GSM BASED DEPARTMENT AND QUESTION PAPER SECURITY

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ABSTRACT

Education is simply the soul of a society as it passes from one generation to another However today, when we read news articles as cited below, we realize that, knowingly or unknowingly this soul, which was once compared to the education by some great philosophers has got irrecoverably corrupted. One of the main cause for this is exam paper leakage. This must be considered seriously and suitable action must be implemented. We propose a system in order to prevent exam paper leakage. In this project the question papers locker will be supplied from the board of examinations, which can be opened through online from the board itself. But in the question paper box gets opened at the scheduled time from the board itself through wireless just by clicking the button .If anyone tries to break the locker at the college the message will be transmitted to the technical board .As well it detect fire and college tools.

1. INTRODUCTION

Ancient China was the first country in the world that implemented a nationwide standardized test, which was called the imperial examination. The main purpose of this examination was to select for able candidates for specific governmental positions. The imperial examination was established by the Sui Dynasty in 605 AD and was later abolished by the Qing Dynasty1300 years later in 1905. England had adopted this examination system in 1806 to select specific candidates for positions in Her Majesty's Civil Service. This examination system was later applied to education and it started to influence other parts of the world as it became a prominent standard (e.g. regulations to prevent the markers from knowing the identity of candidates), of delivering standardized tests.

A test or examination is an assessment intended to measure a test-taker's knowledge, skill, aptitude, physical fitness, or classification in many other topics (e.g., beliefs). A test may be administered orally, on paper, on a computer, or in a confined area that requires a test taker to physically perform a set of skills. Tests vary in style, rigor and requirements.

Every year during time of examination we will come across News in the newspaper and television about question paper leakages and hence the exam is being postponed / cancelled.Sometimes the information related to question papers leakage will not be known to the universities itself. Hence some students get good ranks by these papers and those students who had worked hard have to compromise with less rank and this factor will have negative effect on the growth of the society. Thus by considering the problems faced by the students and society a plan has to be made to implement a system which will help to stop this malpractice of leaking of the question paper.

This Project is based on GSM modem to prevent the leakage of examination question papers. This project can also be used to protect some secret and confidential papers related to our country.

2. LITERATURE SURVEY

Today the system which is in wide use involves the practice followed from many years. This involves the sealed boxes containing the question papers which will be distributed to the examination centers. This system involves many disadvantages which may lead to leakage of question papers at various instances while the box is moved from printing location to examination centers. This happens due to easy tampering of sealed boxes and more human interference.

The other method which is in use today involves the mailing of the question papers from the university to respective colleges prior to examination. The colleges take the printouts of the question paper and then the examination procedure follows. Even this particular method also involves many disadvantages. The sever breakdown may occur, website may be hacked, and more than 100 colleges should take printouts which involves the threats like power failure, system failure and leakage of the paper.

As we are seeing the leakage of question paper often during the time of examinations and conducting the reexamination is very tough job for the examination board as well as for the industrious students. We planned to do the project to protect the question paper leakage. In this

project the question papers locker will be supplied from the board of examinations, which can be opened through online from the board itself. But in our project we are employing wireless using GSM. Here the question paper box gets opened at the scheduled time from the board itself through wireless just by clicking the button. If anyone tries to break the locker at the college the message will be transmitted to the technical board. As well it detect fireand college tools.

In many door lock security system, GSM is used for communication purpose. The purpose of work cultivated by utilization of a circuits like a GSM module which gets activated by controller for sending SMS in emergency to proprietor and for sending corresponding services of security at the time of break in. For detecting obstacle, the system require various sensor. With the help of GSM module, sends SMS to a respective number.

3. HARDWARE AND SOFTWARE REQUIREMENTS

3.1 Hardware Requirements

- Power supply
- Microcontroller unit
- LCD
- GSM modem
- Relay
- Sensors

3.2 Software Requirements

Code

4. MAIN BLOCK DIAGRAM AND DESCRIPTION



Figure 4.1 Block Diagram

Main Components list

- 1. Micro controller
- 2. Transformer
- 3. IR sensor
- 4. Relay
- 5. Buzzer
- 6. Sliding door
- 7. GSM modem

8. LCD

4.2 GSM Modem

A GSM modem is a specialized type of modem which accept SIM card, and operates over a subscription to a mobile operator, just like a mobile phone. From the mobile operator perspective, a GSM modem looks just like a mobile phone. A GSM modem exposes an interface that allows applications such as SMS to send and receive messages over the modem interface. The mobile operator charges for this message sending and receiving as if it was performed directly on a mobile phone. To perform these tasks ,a GSM modem must support an —extended AT command set for sending/receiving SMS messages, as defined in the ETSIGSM 07.05 and 3GPPTS27.005 specifications. GSM modem scan be a quick and efficient way to get started with SMS, because a special subscription to an SMS service provider is not required. In most parts of the world, GSM modems are a cost effective solution or receiving SMS messages ,because the sender is paying for the message delivery.

INTRODUCTION TO GSM MODEM:



GSM (Global System for Mobile Communications) is world's most famous Mobile platform .Mobile phones with SIM cards use GSM technology to help you communicate with your family, friends and business associates .Interfacing of GSM unit is done through a serial communication link with microcontroller 89S51.Whatever data is to be sent to GSM unit is done through this

RS232 link. Level translator Translates TTL voltage level to RS-232 compatible level. It is realized with MAX232.

Features

- Dual band GSM/GPRS 900/1800MHz
- Configurable baud rate
- SIM card holder
- Built in network status LED

Inbuilt powerful TCP/IP protocol stack for internet data transfer over GPRS **GSM systems have Following Advantages Over Basic Landline telephony systems:**

- 1) Mobility
- 2) Easy availability
- 3) High up time

SMS: We use communication feature of Telephone landlines for internet, e-mail, data connectivity, remote monitoring, computer to computer communication ,security systems . In the same way we can use GSM technology and benefit from its advantages.

Uses GSM technology for following applications:

- 1. Access control devices: Access control devices can communicate with servers and security staff through SMS messaging. Complete log of transaction is available at the head-office Server instantly without any wiring involved and device can instantly alert security personnel on their mobile phone in case of any problem.
- 2. Transaction terminals: EDC(Electronic Data Capturing) Machines can Use SMS messaging to confirm transactions from central servers. The main benefit is that central server can be any where in the world.
- 3. Supply Chain Management: With a central server in your head office with GSM capability, you can receive instant transaction data formally our branch offices, wareho uses and business associates with nil down time and low cost.

Testing your GSM modem

- The GSM modem can be tested by connecting it with a PC. The modem is equipped with a RS232 cable. Just use a Serial to USB converter and connect it with the PC.
- Now you can proceed with sending the commands to the modem using any serial communication program like Hyperterminal, minicom etc. Ensure the serial parameters are configured to 8N1 and the baudrate is set to 9600bps.



5. ARCHITECTURE

Figure 5.1 Architecture

FEATURES

- 8KB Reprogrammable flash.
- 32 Programmable I/O lines.
- 16 bit Timer / Counter —3.
- 8 Interrupt sources.
- Power range: 4V–5.5V

- Endurance: 1000 Writes / Erase cycles
- Fully static operation: 0Hz to 33MHz
- Three level program memory lock
- Power off flag
- Full duplex UART serial channel
- Low power idle and power down modes
- Interrupt recovery from power down modes

6 RESULTS



Figure 7.1 overall circuit related to question paper security

It consists of GSM modem, driver circuit, IR sensor, liver switch, power supply, LCD display, microcontroller, fire sensor, and gate.



Figure 7.2 AT89S52 Microcontroller

This section forms the control unit of the whole project .This section basically consists of a Microcontroller with its associated circuitry like Crystal with capacitors, Reset circuitry, Pull up resistors (if needed) and Soon .The Microcontroller forms the heart of the project because it controls the devices being interfaced and communicates with the devices.



Figure 7.3 GSM Modem

A GSM modem is a specialized type of modem which accept SIM card, and operates over a subscription to a mobile operator, just like a mobile phone. From the mobile operator perspective, a GSM modem looks just like a mobile phone.



Figure 7.4 Connecting GSM



Figure 7.5 Liver switch



Figure 7.6 Results which are displayed on the LCD



Figure 7.7 Power supply

Figure 7.9 Fire Sensor



Figure 7.8 Driver Circuit

Figure 7.10 IR Sensor

IR sensor is activated when unauthorized person tries to enter through the door, and the result will be displayed as shown below.



Figure 7.11 LCD display for IR sensor

Figure 7.12 Gate circuit

7. ADVANTAGES AND DISADVANATGES

7.1 Advantages

- 1. Avoids leakage of question papers to a greater extent: The question paper locker will be supplied from the board itself, By using GSM.
- 2. Saves Time and Man power: This project saves the time and minimize the man power to secure the question papers and department as well.
- 3. Providing a High security :High security is provided, if any misleading, message is sent to technical board. In time question paper can be supplied to the students.

7.2 Disadvantages

SIM card confidentiality: As we are inserting SIM card in the GSM modem, the number of that SIM card should be kept confidential to provide security.

7.3 Applications

- 1. This can be employed in all Colleges to provide question paper security.
- 2. This method can also be used to protect the confidential document related to our country .
- 3. Misleading of Question paper can be avoided.
- 4. It can be employed in banks to protect the money and for ATM machines from unauthorized with change in the mechanism and technology.

8 FUTURE SCOPE

A cost effective system is proposed here which uses GSM and code security. This security can be enhanced with bio metric system and can be used for different applications which are confidential related to our country. The GSM used here can be extended to send SMS to different people once there is alert. The password when given in this project can be made as OTP by using different programming structures. With these additional features this can project can be made as an advance system and can help us in many ways.

This system is used for the following purpose:

- 1. To prevent the leakage of examination question papers.
- 2. To protect some secret and confidential papers related to our country.
- 3. The same box can be used to seal the answer sheet and can be sent to evaluation centre's.
- 4. This system can also use in banks for security of money & important documents.

CONCLUSION

This topic is implemented to detect and prevent the leakage of question papers in various university and civil service exams. It can be modified to protect some secret and confidential information papers related to our country .In this project we use simply IR sensor for indicating that any person should open the locker. This includes cost effective system which uses GSM . Hence, this system also protected from danger that if someone tries to open the locker from backside. So we can restrict some area around the locker with the help of IR sensor. So that if person entered in restricted premises then the SMS can be sent to the administrator.

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