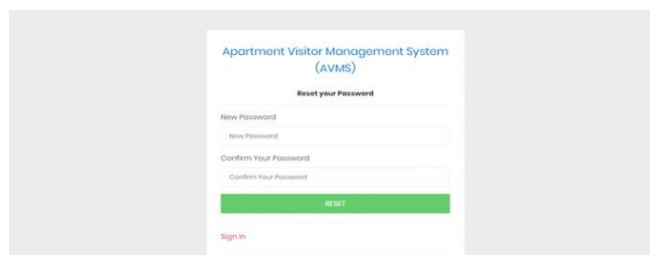


Fig: Admin page

## CONCLUSION

In conclusion, an Apartment Visitors Management System is a crucial tool for enhancing security, convenience, and efficiency within apartment complexes. By providing a structured framework for managing visitor access and monitoring traffic, such a system offers numerous benefits to both residents and property managers.

Key takeaways include:

**Enhanced Security:** The system helps ensure the safety of residents and their property by verifying the identity of visitors and maintaining a record of their presence. Access control measures can be integrated for additional security.

**Convenience:** Residents and their guests benefit from streamlined check-in processes, reducing wait times and making visits more efficient. Features like pre-registration and mobile integration enhance convenience further.

**Efficiency:** Property managers can optimize resource allocation, track visitor traffic patterns, and respond to emergencies more effectively with data and analytics provided by the system.

**Scalability:** A well-designed system can adapt to the changing needs of a growing apartment complex, ensuring that it remains effective as the number of residents and visitors increases.

**Integration:** Integration with emerging technologies like IoT, AI, and mobile apps can provide advanced features and capabilities, making the system more versatile and adaptable.

**Compliance and Privacy:** Ensuring compliance with data protection regulations and maintaining resident privacy is essential for building trust and avoiding legal issues.

**Future Improvements:** There is ample room for future work, including the incorporation of biometrics, IoT devices, machine learning, and blockchain, to further enhance the system's capabilities and security.

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