E-SAMAN SYSTEM USING GSM TECHNOLOGY

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ABSTRACT

Information system can be defined as a set of interrelated components that collect, process, store and distribute information to support decision making and control in an organization besides supporting decision making, coordination and control. Information system may also help managers and workers analyse problems, visualize complex subjects and find the best solution in decision making. Based on experience current technique or manual method in the operation management of summons is by writing all summonses of students into log books or using piece of paper. This technique can make waste of paper and data about summon. If papers of summon are losing it can make loss of summon information. UMP security guard office use the paper as summon medium is not suitable because it UMP is engineering university and it not secure because all staff of UMP security guard officer can summon people without any offenses. E-Saman system using GSM modems are solution for this problem. This system will store the summon information automatically and offender receive the message information about traffic offender. This system is combination two systems are mobile and GSM modem. The security officer summons the offender using mobile application and sent the information into database. The administrator will sent message to offender using GSM modem system. The technology using for this system are GSM modem and mobile application. Other technologies are included such as Adobe Dreamweaver and Microsoft vision. All there technology use to make this system more prefect and useable. The result form these systems are the security officer easy to summon offender and can save paper and time. The administrator also more easy to manage the system and can send message to offender using GSM modem. The user also can check their summons using this system.
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CHAPTER 1

INTRODUCTION

1.1 Background

According to Rosdy (2005), information system can be defined as a set of interrelated components that collect, process, store and distribute information to support decision making and control in an organization besides supporting decision making, coordination and control. Information system may also help managers and workers analyse problems, visualize complex subjects and find the best solution in decision making. Information systems contain information about significant people, places and things within the organization or in the environment surrounding it. Information system knowledge is essential for creating successful, competitive firms, managing global corporations, adding business value and providing useful products and services to customers.

Nowadays, an information system is very important instrument for creating value for the firm. Information systems enable the firm to increase its revenue or decrease or that improves the execution of business processes. It also increasing the efficiency and accuracy of the organization information and indirectly increasing productivity of an organization. Based on experience current technique or manual method in the operation management of summons is by writing all summonses of students into log books or using piece of paper. This technique can make waste of paper and data about summon. If papers of summon are losing it can make loss of summon information. UMP security guard office use the paper as summon medium is not suitable because it UMP is engineering university and it not secure because all staff of UMP security guard officer can summon people without any offenses.
However, as the information technology advanced, the conservative implementation has needed to be changed to electronic management concept. The E-Saman system is the new concept of system management where the entire organized summons will be supervised by on-line and offline system. This new concept of system management will help the Security Department of UMP to control the students and staff summon so that it will be more effective and efficient. The E-Saman system is actually required for the university in order to prepare it towards the World Class University. The system can represent the university to the outside world. It will be a symbol of the reputation of our university by using computerized or advance technology in the management information system.

1.2 Problem Statement

Security Department at UMP is currently using the manual system in handling the student’s summons. Thus, the usage of the current system is less effective and less systematic where the employee in the Security Department has to recheck the students summons manually. Summons in the UMP system still use the current system where a security guard using paper to record the offense before being stored into the database. According to Captain Azam Bin Ahmad, UMP Security Officer, their staffs have to spend a lot of time to recheck thousands of students' summonses. Summons rechecks is important to ensure that all summonses are added into database to facilitate students and staffs look back their previous summons.

This situation, involves high costs in paying staffs' overtime-working hours. Besides that, it creates troublesome to the staff especially during the university's convocation season. Almost thousands of summonses need to be rechecked and after that, they have to send notices to student directly to their address. Students are required to pay for summonses because it treated as debt by the university. Students have to pay summonses before they are eligible for transcript. Because of that reason, this project is proposed to ensure all the problems relating to students summon can be solved and indirectly can help the UMP by gearing its processes to the computerized system. The current system is not secure for student and staff because summon can make as a randomly, it just use the paper and not need any personal information just
id from card matric. If UMP security guard office knows the number of matric card, it can make summon and give the paper of summon to offender or just save into log book summon information.

The current system may bring to the data error or incorrect data when the officer records the data into the system. By Using the previous system may lead to the small mistake such as numbers, date or spelling. These types of mistakes will affect the information and the wrong documented information will be transfer in to the system. As a result, by using the new system, those types of errors can be avoided and it is easier to be organized. On the other hand, the manual documentation may cause the data lost. This is because the information is only recorded in a piece of paper and it will be given to the offenders. The paper may lost and missing.

1.3 Goals & Objective

The goal of this project is to develop an E-Saman System in UMP. The following objectives are set:

i. To identify vulnerabilities of E-Saman system by performing test on the system.
ii. To develop E-Saman system with database system and JSM system.
iii. To improve security of technical system by adding some additional security to E-Saman.
iv. To perform testing on the system and finding any deficiency for further improvement
1.4 **Scope**

1. **Database System and Global System for Mobile Communication (GSM).**
   This system is developed to store the database of E-Saman System. The data will be saved directly into database or memory card. The information from the database will be send to the offenders by using a system called GSM

2. **System User**
   The system target user is the UMP Security officer. The UMP security officer use this system to record the offense did by the student and staffs. The records will be automatically inserted into the database

3. **Function**
   The function of the system is to help the ump security officer in documenting student and staff traffics fault. The fault is directly recorded into the database and JSM system will send the data to the offenders through SMS

1.5 **Methodology**

   Figure 1.1 shows the stage of System Development Life Circle (SDLC). This SDLC is choosing because it fits the approach for developing the system which relies on technique the produce deliverables intended. SDLC present guidance for selecting appropriate methods, technique and tools based on the specific requirements for the project. With this approach, project is desired to move consecutively according to steps planned for each phase. The phases involved for this project equipment are planning, analysis, design and implantation and lastly the maintenance phase. All of the phase or step duration of this system complete can be referred as in the Gantt chart at appendix A
1.5.1 Planning

The project is identified in the planning phase. The title for this project is E-Saman System that function using android application and save data into database. After that, the system will sent the information using short message service (SMS). Once the project title is identified, data about E-Saman system are collected and requirement regarding the project are gathered. At this point, lot of research is needed to be done for obtaining ideas on how to implement the project and gathering requirement to fulfill the project needs. Information from current system is studies for example methods available for current E-Saman system and what are the advantages and disadvantages for the existing Summon system. With that information, research can be done to find if any improvement can be done to provide a better system. The most important thing that need to be planned is time schedule for develops the project is specific period. Apart for that, the planning phases involve preparation to know how the E-Saman system is going to be developed and why the system is to be built.
1.5.2  Analysis

In this analysis phase, analysis of the current summons system and its problem are made. This is known as real-time system. In this phase, the business requirement about the summon management system also are gathered. In this phase also, the similar E-Saman System are studied and some improvement will be make to improve the current system. Analysis is also done to ensure who, when and where the system will be made for. Problem analysis and requirement analysis is also studied in depth in this phase. The project required two types of tools that are hardware and software.

1.5.3  Design

Design is an important phase in developing this system. There are several things that are designed in this phase. The first is the architecture design. This includes network infrastructure, hardware and software selection. In this project, network infrastructure for the summon management system is design. Next is the interface design that will determine how users will use the system. In this phase, the program will also be defined what program needs to be written and what each program do for the system.

1.5.4  Implementation

The implementation phase is the critical phase in developing the E-Saman system. It involves programming parts to develop the system, and a series of tests to ensure that system is works smoothly. The tests that will be conduct are student are develop the system and lecture. Once the system is working as intended and the test result are as expected, then the system is ready for use. The third project objective can be achieved after completed this phase.
1.5.5 Maintenance

The maintenance phase, it not included for this E-Saman system. For this system, not need to maintenance the system because it built for prototype.

1.6 Conclusion

In this chapter, it took more works on finding the fact on Internet and books according to the project development. Besides, the methodology for the project also has to be figure out because it is compulsory for developer to make sure the project run smoothly. Both hardware and software requirements should be defined in details to make work become easier. By make the specification according to the fact that has been searched, each developer will find out that the project become more efficient without any doubt.
CHAPTER 2

LITERATURE REVIEW

2.1 Overview

In this chapter, there will be seven subtopics that will cover from the definitions of the Mobile Applications for E-Saman System, existing mobile applications, and software requirements to develop the application.

Subtopic 2.2 will describe the definition and structure of E-Saman System. Subtopic 2.3 will define and discuss about Saman, while subtopic 2.4 will explain the concept of GSM system. Subtopic 2.5 will cover on the existing mobile applications for E-Saman system and discuss in detail on the specifications and functions of current applications that can be improved on this project. The last subtopic 2.6 will discuss in detail about the software requirements in developing the applications in this project.

Overall contents in this chapter will provide reader with the detail information of the method implementation that will be carried out in this project.
According to DBP, summon means warrant for the traffic offenses to come to the court for being discussed. The traffic citation is released by the authorities to the traffic offenses. Within summon, police and JPJ could avoid people from doing any traffic violation continuously. According to Dial-A-Law summons is a legal document issued by a court (a judicial summons) or by an administrative agency of government. A judicial summons is served on a person involved in a legal proceeding. Legal action may be in progress against the person, or the person's presence as witness may be required. In the former case, the summons will typically announce to the person to whom it is directed that a legal proceeding has been started against that person, and that a case has been initiated in the issuing court.

The definition of traffic offences as a crime is problematic. According Willett (1964), provided that both the definition of the law and criminal sociology. From a legal standpoint, though minor traffic offenses defined as crimes. In terms of sociology, criminal acts and offenses defined as involving deliberate intent, injury to person or property and dishonesty. Most traffic offenses are not included in this definition of criminal sociology. According Stylianou (2003), focused on the perceived consequences of crime as a dimension affecting perceived seriousness. Most traffic offenses are victimless crime without consequence and therefore not in a social consensus serious offenses shown by the current laws and enforcement budget. The main objective of the enforcement of traffic laws is to improve road safety. This is achieved by preventing motorists from proven guilty in connection with a road accident and injury (European Transport Safety Council (ETSC), 1999).

Based on the system, traffic summon is the main focuses in this project. According C.Mitchell (2011), Traffic laws are a nearly universal means of enforcing safety on roadways and among motorists. Breaking these laws usually result in a penalty. Penalties are generally assessed based on state information, and can carry a penalty of a nominal fine and a criminal court summons. Some jurisdictions will issue tickets for all offenses, the function is to assign blame and fix disputed penalty. Others instead will issue a traffic summons for the offense, forcing the recipient to appear in...
court to have a sense of guilt or innocence is determined. Still others use both tickets and summonses, depending on the offense.

Quotes provided by the police on an almost constant in most places for offenses including speeding, illegal or manoeuvre reckless driving, and driving under the influence of alcohol or drugs. Unless the officer chose to let the driver off with a warning, he usually writes praise or ticket, explain the offense. Sometimes, the tickets are presented as a statement of wrongdoing, which assumes guilt and punishment fixed list. In other places, or under other circumstances, the ticket can be written in the form of summon.

According to John Allen (2010), traffic summons, sometimes called a speeding summons if speeding is an issue, identify the alleged offense, but require court appearances to prosecute innocent motorists and determine the appropriate sentence. Most of the times, there were only moving violation eligible for traffic summonses. Parking violations, damage to equipment such as lamps burned out, and any other traffic violations that do not involve actual driving ticket usually only be liable, not the date of the court. Tickets for violations of misconduct consider moving can almost always be challenged in court. The difference with traffic summons is a court appearance required. Typically, only a straight ticket recipient can choose to receive a charge, pay the fine, and move on. Receiver’s summon had no choice.

A traffic citation is a summons issued by a law enforcement officer to the person who violated traffic laws. A traffic citation is known as a traffic ticket. This passage is a piece of paper that describes one or more violations that may have been done. When receiving traffic citations, the accused must appear before the court to pay the fine or contest the charge associated with the charge. A traffic citation may include one or more violations, depending on the violation made. Traffic citations may be issued for violations such as illegal lane changes, speeding, lack of insurance, no seat belt fastened, or a broken tail light.
2.2.1 Summon System of Malaysia's Road Transport Department

Malaysia's road transport department is (JPJ) the government agency responsible implementing rules of the road in Malaysia. Their responsibility is to make sure the roads in Malaysia are safe and road users to comply with the rules of the road that have been set. JPJ also is the agency that can issue summonses to road users if committing the offense. JPJ still using the current or manually system for their summon system. If have traffic offenses committed by road users, JPJ officer will ask for a driver's license and identification cards from traffic offenders. JPJ officer will record the offense committed in his offense or summons papers. In the summon papers will be recorded the following information:

i. Name
ii. IC
iii. Address
iv. No. of vehicle registration
v. No. trailer
vi. Types of vehicles
vii. Sections offense.
viii. Place
ix. Date
x. Hours
xi. Types of offenses committed

Traffic offenders will sign arrangements are in the summons and the JPJ will deliver the summon papers to the traffic offender. Information was recorded offenses will be manually entered into the computer by the JPJ officer. This information should be inserted into the computer and stored in the database. The process of entering data into the database would take a day or two. Data should be inserted into the database in order to facilitate traffic offenders check offenses have been committed by traffic offenders. Record of offenses will be deleted from the database after the payment is made.
Figure 2.1 shows the example of summon paper from JPJ officer. From this paper can see the details about summon. The summon paper have many form need to fill by JPJ officer.

![Summon Paper Example](image)

**Figure 2.1:** Example of summon paper from Malaysia's Road Transport Department

### 2.2.2 Summon System Majlis Pembandaran Kuantan

Majlis Pembandaran Kuantan (MPK) is a powerful agency in the district of Kuantan. MPK perform the tasks of which are make sure Kuantan in peace harmony and peace. MPK also ensure the vehicle around Kuantan placed in designated areas. For vehicles that are not parked in designated areas, MPK will issue a summons to the vehicle. There are two types of offenses will be summoned. The first offense is parking in an unauthorized and a second offense is not displaying parking coupons vehicle he front of the vehicle. (MPK) using a special tool to sue the vehicle. Tools can be used to summon the vehicle and issue the paper suit. Tools can also be used to check the temperature of the windscreen of the vehicle is parked know the how long vehicle parking. In the summon papers will be recorded the following information:

i. No vehicle
ii. Type of vehicle
iii. Vehicle Model
iv. Color
v. No offense box
vi. Name of the road
vii. Place of offense
viii. Date
ix. Time
x. Section and the particulars of the offense
xi. No coupon
xii. The amount of payment suit

For the amount of fine imposed is based today. If the fine is paid early the fines imposed are cheaper. There are three time payment set by the MPK.

i. Payment within 14 days
ii. Payment after 14 days
iii. Payment after 30 days before legal action

The data from traffic offenders were issued summonses will be fed into the database to facilitate the traffic offenders to check their summons. Data offenses will be deleted from the database after payment is made.

2.2.3 Summon System of Polis Traffic Diraja Malaysia

Traffic police is the government agency that ensures roads in Malaysia are safe and road users to comply with the rules of the road set. Police can issue summonses to traffic offenders if they commit traffic offenses. There are two types of offense summonses issued by the police traffic Malaysia:

i. Notice of Summon POL 170A
Notices issued for offenses committed by vehicles without the presence of the driver or the offense committed by traffic offenders without detained by police as speed traps using LSD (Laser Speed Detected) or Laser Speed Trap and RLC (Red Light Camera) or camera Traffic Lights red.
ii. Summon POL. 257

Summons issued directly to traffic offenders when the offense is detected.

Figure 2.2 show examples of two pieces of summon paper from police traffic Malaysia. From this two summon paper can see the type of traffic offences and the details about summon paper. This paper will be given to traffic offenders.

![Example of paper summon from Polis traffic Diraja Malaysia](image)

Figure 2.2: Example of paper summon from Polis traffic Diraja Malaysia

Figure 2.3 show the speed track camera used by police traffic Malaysia. Speed track summon is summoned applied to vehicles exceeding the speed limit on the road. Speed track camera is used to capture images of vehicles exceeding the speed limit. The camera will record the speed of vehicles exceeding the speed limit and record the data to summon the vehicle.
Figure 2.3: Example of speed trap camera

Figure 2.4 shows the sample copy of summons letter, compound due to traffic offences. It is a piece of paper with two pages which contain two parts. First page is about the “Demand for driver’s particulars Section 115 Road transport Act 1987 and the other second page is about “Offer to compound traffic offences”. This summon notification letter should be delivered within one month after the summons is issued.

Figure 2.4: Sample copy of summons letter.