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# Automated Face Detection and Recognition for Detecting Impersonation of Candidate

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**Abstract** - Seating Arrangement of students during examinations is distributed. Students face troubles as they have to scrounge for their examination hall numbers and seating arrangement while they are wits end. A new technique which could aid the students in finding their exam halls and seats would be welcoming and very rewarding. This paper —AUTOMATED FACE DETECTION AND RECOGNITION FOR DETECTING IMPERSONATION OF CANDIDATE presents a modernized method of examination hall management. It is possible for a student to find the particular exam hall from any other hall, when they swipe RFID card in a card reader located there. This provides help for the students to identify the floor or get directions to their respective halls without delays. The card reader is available at the entrance of the building, if the students enters wrongly a buzzer alarm sets off, otherwise the room number is displayed on the LCD, connected to controller.

***Key Words***: **Microcontroller, RFID Reader and Tag, LCD display, Power Supply, Arduino Uno, Transmitter and Receiver**.

## 1. INTRODUCTION

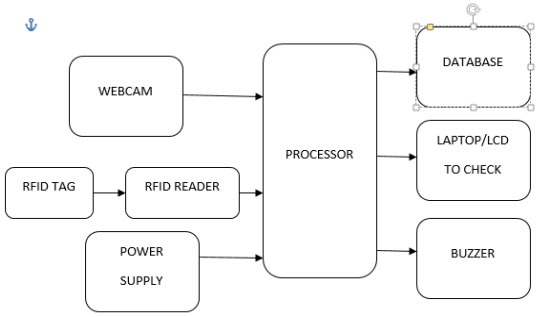
Examination procedures are time consuming since it is of write and forward type. The traditional way of preparing and photocopying the seating arrangements creates a mess and consumes student's time in discovering their hall and seat number, mainly when it comes to universities that accommodate large number of students. This paper brings out a remedy. RFID [Radio Frequency Identification] technology is being widely used in many applications. RFID is a part of Automatic Identification and Data Capture [AIDC] technology. They are similar to bar code. RFID module mainly consist of an interrogator that works as a transceiver and tags that can either be active or passive ones. The interrogator reads the data in tags using radio frequency and also provides power depending on type of tags. Reader communicates with the tag and check it with the database for matching tag and password provided and if verified as true, the LCD module attached will display the corresponding hall number and seating arrangement, otherwise the access is denied. , the camera will capture the image then pass it to the Arduino which is programmed to handle the face recognition by implementing the Local Binary Patterns(LBP) algorithm .It is given to image processing and then compared with the database of known image. If the detected image is matched with one of the image in database, it will marl present .Thus the attendance of the candidate is marked automatically.

## 2. RELATED WORK

A. Juels, "RFID Security and Privacy". In this paper, the problems of privacy and security for radio frequency identification (RFID) that is protection and integrity assurance in RFID systems, and treats the social and technical context of their work. ] A. X. Liu and L. A. Bailey, "PAP: A privacy and authentication protocol for passive RFID tags".In this paper, a security protocol for RFID tags is necessary to ensure the privacy and authentication between each tag and their reader. E. Fleisch presented "From Identification to Authentication,A Review of RFID Product Authentication Techniques". In this paper, investigating how RFID can be used in product authentication in supply chain applications and a review of existing methods is provided. ] Jerry Landt, —Shrouds of Time, The History of RFID||, The Association for Automatic Identification and Data Capture Technologies. In this paper, RFID is originated for short-range radio

technology used to communicate mainly digital information between a stationary location and a movable object or between movable objects .N.W.Lo and K.H.Yeh presented "Novel RFID Authentication Schemes for Security Enhancement and efficiency" which provides the security flaws of two recently proposed hash-based authentication schemes are analyzed at first. Based on this analysis, we establish the security and privacy criterions for the authentication process of RFID systems, and propose a new mutual authentication scheme to eliminate possible security flaws and enhance privacy protection to the owner of an object with RFID tag attached on it . E.W.T. Ngai, Karen K.L. Moon, Frederick J. Riggins, Candace Y. Yi — RFID research: An academic literature review (1995–2005) and future research directions|| International Journal of Production Economics. In this paper, the four main categories: technological issues, applications areas, policy and security issues, and other issues.

## 3. NETWORK ARCHITECTURE

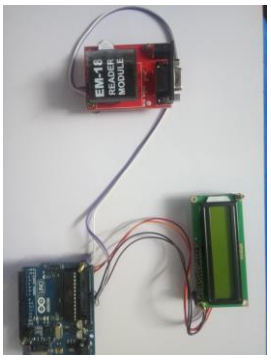



In this paper, power supply is given to the Arduino Uno(Processor) and the tag is scanned by the RFID reader and it sends the examination hall details to the arduino module. The coding is generated using arduino programming. Then the output is generated in the form of hex decimal .The output is displayed in LCD. The webcam in the examination hall capture the image of the students which is passed to the Arduino which handle Face recognition .The Arduino will compare the detected image with the image in database, if it matches, the attendance of the particular student is marked present.otherwise, it is marked absent.

## 4. METHODOLOGY

### INPUT MODULE:

For every tag there is a unique number, the tag consist of student name. The tag is scanned by RFID reader which reads the data and the LCD display will display the student name, exam name, exam hall number, seat number. The details in the reader is n the form of ASCII code and it sends to arduino module which is converted into HEX decimal. Then output will be displayed in LCD display.



### ARDUINO MICROCONTROLLER:

The Arduino Mega 2560 microcontroller board based on the ATmega2560 is used for the project. It receives the data and convert the data into original form and then it is displayed in the Laptop.

### OUTPUT MODULE:

In the output, the attendance of the student is marked present if the face is matched with the image in the database. If not matches, the buzzer sound will be heard.

## 5. CONCLUSION

RFID technology is prominent technology which can be used in wide range of applications. By integrating both RFID and microcontroller creates a project with wider boundaries and effective solutions. Here a simple but effective system has been designed for the convenience of students using the spliced technology and a prototype to prove the feasibility and demonstrate the attributes has been developed. This idea can be improved upon by adding more features like - maintaining student's details like fee due, library transactions, attendance etc... The idea is beneficial to both the student and the corporate society depending upon its effective implementation as it sow in the seeds to develop various veritable projects.

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