

Intelligent Exam Paper Leakage Detection and Alert system Using IOT

C.Konda Reddy, B.Sai Jyothsna, C.Kavya Sri, C.Manasa, Dr. S.N Prasad

School of ECE, Reva University

ABSTRACT:

The idea behind this project is to protect the leakage of question papers before the examination and also to maintain the security of the answer paper until they reach the centre for evaluation. An Electronic Control Box is made in which the exam papers will be placed, and can be opened only at the exact time of examination after the cross checking of the TIME. If anyone tries to open the box before the stipulated time, then a beep sound will come from the buzzer, which is connected to the electronic box. RFID is connected to the electronic control box, which acts as a first level of authentication. Face detection and recognition is used as second level of authentication for providing more protection. Thus, the project works towards the protection of the examination papers and provides a fair competition through the exam.

Keywords: Exam papers, RFID, Face detection and recognition, Electronic Control Box, buzzer.

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 examination 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.

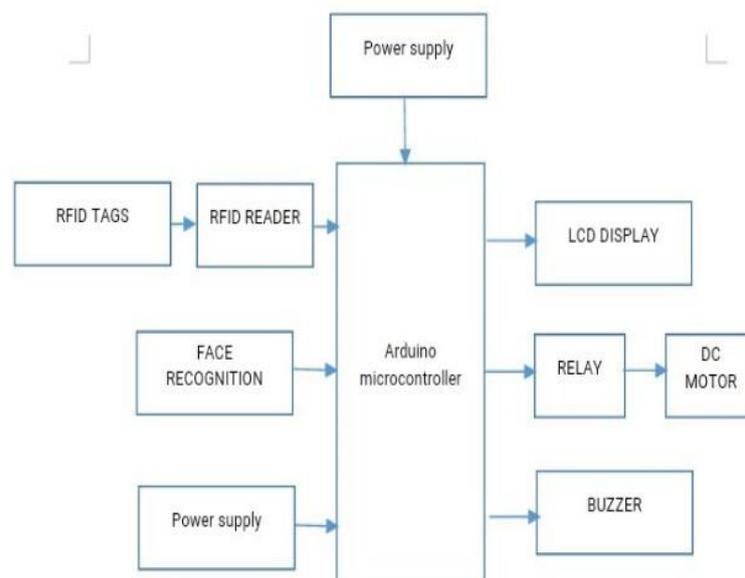
For the students main issues are question paper leakage, who suffer from the postponed or cancellation of the examination. Each and every year we hear news about postponed/cancelled exam due to paper leakages in the newspaper or on television. Sometimes the university itself doesn't know how there is 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. So we have come up with a compact and portable solution and decided to design and implement an exam paper leakage and protection system based on Arduino microcontroller.

First the question paper comes to the college from University in an electronic sealed box which is called Electronic Control Box. By using two level of authentication, one is RFID and another is face detection and recognition more protection is providing for the exam papers, which will avoid the leakage of exam papers before the exam. Only authorized persons can access this Electronic Control Box after the completion of two level of authentication.

II. PROPOSED WORK:

Now a day, every system is automated in order to face new challenges in the present day situation. Automated systems have less manual operations, so that the flexibility, reliabilities are high and accurate. Hence every field prefers automated control systems. Especially in the field of electronics automated systems are doing better performance increasingly.

The proposed hardware design for the system is, the heart of the system is Arduino microcontroller along with it many components are used such as RFID, face recognition, LCD display, relay, DC motor, buzzer etc are used. Whenever the person want to open the lock of the examination box there is a two level authentication. One is person need to show his/her authentication with the help of RFID technology and whenever the person shows the RFID tag in front of the RFID reader then it will go to face detection, once the face is detected it sends data to the microcontroller. Here the microcontroller receives the information and checks the authentication. If the authentication is success then the locker will open and sends the message to the higher authority people with the help of IOT technology.



3.1 Working:

Radio-Frequency Identification (RFID)

RFID Reader Module, are also called as interrogators. They convert radio waves returned from the RFID tag into a form that can be passed on to controllers, which can make use of it. RFID tags and readers have to be tuned to the same frequency in order to communicate. RFID systems use many different frequencies.

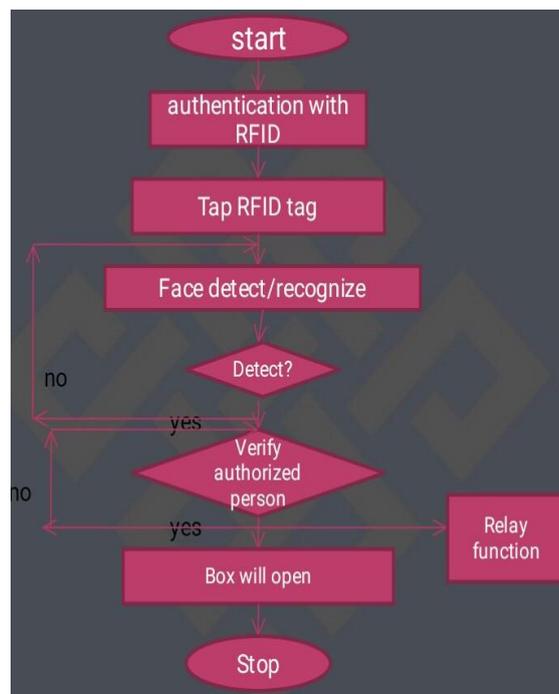
An RFID system consists of two separate components: a tag and a reader. Tags are analogous to barcode labels, and come in different shapes and sizes. The tag contains an antenna connected to a small microchip containing up to two kilobytes of data. The reader, or scanner, functions similarly to a barcode scanner; however, while a barcode scanner uses a laser beam to scan the barcode, an RFID scanner uses electromagnetic waves. To transmit these waves, the scanner uses an antenna that transmits a signal, communicating with the tags antenna. The tags antenna receives data from scanner and transmits its particular chip information to the

scanner.

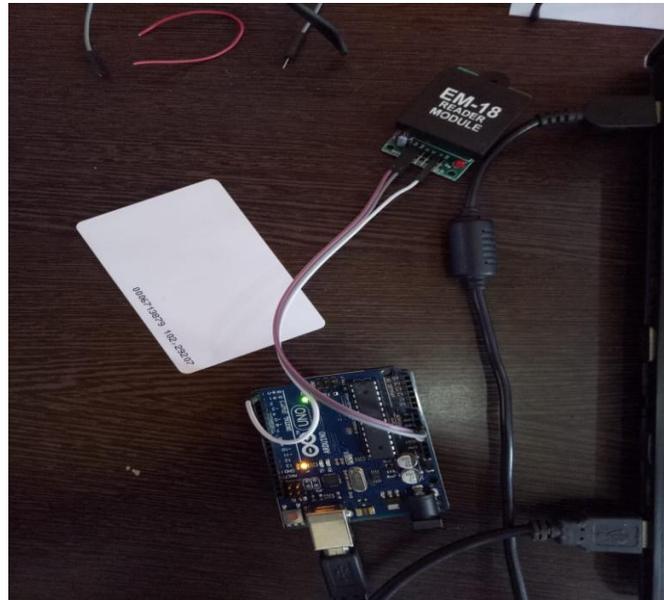


Face Detection and Recognition

Face Recognition Python is the latest trend in machine learning techniques. OpenCV, the most popular library for computer vision, provides bindings for Python. OpenCV uses machine learning algorithms to search for faces within a picture. Because faces are so complicated, there isn't one simple test that will tell you if it found the face or not. Instead, there are thousands of small patterns and features that must be matched. The algorithms break the task of identifying the face into thousands of smaller, bite-size tasks, each of which is easy to solve. These tasks are also called as classifiers. But there are so many problems in using classifiers. To get around this, OpenCV uses cascades. OpenCV cascade breaks the problem of detecting faces into multiple stages. Here Webcam is used to detect the faces. OpenCV grabs each frame from the Webcam, and you can then detect faces by processing each frame.



3.2 Hardware setup:



IV. HARDWARE AND SOFTWARE REQUIREMENTS:

4.1 Hardware:

1. RFID tag
2. RFID reader
3. Arduino microcontroller
4. DC motor
5. Power supply
6. Buzzer

4.2 Software:

1. Python coding
2. Libraries of Ubuntu

V. APPLICATIONS:

This project 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.

VI CONCLUSION:

The design and its implementation of exam paper leakage system were effectively carried out with the advantages of minimum peripheral interfaces, low power consumption, low cost, high portability. The response of the system is successfully tested in all the conditions of the system that is mentioned in the system

functionality.

The compact and cost effective solution for examination paper leakage system was achieved with Arduino microcontroller. This project can be extended to protect the answer sheet to send it to the university authorities. It can also be used in various other applications where protection of documents or any valuables is needed. The embedded system can be programmed to close the Electronic Control Box after the completion of the exam.

REFERENCES:

- [1] Electronic Protection for Exam Paper Leakage Smita Gaikwad¹, Namratha Kenjale², Apurva Bagade³, Bahubali Shiragapur⁴ UG Scholar.
- [2] C. Nagaraja, C. Chandra Mouli, S. Athavulla, and T. Bheemalingaiah, A Microcontroller Based Programmable Power Supply, Lab Experiments – A Journal of Laboratory Experiments, Vol. 10, No. 4, December 2010, pp. 249-253.
- [3] C. Chandra Mouli, V. Ramnath, D. Sailaja, and K. Nagabhushan Raju, Embedded System Based Exhaust Fan Control, Lab Experiments -A Journal of Laboratory Experiments, Vol. 11, No. 3, September 2011, pp. 200-201.
- [4] Y. tejaswi, “RFID based access card for public enrolment and distribution: a research survey” IEEE Journal on selected areas in communication. ISSN-2278-7798, Volume2, Issue9, september2013.
- [5] Rfid: Applications, Security and Privacy by Simon Garfinkel, Beth Rosenberg, Pearson Education India, 01-Sep-2006.
- [6] RFID- ‘A guide to radio frequency identification’ by V. Daniel Hunt, Albert Puglia, Mike Puglia, Pearson publication.