

EXAMINATION QUESTION PAPER LEAKAGE PROTECTION BASED ON IOT

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ABSTRACT:

In essence, education serves as the vital essence of a civilization, being passed down from one generation to the next one. Nevertheless, it is evident from perusing the news articles listed below that this essence—resembling education according to some eminent intellectuals—has been irreversibly tainted, whether intentionally or inadvertently. One of the primary factors contributing to this issue is the unauthorized disclosure of examination papers. Thoroughly evaluating this matter and implementing the required actions is important. We suggest using an electronic security measure to effectively prevent any unauthorized disclosure of test papers. The primary cause for this issue is the leakage of examination papers. Substantial measures must be taken to halt this. As a result Here, we propose using an electronic approach to detect and circumvent test papers. Test sites get question papers for the proposed module in a secure electronic container that may be locked. If the RFID cards are a match, the box will open using a motorized mechanism.

I. INTRODUCTION

Education is basically the motivating force of the society. An examination is the assessment planned to measure the skill, knowledge, physical fitness or aptitude and also classification in so many subjects. An exam may be on paper, on the computer, orally, in exam centers, which are conducted to test, calculate or examine the set of skills. Also the main purpose of the examination is to select the capable candidates for different positions. For the students main issues are question paper leakage,

who suffer from the postponed or cancellation of the examination. Each and every year we hear news about postponed/cancelled exam due to paper leakages in the newspaper or on television. Sometimes the university itself doesn't know how there is leakage of any information content related to question papers. Hence, some student gets good rank in minimum time and with less effort and those students who really deserve the rank will not score even after hard work and maximum efforts. This aspect will create negative effect on students and demoralize the growth of society. First the question paper comes to the college from university in an electronic sealed box which is called Electronic Control Box. The Electronic Control Box is an embedded system that was designed using ARM processor, which has inbuilt RTC to monitor the Electronic Control Box. If anyone tries to open that box before and after the RFID swipe time duration, the system communicates to the university authorities by sending an SMS (Short Message Service) through GSM (Global System for Mobile communication) that "some malfunctioning has taken place with the Electronic Control Box". At present, many logistics service enterprises are still in the traditional, simple service, consider the logistics management as transportation, warehousing, distribution and processing separate part, independently managed. Many logistics enterprise informatization level is low, could not provide information sharing for customers, so that companies have been slow to respond, inefficient [1]. The development of the Internet of things technology is driving the change of Chinese wisdom logistics. RFID

technology, ZigBee technology gained popularity, so that the interconnection of things can be achieved, will give enterprise logistics systems, such as environment monitoring systems provide a platform [2,3]. On this basis, this paper introduces the design of intelligent logistics system based on Internet of things. The system can real-time monitoring goods information and environmental security, reduce the dependence on staff.

II. 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. The idea for the proposed system which involves the electronic protection is derived from modern day equipments like automated teller machine (ATM), Electronic lockers and other security enhanced electronic systems.

III. DESIGN OF HARDWARE

This chapter briefly explains about the Hardware. It discuss the circuit diagram of each module in detail.

ARDUINO UNO

The Arduino Uno is a microcontroller board based on the ATmega328 (datasheet). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

The Uno differs from all preceding boards in that it does not use the FTDI USB-to-serial driver chip. Instead, it features the Atmega16U2 (Atmega8U2 up to version R2) programmed as a USB-to-serial converter. Uno board has a resistor pulling the 8U2 HWB line to ground, making it easier to put into DFU mode. Arduino board has the following new features:

- 1.0 pin out: added SDA and SCL pins that are near to the AREF pin and two other new pins placed near to the RESET pin, the IOREF that allow the shields to adapt to the voltage provided from the board. In future, shields will be compatible both with the board that use the AVR, which operate with 5V and with the Arduino Due that operate with 3.3V. The second one is a not connected pin, that is reserved for future purposes.
- Stronger RESET circuit.
- Atmega 16U2 replace the 8U2.

"Uno" means one in Italian and is named to mark the upcoming release of Arduino 1.0. The Uno and version 1.0 will be the reference versions of Arduino, moving forward. The Uno is the latest in a series of USB Arduino boards, and the reference model for the Arduino platform; for a comparison with previous versions, see the index of Arduino boards.



Fig:1. ARDUINO UNO

POWER SUPPLY:

The power supplies are designed to convert high voltage AC mains electricity to a suitable low voltage supply for electronic circuits and other devices. A power supply can be broken down into a series of blocks, each of which performs a particular function. A d.c power supply which maintains the output voltage constant irrespective of a.c mains fluctuations or load variations is known as “Regulated D.C Power Supply”.

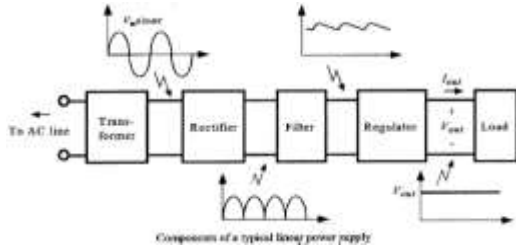


Fig: 2. Block Diagram of Power Supply

LCD DISPLAY

A model described here is for its low price and great possibilities most frequently used in practice. It is based on the HD44780 microcontroller (Hitachi) and can display messages in two lines with 16 characters each. It displays all the alphabets, Greek letters, punctuation marks, mathematical symbols etc. In addition, it is possible to display symbols that user makes up on its own. Automatic shifting message on display (shift left and right),

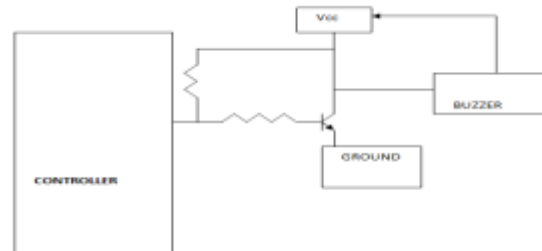
appearance of the pointer, backlight etc. are considered as useful characteristics.



Fig:3. LCD

BUZZER

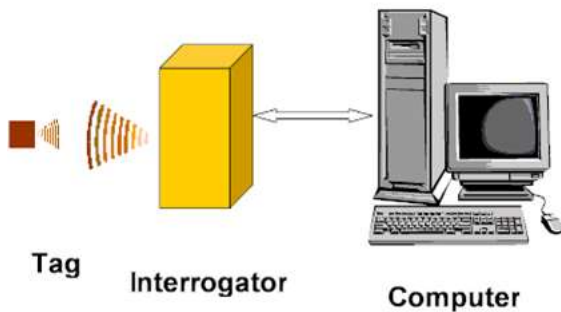
Digital systems and microcontroller pins lack sufficient current to drive the circuits like relays, buzzer circuits etc. While these circuits require around 10milli amps to be operated, the microcontroller’s pin can provide a maximum of 1-2milli amps current. For this reason, a driver such as a power transistor is placed in between the microcontroller and the buzzer circuit.



RFID (RADIO FREQUENCY IDENTIFIER)

Radio-frequency identification (RFID) is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders. An RFID tag is an object that can be applied to or incorporated into a product, animal, or person for the purpose of identification using radio waves. Some tags can be read from several meters away and beyond the line of sight of the reader. Most RFID tags contain at least two parts. One is an integrated circuit for storing and processing information, modulating and demodulating a (RF) signal, and other specialized functions. The second is an antenna for receiving and transmitting the signal. Chip less RFID allows for discrete identification of

tags without an integrated circuit, thereby allowing tags to be printed directly onto assets at a lower cost than traditional tags.

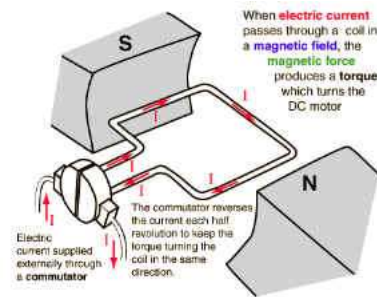


L293D:

The L293 and L293D are quadruple high-current half-H drivers. The L293 is designed to provide bidirectional drive currents of up to 1 A at voltages from 4.5 V to 36 V. The L293D is designed to provide bidirectional drive currents of up to 600-mA at voltages from 4.5 V to 36 V. Both devices are designed to drive inductive loads such as relays, solenoids, dc and bipolar stepping motors, as well as other high-current/high-voltage loads in positive-supply applications. All inputs are TTL compatible. Each output is a complete totem-pole drive circuit, with a Darlington transistor sink and a pseudo-Darlington source. Drivers are enabled in pairs, with drivers 1 and 2 enabled by 1,2EN and drivers 3 and 4 enabled by 3,4EN. When an enable input is high, the associated drivers are enabled, and their outputs are active and in phase with their inputs. When the enable input is low, those drivers are disabled, and their outputs are off and in the high-impedance state. With the proper data inputs, each pair of drivers forms a full-H (or bridge) reversible drive suitable for solenoid or motor applications.

DC MOTOR

A DC motor is designed to run on DC electric power. Two examples of pure DC designs are Michael Faraday's homopolar motor (which is uncommon), and the ball bearing motor, which is (so far) a novelty. By far the most common DC motor types are the brushed and brushless types, which use internal and external commutation respectively to create an oscillating AC current from the DC source - so they are not purely DC machines in a strict sense.



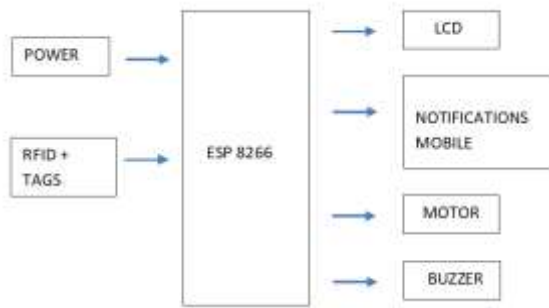
GSM

GSM (Global System for Mobile Communications) is a digital cellular communications system. It was developed in order to create a common European mobile telephone standard but it has been rapidly accepted worldwide. GSM is designed to provide a comprehensive range of services and features to the users not available on analogue cellular networks and in many cases very much in advance of the old public switched telephone network (PSTN). In addition to digital transmission, GSM incorporates many advanced services and features like worldwide roaming in other GSM networks



Fig:4. GSM

IV. BLOCK DIAGRAM:



Working: a. The kit is first switched ON by giving the power supply. b. The LCD gives a welcome message. The kit should be reset for proper functioning. c. A card is to be shown at the RFID reader which reads the information encoded in the card. d. The prompt asks to enter a mobile number to which the OTP has to be sent. e. The prompt asks to show the card. If the card is valid, then it sends an OTP the given mobile number. Otherwise, a message is sent to the number that an unauthorized action has been taken place. f. The OTP needs to be entered by using the keypad. g. If the OTP entered is correct, the lock gets opened. Otherwise, a message is sent to the authorities about the unauthorized access.

ADVANTAGES

1. Enhanced security and safety.
2. Less human errors.
3. Providing a contactless identification and tracking.
4. Real-time delivery status.
5. Less money and time spent on tracking and handling of the package

V.CONCLUSION

The goal and implementation of the approach to leak the test question paper were effectively achieved, resulting in cost-effectiveness, minimum deviations, high mobility, and reduced paper consumption. The system's reaction is thoroughly evaluated to ensure a functional and cost-effective

microcontroller solution. Prior to presenting the finalized project to the university administration, it may be essential to complete the acquisition of the question paper and answer sheet. Additionally, it is used in several contexts where there is a need to safeguard papers or other precious items.

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