

# Two Way Authentication Systems for Exam Paper Leakage Detection

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## Abstract—

The thought behind this plan is to monitor the break of inquiry papers before the assessment and mutually to keep up with the assurance of the outcome paper till they arrive at the middle for investigation. An Electronic activity Box is made during which the correspondence papers will be put, and might be opened exclusively at the exact season of assessment once the cross checking of the time. Nonetheless, likewise a blare sound can emerge out of the bell that is associated with the electronic box, if anybody attempts to open the crate before the requested time. RFID is associated with the electronic activity box that goes about as an essential place of validation.

**IndexTerms**—RFID tag and reader, Exam paper leakage, Electronic Control box, GSM module, Fingerprint Sensor.

## I. INTRODUCTION

All Preparing is on a very basic level the convincing force of the overall population. An evaluation is the examination needed to measure the capacity, data, real health or wellness and moreover type in so endless subjects. A test may be on paper, on the PC, orally, in evaluation networks, which are directed to test, find out or check out at the game plan of hacks. Similarly the chief justification behind the evaluation is to close the fitting contenders for different positions. For the analysts fundamental squeezing concerns are question paper spillage, who experience the evil impacts of the laid over or withdrawal of the appraisal. Each and every time we hear news about laid over dropped test due to paper spillages in the review or on TV. Sometimes the real school doesn't have even the remotest clue how there is spillage of any information content associated with question papers. Thusly, some understudy gets extraordinary situation in least time and with lower burden and those analysts who really obtain the position won't score without a doubt after troublesome work and most outrageous sweats. This viewpoint will make unfavorable outcome on scientists and demoralize the advancement of society. So we have thought about a decreased and flexible result and decided to design and apply a test paper spillage and security system laid on Arduino microcontroller. First the request paper comes to the panel from University in an electronic fixed box which is called Electronic Control Box. Each time during time of appraisal we will run over News in the review and TV about question paper spillages and thus the test is being laid over dropped. every so often the information associated with question papers spillage will not be known to the genuine universities. Subsequently a couple of scientists get extraordinary species by these papers and those specialists who had locked deprived to mull over lower rank and this variable will definitively influence the improvement of the overall population. thus by considering the issues looked by the scientists and society a game plan should be made to apply a structure which will help with ending this carelessness of oohing of the request paper.

## II. LITERATURE SURVEY

### 1. *NawsheenPromy, TashfiqRahman, Sadman Islam, and Saqlain Mahmud Khan, "Automated smart box to alleviate unfair means in public examination"-2020*

The model is turned on by giving the power supply. A welcome correspondence shows up on the TV. For appropriate activity, the tackle ought to be reset. A card should be introduced to a RFID collection, which will peruse the information contained on the card. This expects you to enter a portable number to which the OTP will be shipped off the brief teaches you to show the card. In any case, an OTP is moved to the predetermined versatile number, If the card is licit. else, the number will concede a declaration demonstrating that an unlawful activity has passed. The brief teaches you to show the card. Notwithstanding, an OTP is moved to the gave cell phone number, If the card is licit. else, the number will concede a declaration demonstrating that an unlawful activity has passed. The OTP ought to be placed by utilizing a keypad. The snap is opened assuming that the OTP entered is right. else, a correspondence about the unlawful access is sent to the specialists.

### 2. *MamillaSirisha, NeelamSyamala "RFID Based Security for Exam Paper Leakage System"-2019*

Two way confirmation framework for test paper spillage revelation will be generally compelling to assist with papering spillage in a scope of conditions. This will guarantee that the assessments work out positively and that no deceptive practices unique from the reason for evaluating an individual's information through instruction. Subsequently, individuals will be compelled to put their bents and information to utilize, and just the most skilled people will be appropriate to guarantee 100 right issues. The time and entrepreneur wasted in such a situation will presently not be a blockade to schooling, and the culprits will be found and managed in the most potential solid manner. We can expect to make an optimal school system along these lines, where understudies ascertain on their own trouble instead of the shouted inquiry.

### 3. A. Z. M. TahmidulKabir, Md. Jubaer Islam Khan, Al MamunMizan, NirmalDebnath “Smart System Integration of Question Paper Security System “-2019

The Arduino system is by and large revolved around two sorts of handiness. Right when the contraption shows up at its goal, all of the foreordained data ought to match to open it. The position will be matched by the right extent of degree and, not completely firmly established by the zone guideline, which will be sent by GPS. The point is taken with a positive reaction, and the contraption will finally open. The GSM in the contraption will send a SMS to the proprietor's guest ID for each step. The owner furthermore has incredible access, and that infers the individual has the situation to stamp all shows.

### III. PROPOSED SYSTEM

In this system we are using fingerprint as a first level authentication followed by the RFID card with a particular or unique number on the card issued to provide second level authentication. GSM and IR sensors are used for any unauthorized user access and buzzer is used as the alert system. This system can be controlled via mobile through Blynk server.

#### 1. RFID Reader:

Tags or labels affixed to the items to be recognized are used in a radio-frequency identification system. Transmitters and receivers for two-way radios deliver a signal to the tag and read its response. In most cases, readers send their observations to a computer system that runs RFID software or RFID middleware. Barcode labels gave way to RFID systems as a way to automatically identify and track items and persons.

#### 2. R305 Fingerprint Sensor:

Enrolment and matching are the two phases of fingerprint sensor processing (the matching can be 1:1 or 1:N). The user must register his or her finger twice. The system will process the two-time finger photographs, then construct and save a finger template based on the processing findings. When the user uses an optical sensor to input the finger, the system builds a finger template and compares it to templates in the finger library. The Module may communicate with a 3.3V or 5V MCU through a serial interface: TD (pin 3 of P1) connects to RXD (receiving pin of MCU), RD (pin 4 of P1) connects to TXD (transmitting pin of MCU) (transferring pin of MCU).

#### 3. GSM Module:

GSM was designed by the European Telecommunications Standards Institute (ETSI) to describe second-generation digital cellular networks' protocols. Data communications changed throughout time, first via circuit-switched transport, then by packet data transmission via GPRS and EDGE. Following that, the 3GPP developed third-generation UMTS standards, which were later followed by fourth-generation (4G LTE Advanced) standards, which were not included in the ETSI GSM standard.

#### 4. Electromagnetic Lock:

Registration and matching are the two phases of point detector processing (the matching can be 1:1 or 1:N). The stoner must enter the outlet twice before registering. The system will re-use the two-time outlet prints, then create a outlet template based on the processing results and store it. When the stoner uses an optic detector to input the outlet, the system constructs a outlet template and compares it to templates in the outlet library. The Module may interact with MCUs that run on 3.3 V or 5V power through a diurnal interface. TD (leg 3 of P1) connects to RXD(entering leg of MCU), and RD(leg 4 of P1) connects to TXD (transferring leg of MCU).

### IV. BLOCK DIAGRAM

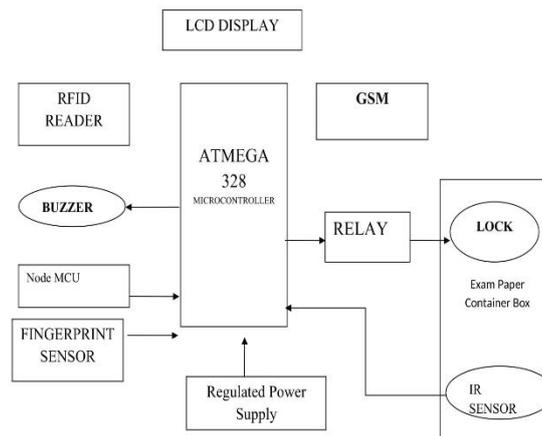


Fig 1.1: Block Diagram

As found in the block chart the center of this venture framework is the ATMEGA 328 microcontroller and it has numerous unit utilized like RFID, Fingerprint sensor, which will be displayed on the LCD. The DC engine with the hand-off is utilized to keep the case locked; the RFID and the unique mark sensor are utilized as a two way verification framework. The crate must be opened if the two of them are confirmed. The GSM module is utilized to send a SMS at whatever point the container is opened. The ringer is actuated at whatever point an unapproved client attempts to open the case. The RFID and the unique mark sensor are utilized as a two way verification framework. The container must be opened if the two of them are verified. The hub MCU is utilized to sidestep the unique finger impression sensor in the event that the approved individual neglects to appear.

## V. METHODOLOGY

Each system is now machine-controlled in order to meet new problems in the gift-giving environment. Because automated systems require fewer manual procedures, their flexibility and reliabilities are high and accurate. As a result, machine-controlled management solutions are preferred in each industry. Machine-controlled systems, notably in the field of physical research, achieve increasingly superior performance. The Arduino microcontroller is at the heart of the system, and many other components are employed in conjunction with it, such as RFID, fingerprint sensor, LCD digital display, Node MCU, relay, DC motor, and buzzer, among others. There is a two-level authentication process when someone wants to unlock the lock on the examination box. One person have to be compelled to show his/her authentication with the assistance of Fingerprint sensor technology, once fingerprint is detected it sends knowledge to the microcontroller. Here the microcontroller gets the information and actually takes a look at the confirmation. RFID innovation and at whatever point the individual shows the RFID tag before of the RFID module. If the validation is successful, the storage may be opened, and the message sent to the upper power people using IOT innovation.

### Working operation

- a. The kit is turned on by turning on the power supply.
- b. A welcome message appears on the LCD. For effective operation, the kit needs be reset.
- c. The prompt asks for the fingerprint. If fingerprint is authenticated properly then the system moves to next step.
- d. Then, a card must be presented to the RFID reader, which will read the data contained on the card.
- e. The Node MCU is a Wi-Fi module which is connected to the administrator's phone via Blynk server which helps to bypass the fingerprint reader if the authenticated user isn't present .
- f. If someone tries to open the lock by force, the IR sensor detects this and a message is sent to designated number as 'VOILATED -LOCK OPEN'.
- g. If IR sensor is activated, then the buzzer goes on.
- h. If the lock is opened with proper authentication, then it gives a message as 'LOCK IS OPEN'.

## VI. RESULT

A text message is sent out to a head administrator in charge every time the box is broken or opened .This way the box can be monitored easily.

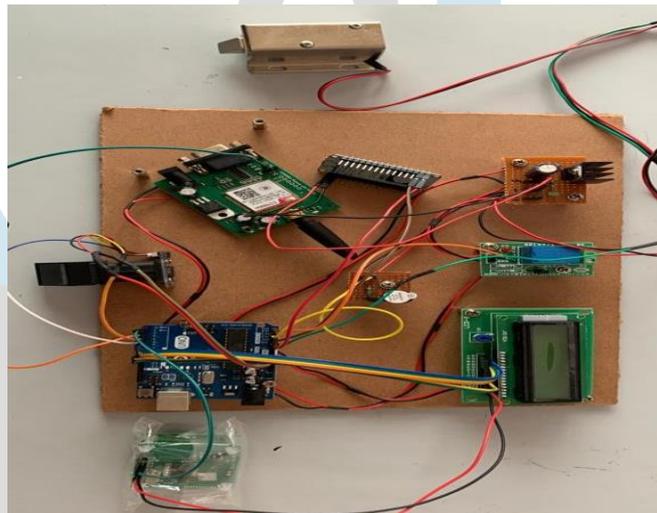


Fig 6.1: The setup of the hardware

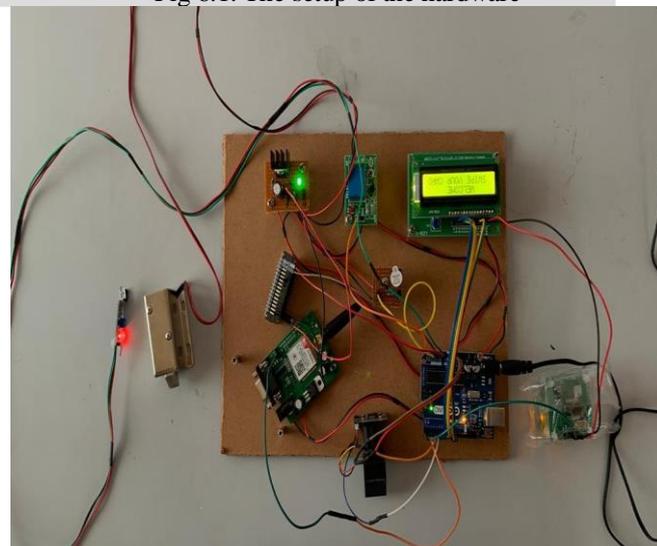


Fig 6.2: The hardware switched ON

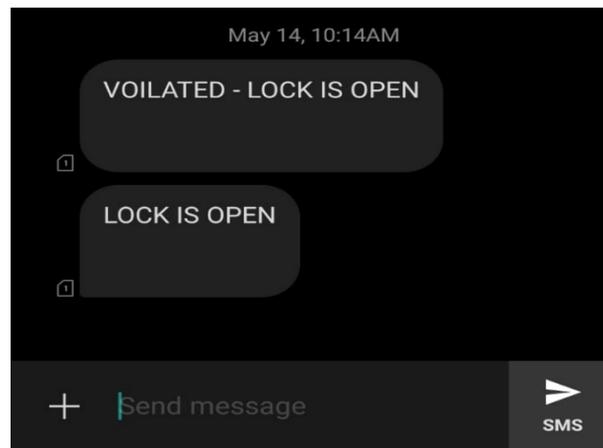


Fig 6.3: The SMS sent when the box is broken or opened

## VII. CONCLUSION

Two way validation framework for test paper spillage disclosure will be to a great extent successful to assist with papering spillage in a scope of conditions. This will guarantee that the assessments work out positively and that no exploitative practices conceptual from the motivation behind evaluating an individual's information through schooling. Subsequently, individuals will be compelled to put their bents and information to utilize, and just the most capable people will be appropriate to guarantee 100 right issues. The time and tycoon wasted in such a situation will as of now not be a fence to schooling, and the culprits will be found and managed in the most potential trustworthy manner. We can expect to make an optimal school system along these lines, where students compute on their own trouble instead of the shouted inquiry.

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