



ATTENDANCE MONITORING SYSTEM WITH FACE RECOGNIZATION USING IOT

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Abstract:- Our Paper involves the student attendance and faculty attendance. The student attendance is marked by face recognition. For face detection and face recognition the raspberry pi. If the camera is connected to Raspberry pi USB port then only images will capture of the students who are available in the class for face detection. The captured images recognises with stored images then in that images we will recognize the faces of every student and according to that attendance will be given to that subject class. This process is carried out for every class and students are given attendance accordingly. Faculty attendance is monitored with this project. A unique RFID card is given to the faculty, when faculty enters the classroom swipes the RFID card attendance will be marked with date and time. ESP8266 is used along with OLED to display the faculty attendance. We can mark the attendance at any time without any human Intervention.

Keywords: Student Attendance, Raspberry Pi, Camera, Face Detection, Face Recognition, Image Processing, Open CV, Python, Faculty Attendance, ESP8266,OLED

I INTRODUCTION

Biometrics is an evolving technology used for identification. Biometrics is associated with automatic identification of a human being depending upon biological factors as in fingerprint, iris, facial recognition. In our project biometric fingerprint and face recognition attendance system is proposed but, with a twist. Instead of using GSM , ZIGBEE, RFID, we are making this setup IOT based to overcome the consequences of the above This would improve the accuracy of the records, approve proper paid days and leave days of the staff and this shall all be monitored by a superior authority because it will remove all the hassles of the staff rushing for their attendance consideration on register and then the difficulties in payment making of the staff due to improper attendance consideration. Every professional

organization has to maintain a proper record for effective functioning of the organization. Presenting a better attendance system for departmental staff so that the records can be analyzed and handled with ease and accuracy was a vital key behind motivating this project. The result of the data collected through this system will be stored on web server.

II. LITERATURE SURVE

Speech Biometric Based Attendance System by Subhadeep Dey, Sujit Barman, Ramesh K. Bhukya, Rohan K. Das, Haris B C, S. R. M. Prasanna and R. Sinha. In this paper we learnt about the development and implementation of a speech biometric based attendance system. The users access the system by making a call from few pre decided mobile phones. An interactive

voice response (IVR) system guides a new user in the enrolment and an enrolled user in the verification processes. The system uses text independent speaker verification with MFCC features and i-vector based speaker modeling for authenticating the user. Linear discriminant analysis and within class covariance normalization are used for normalizing the effects due to session/environment variations. A simple cosine distance scoring along with score normalization is used as the classifier and a fixed threshold is used for making the decision.

The developed system has been used by a group of 110 students for about two months on a regular basis. The system performance in terms of recognition rate is found to be 94.2 % and the average response time of the system for a test data of duration 50 seconds is noted to be 26 seconds. 2. Student Attendance System in Classroom Using Face Recognition Technique by Samuel Lukas, Aditya Rama Mitra, Ririn Ikana Desanti, Dion Krisnadi. This paper proposes a method for student attendance system in classroom using face recognition technique by combining Discrete Wavelet Transforms (DWT) and Discrete Cosine Transform (DCT) to extract the features of student's face which is followed by applying Radial Basis Function (RBF) for classifying the facial objects. From the experiments which is conducted by involving 16 students situated in classroom setting, it results in 121 out of 148 successful faces recognition.

Wireless Fingerprint Attendance Management System by Penta Anil Kumar, Maddu Kamaraju. This paper presents the design methodology of a simple and high real time Zigbee - biometric system for easy and time saving attendance management using the finger prints of the employees at any organization along with the employee incoming and outgoing log maintenance.

The Components included in our proposed system are 1. Raspberry pi 3

- Fingerprint scanner
- Web camera
- Keypad 4*3 5.
- LCD 16*2
- Buzzer

III THE PROPOSED SYSTEM

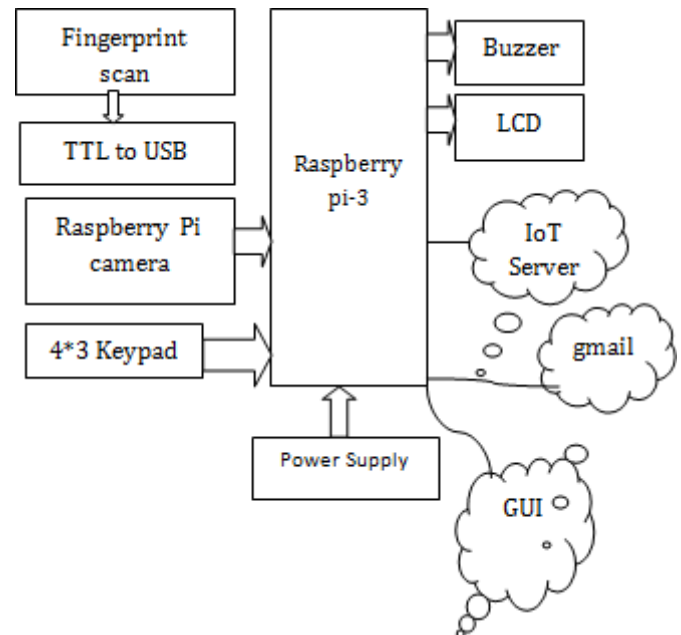


Fig.1. Block Diagram

IV. METHODOLOGY

Module 1-Raspberry Pi

The Raspberry Pi is a minimal cost, small credit-card sized computer that plugs into a monitor or TV and uses external keyboard and mouse for functioning. It is a useful device that permits people of all generations to explore programming languages like Scratch and Python. The Broadcom BCM2835 which is used in primary generation Raspberry Pi is similar to chips that are used in the first generation of modern smartphone whose CPU is an older architecture of ARM versions 6. This architecture includes processor of 700MHz ARM 11 76JZF-S, graphics processing unit that is Video Core IV and RAM.

Specification :

- CPU is Quad-core 64-bit ARM Cortex A53 which is clocked at 1.2 GHz.
- GPU is 400 MHz Video Core IV multimedia.
- Memory available is 1GB LPDDR2-900 SDRAM.
- There are 4 USB ports.
- Video outputs are HDMI, composite via 3.5mm jack.
- Network available is 10/100Mbps Ethernet and 802.11n Wireless LAN.

- There are 17 GPIO plus specific functions and HAT ID bus in peripherals.
- Consist of Bluetooth 4.1
- Power source provided is 5V via MicroUSB or GPIO header.
- Size of the board is 85.60mm*56.5mm.
- Weight of the board is 45gm.

V. RESULT

Password entered manually, face recognized and attendance marked.

VI. CONCLUSION

With the use of this application, we can fairly conclude that It will help the authorities of the educational institution to maintain the security and integrity of its vital data like staff attendance, students attendance, examination marks etc. As the datashall immediately be transmitted over IOT server wirelessly the authorities need not have to worry about the misplacement or misuse of attendance registers or examination registers, etc.

Thus project is the user friendly approach.

VII. FUTURE SCOPE

The project can be implemented on internet

- Project can be updated in near future as and when in requirement for the same arises.
- Discontinuous of particular student eliminate potential attendance
- Individual attendance system with photo using student login.

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