

**Review Paper On: Video Surveillance Based Attendance System**¹Mr. Rahul V. Patil, ²Mrs. S.B.Bangar¹(PG Research Student, Department of Computer Science & Technology,
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Abstract — Attendance management system is very important and popular method to maintain the record of work hours of everyone in organization. The attendance management system used for multiple areas such as college, university, business organizations. It is simple method to calculate how many people are present or absent. Schools and colleges are using attendance system so that they will give marks to students based on their attendance at submission time. Multiple methods are available for calculating attendance i.e. Attendance using pen and paper, fingerprint attendance system, RFID based attendance system, wireless iris recognition attendance management system, real time human face detection and tracking, automated attendance management system using face recognition, attendance management system using SMART-FR, robust and real time face detection.

Keywords- RFID, IRIS, SMART-FR

I. INTRODUCTION

Attendance management system which is used for calculate the attendance. Multiple methods are used to calculate the attendance. Fingerprint based attendance system [8] this method is used to calculate attendance. In this method attendance is captured using device which is capable to take and store finger prints. Considering the cost of device and operation capability this method is suitable for organization having more than 100 attendance records daily. In this system no chance for fake attendance. RFID based attendance system [10] Radio frequency identification it is used for identify and track the tag for implemented on object. In this method electromagnetic and electrostatic coupling in radio frequency for communication in reader and tag.

Wireless IRIS recognition attendance management system [12] this method is using IRIS pattern for personnel identification. This is proposed in 1936 by ophthalmologist Frank Burch. This technique is used for multiple applications such as access control for high security installations and credit card usage verification & employee identification. Real time human face detection and tracking [2] this technique is used for practical applications such as smart captcha, webcam based power/energy saver, time tacking service outdoor surveillance camera service, video chat service, teleconferencing. Automated attendance management system using face recognition[5] this method is used for face detection using viola Jones algorithms which is include Haar features, integral image, adaboost, cascading. Local binary pattern (LBP) is used to implement face recognition. Robust and real time face detection [3] this technique consists new algorithms which are used to construct a framework for robust and extremely rapid visual detection.

Definition:

Attendance management system based on face recognition algorithms having image acquisition, database development, face detection, pre-processing, feature extraction and classification that stages followed by post-processing stage.

II. Techniques:**A. Fingerprint based attendance system**

This system is developed by L. Jian-po et.al. He developed this system using wireless technology. To implement this system they created remote data storage. Fingerprint data is stored on remote system using zigbee wireless technology.

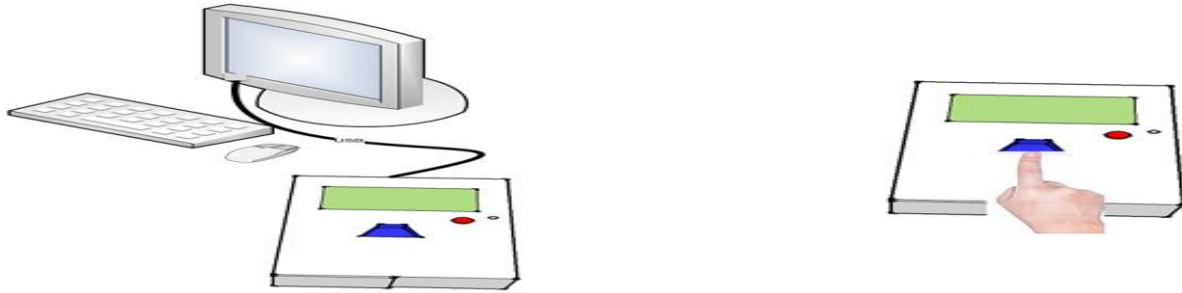


Fig 1. Portable fingerprint attendance system

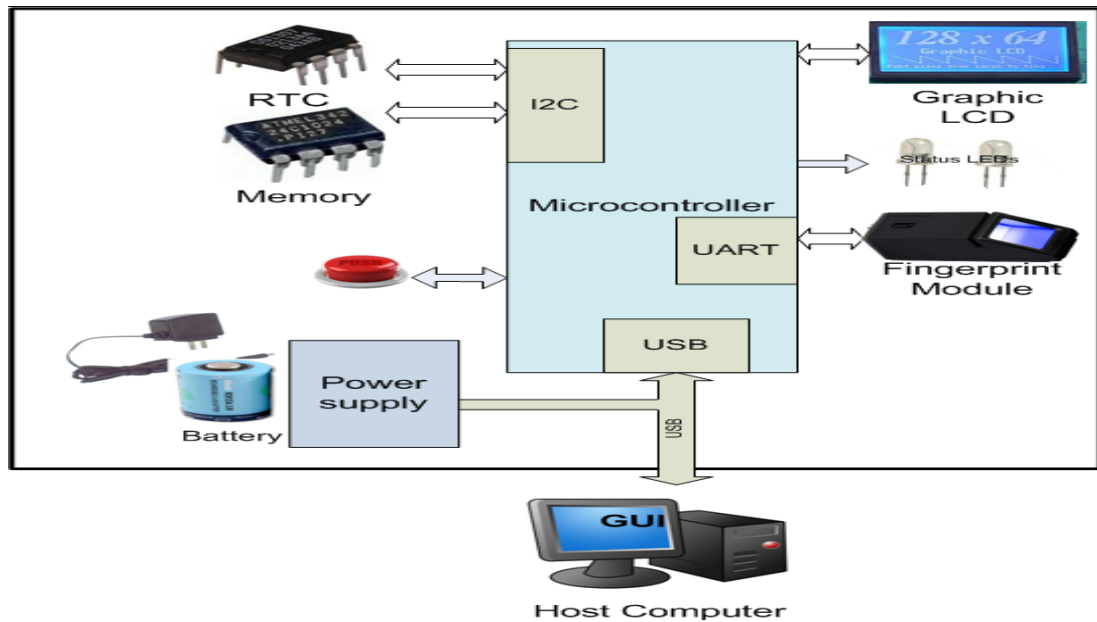


Fig. 2. System Architecture

The Fig.2. Is system architecture of fingerprint based attendance system that consists two sections i.e. one portable device & one host computer. Fingerprint attendance device is handheld device it is easy to carry.

B. RFID based attendance system

Radio frequency identification consist of RFID and reader tag. It is useful for identify the person or product based on tag on object. It takes less time to capture the attendance. This technique is time efficient attendance encoded by tag ID .At the time of scanning if current tag ID is matched with tag ID present in database then attendance is approved else error message will be displayed on screen. The system is implemented using RS232 and universal serial bus port allows the system to display information and attendance of a particular person on personal computer.

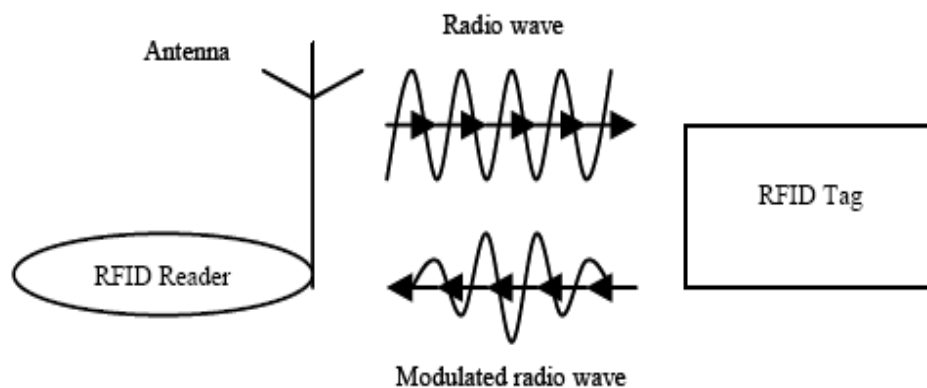


Fig. 3. Basic operation of RIFD System

The Fig. 3. Which is shown as basic RFID system includes the RFID reader and RFID tag which contain coil for serves antenna for transmitting and receiving signals.

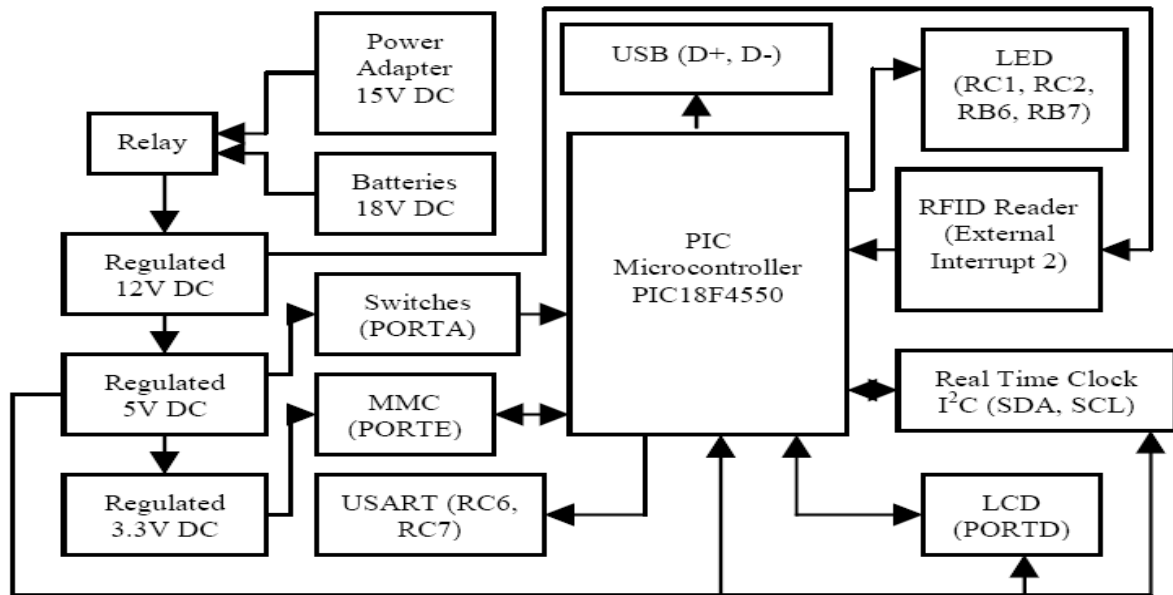


Fig. 4. Block diagram of RFID Based attendance system

The block diagram of RFID based attendance system used for microchip PIC18F4550, RFID reader and tag, ds1307 real time clock integrated circuit, MAX232 serial communication IC, liquid crystal display, power supply system. The real time clock function will be used DS1307 IC.

C. Wireless IRIS recognition attendance management system

The wireless IRIS recognition attendance management system consists of two things for iris recognition attendance management system. First one is online iris recognition attendance management system and second one is offline attendance management system

In Online iris recognition attendance management system it will connected with personal computer or work station having all iris recognition templates for people in database. Offline iris recognition attendance system can be used for finish the process of capture the image in iris recognition, extracting minutiae, storing & matching.

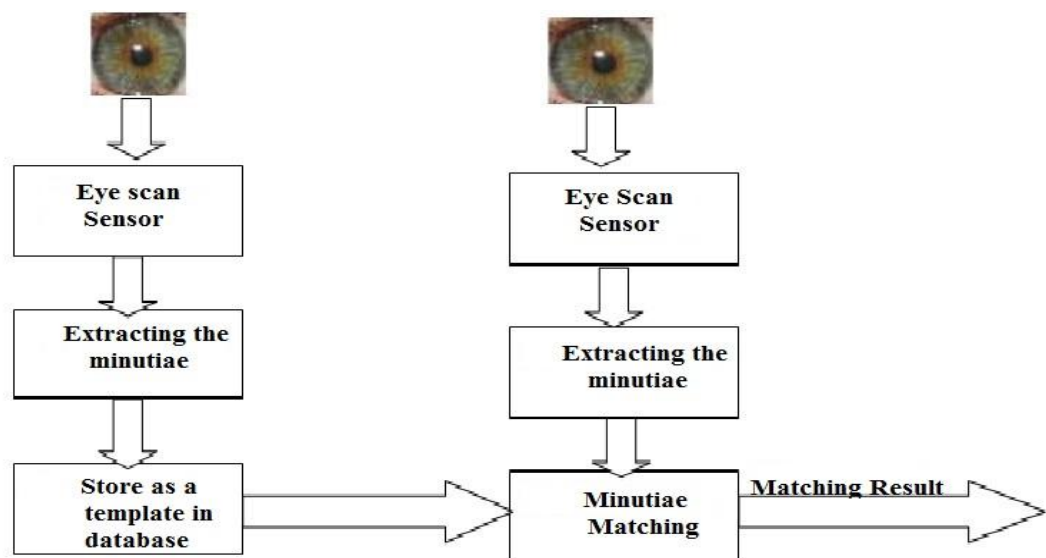


Fig. 5. IRIS recognition verifying process

The Fig. 5. Shown above is verifying process for iris recognition. Digital image of person's eye is captured. Feature extract algorithm is used to extract the eye features. Minutiae are extracted & stored as template for later use. Iris recognition sensor as to extract in minutiae from captured image. Matching algorithm is applied in match the minutiae with the stored template.

D. Automated attendance management system using face recognition

This system includes two important sections first one is Face detection and second one is Face recognition.

1. **Face detection:** The face detection activity detects the human faces present in the video using face detection algorithm. We propose to implement viola Jones face detection algorithm. This algorithm has some internal implementation steps i.e. Haar features, Integral image, Adaboost and cascading
2. **Face recognition:** To implement face recognition Local binary pattern (LBP) is used.

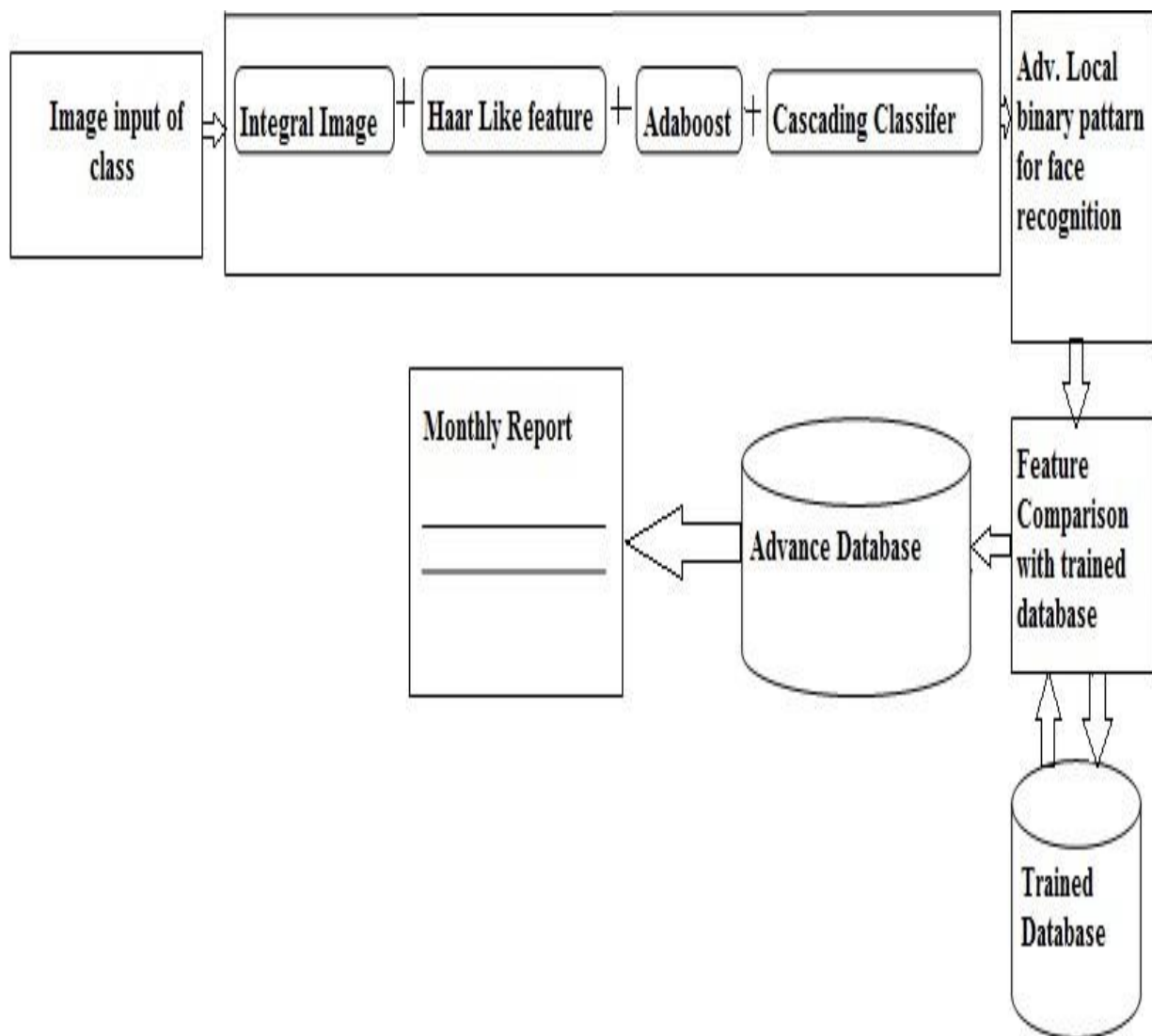


Fig. 6. System architecture

The Fig.6. Is flow of attendance system which uses above mentioned algorithms the steps are included as Input Image, face detection by viola Jones algorithm, face recognition by local binary pattern; compare the feature, database, report.

III. Comparison Table:

Sr. No.	Title	Description	Research Gap
1	Finger Print Based Attendance System	This method is used to calculate attendance. In this method attendance is captured using device which is capable to take and store finger prints. Considering the cost of device and operation capability this method is suitable for organization having more than 100 attendance records daily. In this system no chance for fake attendance.	Time Consuming For students to wait and give their attendance. Active participation is required from students.
2	RFID Based Attendance System	This system is radio frequency identification having RS232 to connect the computer and save the record.	This system has problem of fraudulent access.
3	Wireless IRIS recognition attendance management system	This system is using wireless and biometrics to solve the problem in spurious attendance, trouble of laying the network.	The performance is poor when topography is bad
4	Implementation of attendance management system using SMART-FR	This system consist is Image acquisition, noise removal, face detection, recognition ,attendance	This system to provide privilege is carrying to need in now days. The better result has been developed some room are improve.
5	Automated attendance management system using face recognition	This method is used for face detection using viola Jones algorithms which is include Haar features, integral image, adaboost, cascading. Face recognition implemented using local binary pattern (LBP).	It is very difficult to perfect the system is inefficient to large number of people.

IV. Conclusion

These attendance systems are working properly to calculate the accurate attendance. Multiple techniques, methods are used for that system. These attendance systems are time consuming, poor performance if many people are present at same time.

The future work is to improve the face recognition rate of algorithms i.e. unintentional changes like That head & using scarf and beard. Improve the algorithm for better performance.

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