Smart Attendance System using Face Recognition and RFID

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Abstract - *The goal of this paper is to build up a working model of a framework that will encourage class control for establishment's teachers in a study hall by distinguishing the frontal essences of understudies from an image taken in a study hall. The second piece of the framework will likewise have the option to play out a facial acknowledgment against a little database*.

Key Words: **Face Recognition, Database, Python**

1. INTRODUCTION

The innovation points in bestowing a huge information situated specialized developments nowadays. These days Attendance is considered as a significant factor for both the understudy just as the educator of an instructive association. With the progression of the profound learning innovation the machine naturally distinguishes the participation execution of the understudies and keeps up a record of those gathered information. In general, the attendance system of the student can be maintained in two different forms namely,

- Manual Attendance System
- Automated Attendance System

1.1 Manual Attendance System

Manual Student Attendance Management framework is where an instructor worried about the specific subject need to call the understudies name and imprint the participation physically. Manual participation might be considered as a tedious procedure or in some cases it occurs for the instructor to miss somebody or understudies may answer on various occasions on the nonattendance of their companions.

1.2 Automated Attendance System

Automated Attendance System utilizing Face Recognition suggests that the framework depends on face identification and acknowledgment calculations, which is utilized to naturally identifies the understudy face when he/she enters the class and the framework is able to marks the participation by remembering him.

The coding of the proposed system has been done in Python. Python is a general purpose, dynamic, high-level, and interpreted programming language. It supports Object Oriented programming approach to develop applications. It is simple and easy to learn and provides lots of high-level data structures

In this paper, we have discussed designing and implementation of the face recognition based attendance system which is implemented using Python Face Recognition Module and the attendance stored in the database through structured query language with the help of Hypertext Preprocessor(PHP) which also used for the web designing.

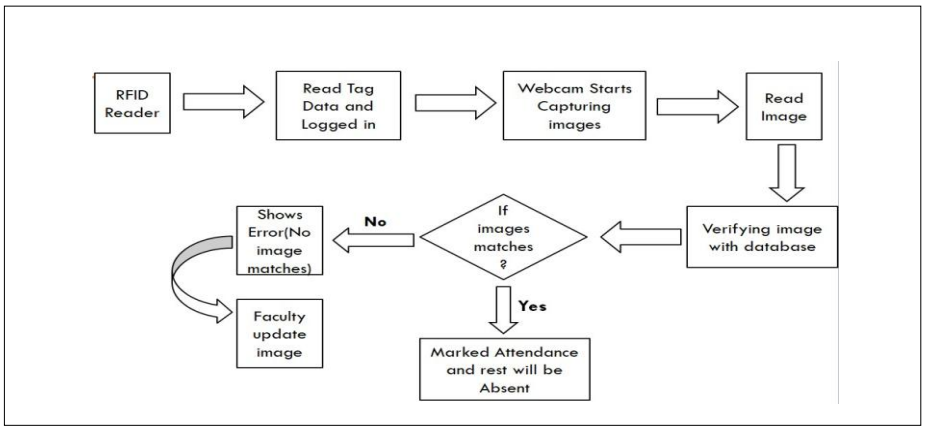

Figure 1. Data Flow Diagram

2. DESIGN OF PROPOSED SYSTEM

In my face recognition project, a computer system will be able to find and recognize human faces fast and precisely in images that are being captured through a surveillance camera. Numerous algorithms and techniques have been developed for the student attendance that can easily recognized their attendance so that the attendance database can be easily reflected automatic.

When teacher enters in the classroom then they scan their RFID with the machine, this helps to login the teacher to the attendance portal system then high-resolution digital camera starts to detect and recognize the faces of the students and the machine compares the recognized face with students' face images stored in the database. Once the face of the student is matched with the stored image, then the attendance is marked in attendance database for further calculation. If the captured image doesn't match with the students' face present in the database then faculty update this image as a new image onto the database. In this system, there are possibilities for the camera to not to capture the image properly or it may miss some of the students from capturing.

Utilization of face acknowledgment with the end goal of participation stamping is the savvy method of participation the executives framework. Face acknowledgment is increasingly precise and quicker strategy among different methods and decreases possibility of intermediary participation. Face acknowledgment give inactive ID that is an individual which is to be distinguished doesn't to need to make any move for its personality.

Face acknowledgment includes two stages, initial step includes the recognition of appearances and second step comprise of recognizable proof of those identified face pictures with the current database. There are number of face discovery and acknowledgment strategies presented.

Face acknowledgment works either in type of appearance based which covers the highlights of entire face or highlight based which covers the geometric element like eyes, nose, eye foreheads, and cheeks to perceive the face.

Our framework utilizes face acknowledgment way to deal with diminish the blemishes of existing framework with the assistance of AI, it requires a decent quality camera to catch the pictures of understudies, the location procedure is finished by The proposed framework is intended for robotizing the participation of the diverse association and lessens the defects of existing manual framework.

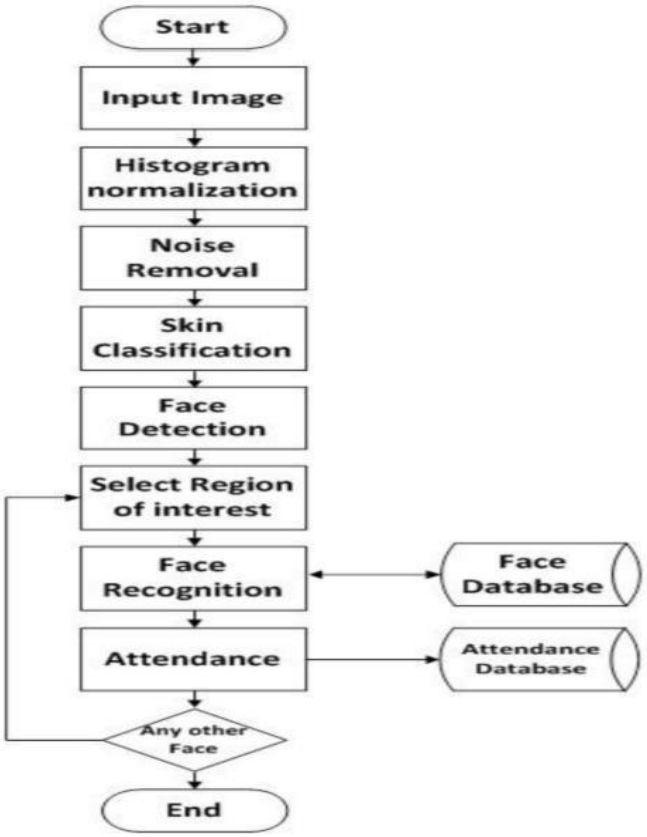

Figure 2. Flow Chart of the Proposed System

3. CONCLUSION

It can be concluded from the above trial results that a solid, quick, proficient and secure framework has been proposed to supplant a manual and untrustworthy framework. Results have shown that this framework can be done in scholarly foundations to accomplish better outcomes as indicated by participation the board. This framework will diminish the executives endeavors and spare time, and will supplant writing material materials with an electronic gadget. Thus, a framework with expected outcomes has been grown yet there is still some opportunity to get better. The framework can't perceive an individual with a far separation of more than 10m utilizing PC camera, and the understudies should try to avoid panicking infront of the framework camera so as to make the face acknowledgment effectively. At last, this proposed e-participation framework can be utilized in colleges or schools or even in organizations to make a participation report for understudies or representatives. This framework has minimal effort and accessible requirments (copmuter with webcam, database programming and executable duplicate of the proposed framework).

The entire project has been created from the prerequisites to a total framework close by assessment and testing. The framework created have accomplished its point and goals. The customer was content with the general execution of the framework. Be that as it may, however a few difficulties were experienced during execution, they were tended to and actualized.

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