RTC BASED EXAM PAPER LEAKAGE PROTECTION SYSTEM

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Abstract: Education is sincerely the soul of a society and examination is the coronary heart of the schooling system. Today, when we come throughout the news of malpractice in checks we realize that, knowingly or unknowingly schooling has obtained irrecoverably corrupted. So we suggest an electronic gadget right here to detect and forestall examination paper leakages. This paper narrates RTC based Exam paper Leakage Protection device for the examination paper leakage which is a quite secured device in this calculated system, the query papers which are in the electronically locked field will be dispatched to the universities/Examination Centers. The container will be opened in a preset date and time solely and with the aid of authorized user only. In this device we are the use of a buzzer for any sort of unauthorized involvements.

Keywords: Examination papers, Arduino UNO, RFID, GSM

I.INTRODUCTION

An assessment is a measure that is used to ascertain a person's intelligence, aptitude, physical ability or category in a number of subjects. A check may also be provided verbally , on paper, on a laptop device, or in a restricted area that allows an examinee to physically display a range of abilities. The number of examination documents is enormous .The imperial examination was the first national standardized test used in china, and its primary aim was to identify qualified applicants for various government roles. Every year, at any stage during the examination period, reports appear in the newspaper and on television that now the examination is being delayed or cancelled owing to the leaking of question articles. The exclusive approach involves the college sending an e-copy of the questionnaire papers to the school prior to the review. The schools then print the issue papers and distribute them to the examinees. The concept for the proposed computer unit, which includes digital security, is based on current day functions such as digital lockers in financial institutions, home security systems, and place of enterprise security systems, as well as other security higher digital mechanisms.

II.SYSTEM REQUIREMENTS

2.1 Hardware Requirements:-

1) The Arduino UNO
2) A DC motor
3) Pump Motor
4) GSM module
5) Battery
6) LCD Display
7) Rfid Tags
8) Rfid module
9) RTC
10) Power Section

2.2 Software Requirement:-

1) Arduino 1.6.13 Software
2) Embedded C Language

III.COMPONENTS DESCRIPTION

1) Arduino UNO: - Arduino Uno is a single board Computer based on the ATmega328P microcontroller. It comes equipped with fourteen optical input/output pins, six analogue inputs, a sixteen MHz quartz crystal, USB networking, a power port, an ICSP header and a reset switch.

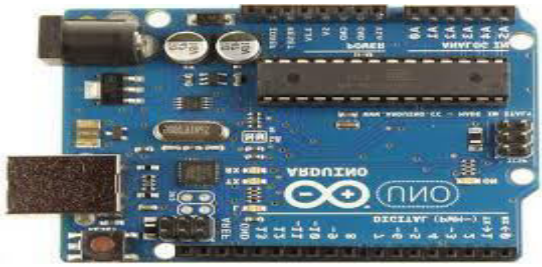

Fig 1 : Arduino UNO

2) DC Motor: - The System is a four-channel ultrahigh, high-current driver that accepts standard DTL or TTL transistor logic and drives voltage levels(such as relays solenoids, DC and step motors) as well as switching power transistors. The robots motors were driven using this driver circuit. Each L293D powers two motors.

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Fig 2: DC Motor

3) GSM Module: - SIM300 is a Three-segment GSM/GPRS engine that works only at EGSM 900 MHz, DCS 1800 MHz and PCS 1900 MHz frequency bands. SIM300 supports several GPRS coding systems, including CS-1, CS-2, CS-3 and CS-4, and features GPRS multi-slot level 10/class 8 functionality (optional).

Fig 3: GSM Module

4) RFID Reader: - it is considered as brain of every RFID device and is needed for it to work. Readers, also known as interrogators, are instruments that interact with RFID tags through transmitting and receiving radio waves.

Fig 4: RFID Reader

5) RFID Tags: - An RFID tag consists of a microchip with identifying details as well as an antenna that wirelessly transmits this data to a reader. The chip will, at its most simple level, contain a serialized marker, such as a license plate number, that uniquely identifies that object, similar to how much the bar codes are used today.

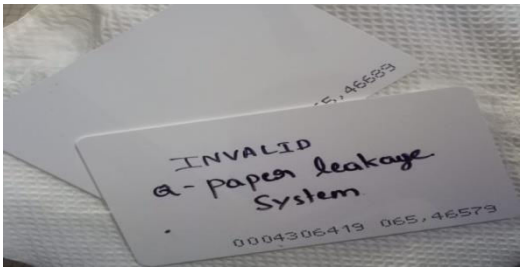


Fig 5: RFID Tags

6) RTC: - DS1307 Datasheet Search Engine includes low-power real-time clock (RTC). It controls all timekeeping functions and has a basic two-wire I2C interface that allows it to be conveniently interfaced with any microcontroller. The biggest benefit of RTC is that it has a battery backup that maintains the calendar /clock operating even though there is power outage.

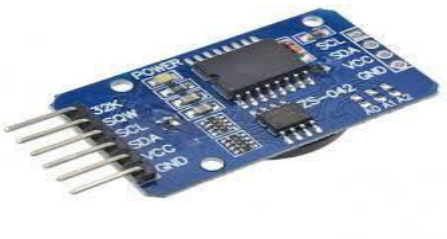


Fig 6: RTC module

IV. CIRCUIT DESCRIPTION

EXAM PAPER LEAKAGE PROTECTION

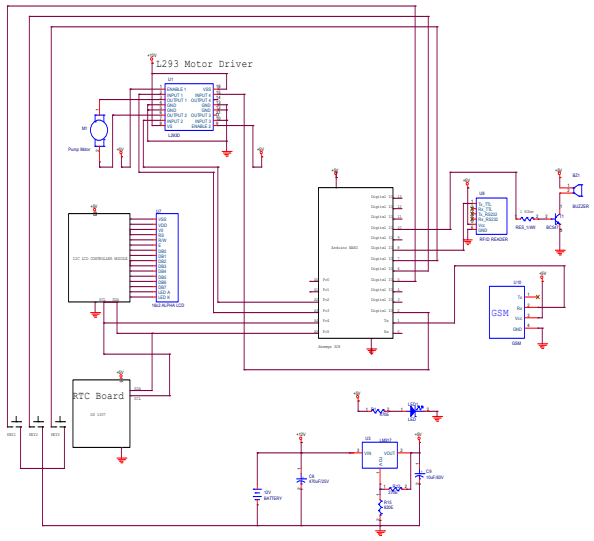


Fig 7 : Circuit Diagram

This computer is made up of an Arduino UNO RFID reader as well as an RFID sticker, as well as a real-time clock, a DC motor, and a GSM board. Each Arduino UNO board with puts up USB cable make up the 162LCDr3 with USB cable. Indeed, the Arduino UNO r3 is a microcontroller board that is completely based on the atmega328. it features 14 wireless input output pins. Six of which can be used as PWM outputs ,six analogue inputs , a sixteen MHz ceramic resonator a connector for when the order cap is met, a control port, a recommendation avert reached header, and a reset button. It includes all the information necessary to tell the microcontroller that is also a part of a project. begin innovating restriction on advice has been reached restriction on advice has been reached the atmega16u2 atmega8u2 designed as an advisory cap reached converter revision differs from across all previous boards in that it does not have the guidance prevent reached guidance avoid reached driver chip.

The second revision of recommendation avert reached has a resistor that pulls the 8u2 guideline limit reached line to the board, making it simpler to bring into advice escape reached mode. The third revision of recommendation limits reached has the following new features: The shields would be well appropriate for both the board that uses the recommendation precinct and the board that does not use the recommendation precinct in the future-shields would be well appropriate for both the board that uses the recommendation precinct in the future shields would be well appropriate with both the board that uses the recommendation precinct in the future shields will be well appropriate for both the board that uses the recommendation precinct in the future shields would be well appropriate for all the board recommendations for a better reset circuit should be followed to prevent reaching the point where 16u2 replaces 8u2.

V. RESULTS AND DISCUSSION

Results

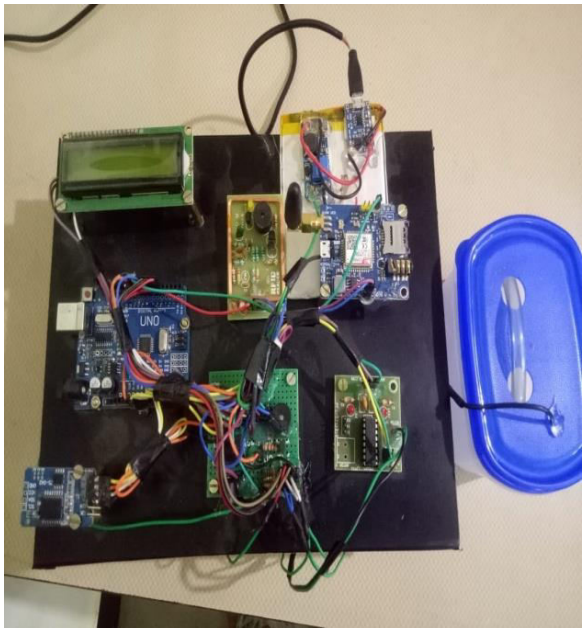


Fig 8: RTC Based Exam Paper Leakage Protection System

When the computing machine is charged ON, LCD and GSM prompt and suggests “Welcome To NCET”. The RTC of DS1307 is coded in such a way that it runs the existing nearby time and is displays on the LCD. The E2PROM reserves RFID tag address, GSM cell phone number, date and time of the exploration. Within the constant time opening and closing of the System ought to be complete. Fig 8.RTC Based Exam Paper Leakage Protection System.

The Global System for Mobile Communication Modem is linked to the Electronic Security Box. The cell phone extent of the approved character acts as the beginning point. The RFID Tags are used to open the Electronic Security Box. Let us be counted on that the Tag swipe time period is taken as 8:55am to 9:05am. Then, Electronic Control Box device sends a message to the prerecorded cell phone extent of the licensed person. If the RFID tag is swiped in the past than 9am then it

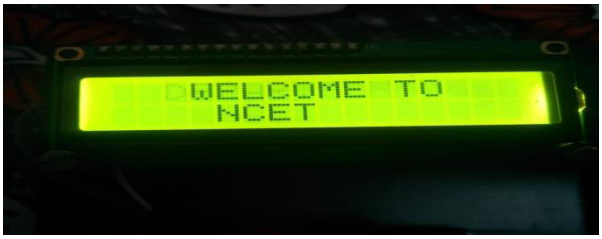
sends a message as "BOX TAMPER DETECTED" and suggests on the LCD

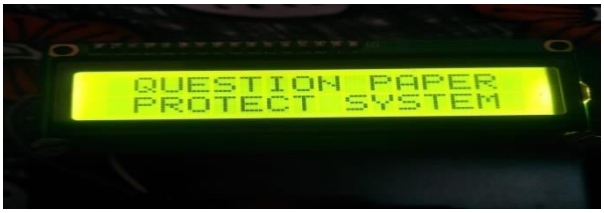
If the Tag is swiped after 9.05am which is an infirm time, then the computer LCD will showcase "BOX TAMPER DETECTED.

The university affords two RFID tags as stated above; legit and infirm/dolt Tags. If genuinely all people tries to release the container with the infirm RFID tag the GSM modem sends a message to the Authorized range which says "INVALID KEY QUESTION PAPERS DESTROYED". Consequently, the leakage of query papers is prevented.

LCD output during the startup of the embedded kit as shown below:

The LCD display shows the message of RTC Based Exam Paper Leakage Protection System after the switch on the experiment kit.





Messages to authorized person from the controller as shown below: if the package is opened at the incorrect time and an erroneous RFID tag is used, a warning is transmitted via GSM to the approved person's cell phone:

VI. CONCLUSION

Through combining RFID and GSM modules, a fine machine is proposed through which the examination section of the university will deliver the examination papers to the exam heads through a digital security container following the conclusion of the examination. Additionally, with the assistance of this technological expertise, we can reduce crime to a high quality level: moreover, this desktop is advantageous and can be used.

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