**Chapter 1**

**THE PROBLEM AND ITS SETTING**

Abstract:

The Project 'Electronic Gate-pass is to record the details and various activities of the user. It simplifies the task and reduces the paperwork. In this project, we are reducing the paperwork which is done by giving the School ID. We are providing the electronic version of the electronic gate pass. We provide appropriate training to the user which suit their specific support has been provided at key points within the academic calendar. Admin is monitoring all the user and system. In this project, the only faculty is approving the user gate application if they want to allow student, then gate pass system is a pop-up on the guard system database. Training has been provided timely basis and they got trained as the Gate pass System is new and rolled out to their area of responsibility. At the moment we are in the very early stages, so it is difficult to put a specific time on the training, but we will keep people informed as plans are developed. The system is very user-friendly and it is anticipated that functions of the system are easily accessed by administrators, Faculties, students, and applicants.

Keywords:

Masbate Colleges E-Gate pass, Student ID, Database

**Introduction**

E-Gate Pass provides an easy method for the front desk officer to search the ongoing visitor of the day. They will be timely notified of the current visitor visiting their department. Searching method is also faster and the system will give output that user needs. Currently, most organization is using the named method in keeping track all the incoming and out going visitor records in each of the department. Problem raised when at curtain point of time the number of visitor visiting the department increasing and unable to manage and messed up. On top of that, a security issue also is the main issues in generating visitor pass in that particular organization. E-Gate Pass also helps user access information inquiry faster. Compared to the manually system, user need to go page by page to search information. Imagine there was hundreds of visitor coming in and out. However, with the new system, user only need to search via card number and as a result, the system will display related output that been entered by the user earlier. Problem such as waiting for a long time queue will be no more an problem and will give an impression of well-organized system.

STATEMENT OF THE PROBLEM

1. What are the problems by the persons involved using the present system?
2. What are the factors which the use of Electronic Gate Pass?
3. What is the profile of the persons involved(students & visitors) ?

3. CONCEPTUAL FRAMEWORK

The study was anchored in the article [4] that technologies would help security officers detect and respond to violence committed and potential violence, which have the ability to improve school safety. Further, it stipulated that there shall be an established mechanism for the students to help in crime prevention, safety, and security of the concerned Higher Education Institution (HEI) [5]. To create a successful Electronic Gate Pass System, the researcher decided to affix the information gathered from the concerned offices, efficiently managing and monitoring the campus gate transaction. Input-Process-Output (IPO) Model was used in conceptualizing the development of the system, as shown in Figure 1.0. The IPO Framework involves the stages of Input, Process, and Output with its variables. Implementation and evaluation were also included after the said model is done

2.1 General Objectives

To develop an E-Gate Pass System designed to monitor and facilitate the process and information of the students, employees, and visitors passing campus gate.and less in time. Therefore, it is hope that E-Gate Pass

application system able to solve the problem

ABSTRACT E-Gate-pass Management System was designed to replace traditional visitor registration and visitorinformation management activities in the premises. With this system, you will be able to expedite the visitorapplication process, determine who is the visitor of the day expected through the admin dashboard.This is an assessment paper in which system can solves the problem of appointments and it electivelycapturing all-relevant information about the visitors and that information is recorded in centralized databaseserver, which provides data management and manipulation through searching for future purposes in theorganization.The benefits of E-Gate pass Management System (E-GMS) is enhancing the level of security enforced inpremises, providing an organized view of visitor records and reducing the time spent on managing visitorinformation.Admin will be monitoring all the user and system. In this system, only the admin is approving the visitor E-gate application if they want to allow visitor, then gate pass system is a generated official document on theadmin system database.The system is very user-friendly and it is anticipated that functions of the system are easily accessed byadministrators, departments.The objective and scope of this research Proposal E-Gatepass Management System is to record the visitordetails and various information of the user once apply online. It simplifies the task and reduces thepaperwork. In this project, we are reducing the paperwork which is done by giving the paper gate pass. Weare providing the electronic version of the paper gate pas

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introduction

1.1 Background The development of technologies in the today’s world has made all the manufacturing fields industry automated. In general automation is defined as technology concerned with performing a process by means of programmed commands combined with automatic feedback control to ensure proper execution of the instructions. The resulting system is capable of operating without human intervention. The development of this technology has become increasingly dependent on the use of computers and computer related technologies. Consequently, automated systems have become increasingly sophisticated and complex. Advanced systems represent a level of capability and performance that surpass in many ways the abilities of humans to accomplish the same activities. In this world, everyone is busy with their own work and tight schedules. Hence, the thought of automatic gate barrier system for vehicle detection has been introduced. Here the major priority is time, efficiency and security. The use of manual gates system is completely reduced and use of RFID technology and other detection techniques are being implemented for automatic gate barriers in toll gates and other vehicle or traffic detection purposes. Radio Frequency Identification is being used all over the world from a very long time. Recently an annual growth of 24% was experienced in the RFID implementation. It is used in many different applications which are numerous. Some of the real world examples where RFID is used are logistics and supply chain management, attendance tracking system, access control, Library systems, laundry management, real time location systems and many more. Quite simply, this technology works on radio waves. RFID mainly consists of three components RFID reader, RFID tag and antenna. The tags receive data and the reader transmits radio waves to the tag. The reader could be a stationary or a handheld reader. The tags can be classified into three types based on the power supply they are active tags, passive and semi-passive tags. These tags and reader contain an antenna which enable them to transmit receive and respond to the signals. They also store information which is used to recognize the item attached. The other benefits of RFID are that the tags have a read-write option unlike in barcodes, i.e.; they can be read or modified only by its authorized users. RFID frequencies range from low frequency to microwave.[1] Object detection, this technology is being widely used in many applications like face detection, human detection, and character recognition and vehicle calculator. It can be used for various purposes like retrieval and surveillance also. Object detection is linked with computer vision and image processing which is used for detecting objects in video and in images. In OpenCV library there are many algorithms used for object detection, each algorithm has its own equation for feature calculations which helps in detecting objects. The process involved in object detection is for determining location, size and position of the object in the input picture. The common method for object tracking is upon the color based approach (pixel values), this is used for its robustness and adaptability but the speed is a bit less as it requires to test all the windows in the frame and has computational complexity.[2]

1.2 Statement of the problem

Entry to a gated community or an institution is typically a manual process and burdensome and subject to errors ranging from forgotten passcodes and lost "clickers" to the outright transfer of access credentials. Manual processes also often choke main entrances with traffic during peak travel times. Traffic management can be complicated too, controlling who among the contractors, local help and different visitor is permitted requires critical assets. On paper, it gets exceptionally confused. Fixing camera and capturing picture of each vehicle would also be bit confusing. • Other system has been able to achieve this goal with a read range below 3 m. Read range above 3 m using passive RFID systems have not been achieved yet. So to avoid all the confusion, the proposed system uses RFID tags and Thai – ID cards for detection purpose, for the automation of the gate barrier. 1.3 Objectives This system is divided into two parts for the automation of the gate barrier. The first part is by using RFID technology, the second part is by using a camera for the card detection. Using RFID technology: This part is implemented using an ARM embedded board and UHF RFID reader and tags. In this system, each car is given a passive tag, whose unique code is already saved in the micro-controller. The RFID reader fixed near the gate barrier will be emitting RF waves continuously. When the vehicle with the tag reaches the read range, the reader will recognize that particular tag, compares it with the code saved in the controller and automatically the gate will be opened. Using card detection technique: This part of the system uses Raspberry Pi board and camera. This system is implemented for the Thai citizens, where the driver needs to display his/her Thai national Citizen ID infront of the camera. As the card gets detected by the camera it sends signal to the motor and the gate is opened. • To get a read range of 3-5 meters using passive RFID reader. • Interfacing the reader to the embedded system board. • To detect Thai-national ID card by using Haar cascade classifier. • Interfacing of ARM board and Raspberry Pi board • To solve the real time gate issue, so that it does not close the path before the vehicle leaves within the time limit set, for this infrared sensors were installed to the gate.

1.4 Limitations and scope

In this proposed system, RFID and Haar classifier for detection have been used for the automation of gate barrier. The basic aim of Automation concept is to reduce the man power & to increase the accuracy of the system. Figure 1.1 shows an automatic gate barrier system. So, we can able to achieve the same with our own built concept. Some limitation of this thesis are: 1. The servo motor used is made to rotate at a 90 degree angle. 2. In this thesis, an assumption is taken that the vehicle will always be in line of sight of the reader and only one vehicle at a time is arrived. 3. Instead of a car, a bicycle is taken for testing. 4. Only Thai – ID card can be used for the purpose of detection. 5. The IR sensor for obstacle detection range is just 100cm. Figure 1.1 An automatic gate barrier system 1.5 Structure of the thesis The outline of this thesis is In chapter 2, Information on RFID technology, object detection methods and literature review of some of previous related studies are provided in brief. In chapter 3, the methodology of this thesis paper is provided. In chapter 4, testing and experimental results of this thesis provided. In chapter 5, conclusion and recommendations are provided.

EXISTING SYSTEM OF GATE PASSMANAGEMENT SYSTEM  
Currently, in many organisations and companies Gate entry iscontrolled by two main gates. Guest access by car requiresgate pass form signed and faxed to Organisation Securityoffice by the inviting person.This is not an efficient way and reasons are pretty simple. Insome organisations, even in this modern era Gateman/ Guardusing registers to the entry about person or vehicle.Whichmeans, no authentication is done by Guard and which resultin many miss happenings.The problem with the current system:Any fax owner worldwide can issue a gate pass. Which resultsin undesired people or vehicle entry in companies’ premises.There is no control over the guest arrival. Anyone willing toenter can enter in the company. It may be possible somecriminals may enter and park their vehicle in companyparking area and police start asking a question to guard andthey are helpless.There is no way of knowing who and when and by who wasinvited. Regarding in register does not mean that informationis true.There is no authentication process

The project in the topic will replace the current tax policy andregister entry by sophisticated Intranet system to overcomethe above problems. Noting data in the register is verylaborious works as well as time-consuming.But New Gate Pass System replace the existing system andmake the process faster