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## Visitor information management and analysis system: Neeri-pass

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### ABSTRACT

*The visitor entry system is designed to close the visitor registration center and visitor information management services, it will be able to speed up the visitor registration process, determine who is on the premises after the meeting and inform the system. This is a review paper in which the system solves the problem of appointments and it electively captures all-relevant information about the visitors and that information is recorded in the centralized database server, which provides data management and manipulation through searching for future purposes in the organization. The benefits of the Visitor Gate pass Management System are enhancing the level of security enforced in premises, providing an organized view of visitor records, and reducing the timespent on managing visitor information.*

**Keywords**— Gate-Pass, Visitor Information, Centralized Database Server, Data Management, Data Manipulation.

### 1. INTRODUCTION

With the growth of technology in the 21st century, new and creative gadgets and applications were developed to make life easier. Still, safety is the most significant component to precede research with advanced technology. The has a pass slip operation/policy implemented, which aims to secure the safety and record information, monitor the employees going out of the gate status, and record the visitors' visit. However, using the manual system of recording, it has been noted that could lead to losing files and documents when the administration needs information. Therefore, this study aims to develop and design the SSCT Automated Gate Pass System, which includes a record of visitors and outgoing staff and visitors to campus. Traditionally, manual record management required vast amounts of documents to be shipped to storage facilities only to necessitate retrieval when needed and has resulted in the unnecessary expense of both time and money.

On the other hand, many innovations are now being developed to fasten its transaction. One of the innovations is the E-Gate pass System, which aimed to enhance and upgrade the existing system by increasing its efficiency and effectiveness by reducing manual work. In addition, the software improves operating

systems by replacing the current manual system with a computer-based system. As safety and security is a concern, it stressed that the consensus arising from the professional security community is that school administrators should invest in sophisticated technologies that help school staff and students to decrease violence via a multi-staged approach to safety. It is evident from the cited studies that using a traditional-manual process may lead to inconsistency of information and difficulty in generating records. NEERI organization manual gate pass slip has no available database and system to systematically and conveniently perform transactions. To date, the center has never had a properly integrated system with an electronic gate pass slip. With this, the main challenges faced by the organization's security guards are the fragmented massive of paper-based pass slip records of the visitors, faculty, and staff. Besides, it has been noted that the concerned personnel take time and have difficulty in generating records for the decision-making of the administration. Hence, the organization is doing its best and looks forward to optimizing its quality services. Automated Gate Pass System aims to modernize the transaction slip system, which will be considered as gap management technology using PHP, XAMPP, and MySQL. Therefore, this study is considered to be the current state of the Gate Pass Present System, which is designed to manage records, especially in facilitating employee and visitor information. Records are accessed for informed management decisions.

### 2. LITERATURE SURVEY

Oki Electric Industry Co. Ltd. "US6734783 B1" by Nori Yoshi Anbar "Gate Management System" is an abbreviation for "Gate Management System." A gate management system for controlling the operation of a vaulted gate that includes a biometrics information management device with a first memory that stores biometric information of at least a first and second person, with the first person required to be accompanied by the second person to pass through the gate and the second person being able to pass through the gate alone. A gate management device has a second memory that temporarily stores biometrics information from the first and second people in the second memory and compares the temporarily stored information with the information stored in the first memory. A controller that controls a gate operation based on the outcome of a comparison performed by the gate management device.

"US7755480 B2" by Shoji Suzuki, Hiroshi Hanau, and Fumio Enmei of Hitachi International Ltd. "Intelligent Security System." A security system with processing maximized for monitoring and detecting abnormal actions of a Surveillance Subject. A sensor network security system SNS monitors an individual's action record, and the development of an action event is reported as inaction, and the corresponding processing of the security system SCS is determined based on this action.

Honeywell International Inc. "US7362210 B2" by Rida M. Hamza and David W. Meyers "System for Gate Access Control." A system for providing stand-off biometric verification of a vehicle driver at a control gate. While the vehicle is moving, including pre-verification. System and post-verification systems The pre-verification system is installed before a facility's entrance and consists of an RFID vehicle tag reader, an RFID personal tag reader, and a facial detection and recognition (verification) system. The RFID vehicle tag reader scans and reads an ID from the RFID vehicle tag of the vehicle attempting to pass through the gate. The RFID personal tag reader reads an ID from an RFID personal tag carried by vehicle personnel. For the driver, the facial detection and verification system scans and reads facial images. The post-verification system is installed on at least one entrance and one exit for post-verification to ensure that the vehicle entering the entrance or leaving from the exit is the one that was verified/denied at the control gate. The post-verification system in one embodiment consists of an RFID personal tag reader and an RFID vehicle tag reader. The post-verification system may also include a facial detection and recognition system in another embodiment.

"Gate Management System by Face Recognition Using a Smart Phone," by-Kwon, Ki-Hyeon; Lee Hyung-Bong, Korean Society of Computer Information. The design and implementation of a gate management system based on face recognition using a smartphone is described in this paper. They are looking into different algorithms for face recognition on smartphones. Face detection is the first step in any face recognition system. Color segmentation, template matching, and other face detection algorithms were investigated, as well as Eigen & Fisher face recognition algorithms. The algorithms were profiled first and then implemented on the Android phone. They made a trade-off between algorithm accuracy and computational complexity while implementing the algorithms, owing to the fact that the face recognition system is implemented on a smartphone with limited hardware capabilities.

**3. METHODOLOGY**

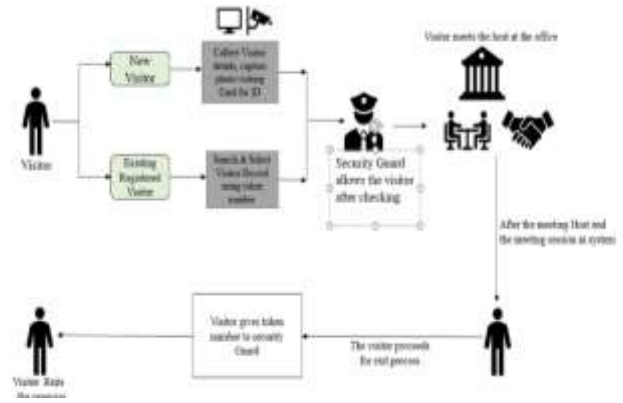
Gate entry is currently controlled by two main gates in organizations. The inviting person must sign and fax a gate pass form to the Organization Security office before allowing a guest to enter by car. This is not an efficient method, and the reasons are simple. Even in this modern era, some organizations employ Gateman/Guards who use registers to record information about a person or vehicle.

As a result, Guard performs no authentication, resulting in numerous misses.

The problem with the current system is that any fax owner in the world can issue a gate pass, allowing unwanted people or vehicles to enter a company's premises. There is no control over the guest's arrival. Anyone who wants to join the company is welcome to do so. It is possible that some criminals will enter and park their vehicle in the company parking lot, and the police will begin questioning the guards, leaving them helpless. There

is no way of knowing who, when, or by whom an invitation was extended. The presence of information in a register does not imply that it is accurate. There is no authentication procedure. To address the aforementioned issues, the topic's project will replace the current system and register entry with a sophisticated Intranet system. Data entry in the register is a time-consuming and laborious task. However, the New Gate Pass System replaces the existing system and makes the process faster and more reliable.

- a. Modules
  - 1. Visitor
  - 2. Guard
  - 3. Employee
  - 4. Admin
- b. Architecture/Workflow



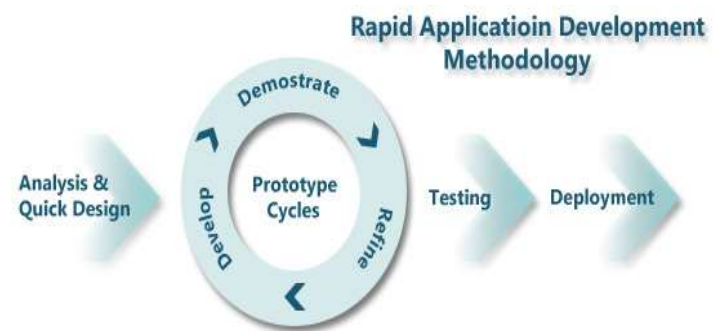
**Fig 1: Basic working of the system**

c. Algorithms

In this project, we used a random forest machine-learning algorithm for both classification and regression problems. Random Forest is a well-known supervised learning machine learning algorithm. Random Forest is a classifier that consists of several decision trees on different subsets of a given dataset and takes the average to improve the predictive accuracy of that dataset. Instead of relying on a single decision tree, the random forest takes the prediction from each tree and predicts the final output based on the majority vote of predictions.

d. SDLC method

The RAD module is used to develop this project. RAD is a linear sequential software development process model that emphasizes a short development cycle through the use of an element-based construction approach. If the requirements are well understood and described, and the project scope is constrained, the RAD process allows a development team to create a fully functional system in a short period of time.



**Fig 2: Rapid application development model**

#### 4. RESULT AND DISCUSSION



Fig 3: Visitor form/Gate pass form

Here in the Visitor module to register the respective visitor has to insert the data asked while filling this form and then only he can proceed further.



Fig 4: Guard login form

In the Guard module if he/she is a registered guard he/she can simply insert the id allocated to the respective or else he will have to register himself first.



Fig 5: Admin register form

In the Admin module first, the admin will have to register himself then an id will be generated. To register he will have to fill out this very basic form.

#### 5. CONCLUSION

Organizations can increase the level of security enforced on their premises by utilizing VGMS. The system allows for free, secure, quick, and easy visitor registration.

- Computerized records improve data management and manipulation through searching and report generation.
- Its installation is simple and thus does not necessitate the use of professionals. The VGMS system is simple to maintain and operate
- It provides dependable and efficient security protection on which one can rely.
- Unauthorized and unwanted users are not permitted to enter the commercial space.
- In the future, biometric functions can be combined with the existing system to increase security.

As a result, can conclude that this system would be an efficient way to obtain a Gate Pass in any organization. Using this system, the use of paper is drastically reduced, and gate passes can be obtained using an NFC card, which proves to be a more secure and simple process that also saves time in obtaining gate passes and thus simplifies the procedure.

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