

Paper Leak Security System

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ABSTRACT

Question paper leakage is one of the main issues for the students, who suffer from the postponement or cancellation of examination. The compact solution for this problem is AVR microcontroller based examination paper leakage protection system. The question paper comes to the college in an electronic sealed box called ibox. The ibox contains an embedded system that was designed using AVR microcontroller, which contains inbuilt RTC to monitor the ibox. If anyone tries to open the ibox before the system reports to university authorities by sending an SMS (Short Message Service) through GSM (Global System for Mobile communication) that “some malfunctioning is happening with the ibox”. Finger print of chief examiner of the college is used for open the exam box. Chief examiner needs to use thumb to open, If fingerprint match, motor rotates and unlocks the box. The system is having two sections of transceivers (A and B). The transceiver A is an embedded system associated with the box. The transceiver B is the mobile phone with the university authorities. The present work deals with the software and hardware part.

Keywords : Arduino, Atmrga328, Biometric Sensor, Fingerprint Module, Exam Paper, Security System

I. INTRODUCTION

Every year during time of examination we will come across some 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 really 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 been made to implement a system which will help to stop this malpractice of leaking the question paper. GSM modem is connected to the box containing question papers along with the microcontroller. Mobile of Authorized person in University board acts as the Base station

The main aim is examination question paper leakage protection system which will help to stop the malpractice of leaking the important and exam question paper. Data leakage protection system requires series of preparation work, including data classification, risk assessment and privacy requirement. To achieve the document leakage protection system using micro-controller now easily implemented within embedded software of micro-controller and document leakage protection system aims at putting together a robust microcontroller based power supply unit access LCD screen 0.30 output range (up to 80w), There is real time clock for monitoring real time. Question paper leakage is one of the main issue for student. Who suffer from postponement or cancellation of exam. The question paper are distributed in sealed boxes this system is being followed since many year. The disadvantage is these systems are it may lead to leakage of question

paper at various instances in the journey of box from printing location to examination center. This happens due to easy tampering of sealed boxes and more human interface. Hence an idea is proposed for an electronic protection system for question paper this idea is derived from modern many applications like electronics locker in bank.

II. OBJECTIVE OF PROJECT

- ✓ To implement real time secure exam paper box, with fingerprint biometric sensor for secure accessing exam box system.
- ✓ To provide accessing time, Real Time Clock module used.
- ✓ GSM module is used for notification to university at what time accessing system and system will be break.

III. BLOCK DIAGRAM

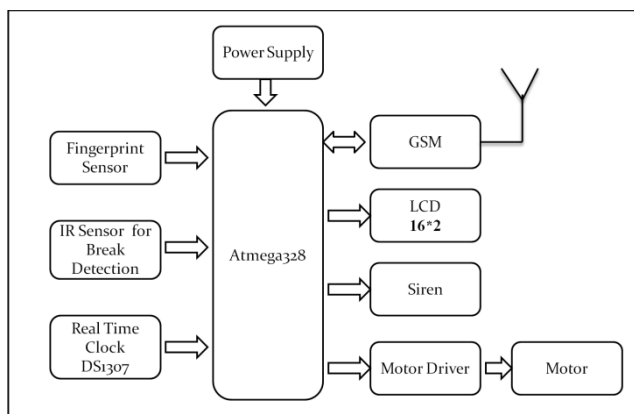


Figure 1. Block diagram Transmitter Section

To every system, there is a requirement of one or more control units. In the block diagram of transmitter, only one control system is used. It contains Atmega328 microcontroller which belongs to the AVR family of microcontrollers. The blocks shown in figure are put-up in such a way that, a most important block is Power supply. The power supply should be regulated DC. In this system, There is real time clock is used because of that the password will be access in particular time. for accessing the system fingerprint module is used. If authorized person access system,

door open. If unauthorized person access system with the help of GSM message will go to the university that indicate something wrong happens with that box. There is requirement of L293D IC because output of microcontroller current rating is in form of milliampere but for rotating the motor we require in the form of ampere. The L293D acts as an amplifier. There is a requirement of real time clock for that we are using IC DS1307, it provides real time clock to microcontroller. The SCL and SDA pin of DS1307 is connected to the SCL and SDA pin of microcontroller. There is a LCD which is connected to Port B of microcontroller AT Mega328.

The LCD is an output device which shows the real time clock. The microcontroller and whole circuit works on +5 V DC but we are using an adapter of +12 V DC range for that we are converting +12 V into +5 V by using voltage regulator IC 7805. 7805 indicates a step down and a 05 indicates +5 voltage. The output +5 V of that IC is connected to the microcontroller pin VCC. The interfacing between microcontroller and GSM is like that the TXD pin of microcontroller is connected to the RXD pin of GSM and vice versa. All real time programming is stored in microcontroller for performing particular tasks. There are special AT commands for sending messages to the authentication person.

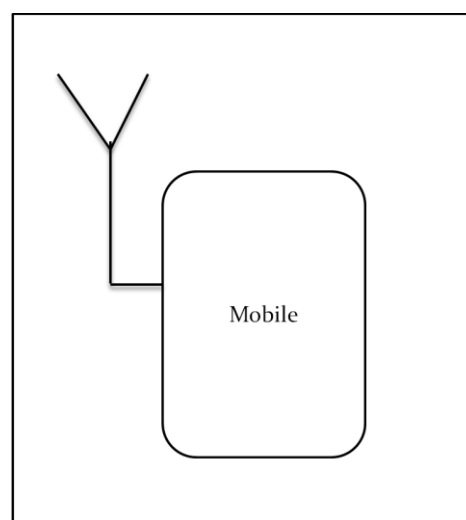


Figure 2. Block diagram of Receiver Section

In Receiver Section, Mobile is used to Receive notification message, if lock break or access transmitter section.

IV. WORKING

In our advance security lock system, it is real time system .in this system there is fingerprint sensor is used, with help of biometric sensor system can access for open the exam paper, there is a real time clock in our project advance system is like that system is assessed in a particular time. if fingerprint accessed in another time, system will not be accessed. In this project there is a GSM modem for sending the text message to the authentication person. In advance security lock system biometric sensor connected to microcontroller. If fingerprint not match in valid time the door will opened automatically. We have connected a DC Motor to the system. For rotating the motor we have connected a DC Motor Driver IC L293D.The output of microcontroller is connected to a motor driver IC L293D and output of L293D IC is connected to the DC motor. There is requirement of L293D IC because output of microcontroller current rating is in form of mili-ampere but for rotating the motor we require in the form of ampere. The L293D acts as an amplifier. There is a requirement of real time clock for that we are using IC DS1307,it provides real time clock to microcontroller. The SCL and SDA pin of DS1307 is connected to the SCL and SDL pin of microcontroller. There is a LCD which is connected to Port B of microcontroller AT Mega328. The LCD is a output device which shows the real time clock. The microcontroller and whole circuit works on +5 V DC but we are using adapter of +12 V DC range for that we are converting +12 V into +5 V by using voltage regulator IC 7805.78 indicates a step down and a 05 indicates +5 voltage. The output +5 V of that IC is connected to the microcontroller pin VCC. The interfacing between microcontroller and GSM is like that the TXD pin of microcontroller is connected to the RXD pin of GSM and vice versa. All real time programming is stored in microcontroller for performing particular tasks. There is a special AT

commands for sending message to the authentication person.

V. CONCLUSION

Feature

- ✓ To implement real time secure exam paper box, with fingerprint biometric sensor for secure accessing exam box system.
- ✓ To provide accessing time, Real Time Clock module used.
- ✓ GSM module is used for notification to university at what time accessing system and system will be break.

Application

- ✓ Education system and became a worldwide standard.
- ✓ Civil Services.
- ✓ Bank system(Bank Money Box).
- ✓ Home security systems
- ✓ office security systems

Future Scope

In future, camera is used for face recognition using raspberry pi and unknown face image is send through email. Internet of Things IoT concept will used.

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