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MULTIMODAL ATTENDACE SYSTEM

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Abstract:

In this digital time, Face recognition is one of the most widely used biometric and also it plays a very important role in almost every sector. Face Recognition has got many more advantages as well as it also offers security also gives a well authentication and identification. As compared to iris recognition and fingerprint recognition it has low accuracy, despite this it has been used due to its contactless and non-invasive procedure. Also, this system can also be used for marking the attendance in schools, colleges, offices etc. Facial recognition has been brought to cancel the old system consisting of register book that we used in the earlier days. This system aims to make a class attendance system which uses the conception of face recognition as being homemade attendance system is time consuming and clumsy to maintain. Therefore, the need for this system increases. This system consists of firstly the data creation then face detection and face recognition and at very last updating the attendance sheet. By using he students in the class Database is created. In this system Haar Cascade is used for face detection and recognition from live streaming video of the classroom. Object detection is done by using Haar feature based, the algorithm requires a lot of positive images and negative images to train the classifier. Then these features are extracted from it. The attendance sheet will have in time and out time and will also cover the hours. The student firstly needs to register himself in the system and then the face database will be stored in the file, then he will log in into the system and the system will mark his in time. During logout if the student completes 8 hours then and then only he will be marked as present otherwise he will be marked as absent. The overall attendance will then be gattered by the respective faculty which gets stored in the case in log files.

Keywords — **Facial Recognition, Attendance system, Haar Cascade, Database**

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I. INTRODUCTION

Traditional method of marking the attendance is very much tedious and time consuming in several schools and colleges. Traditional methods consist of manually calling the names of the students which might take 5 minutes of entire session which is an extra burden to all the facilities. There are nearly chances of proxy attendance. Therefore, many organizations started organizing many other techniques for recording attendance like use of Radio Frequency Identification (RFID), iris recognition, fingerprint recognition, and so on. However, these systems are line based which might consume more time and are disturbing in nature. Facial recognition is a way of recognizing or confirming an individual's identity using their face. Photos, videos or even in real-time Face recognition system can be used. Biometric security is a class of facial recognition. For security and law implementation purpose this

technology can be used and there are increasing interest in other areas of use too. Here for marking the attendance individual faces will be considered. The purpose of this system is to build a system which is based on face recognition methods. Nowadays, face recognition is gaining more approval and has been widely used. Our system detects the faces of students and matches with the data stored in files and if matched students will mark as present.

II. OBJECTIVE

The aim of this project to develop a system that incorporates facial recognition technology to recognize and verify a student's facial features and to record attendance automatically, which also provides the capabilities to show the current log in and log out time of the students replacing the usual way of recording attendance which takes a lot of time if there are many students. Students also find it difficult to find their name to record attendance in the form of regular prints used today. This system is proposed to eliminate or reduce as much as possible the hardships of existing system and avoid errors while entering data. If students are not registered in the system they need to register first and then they can get their current log in and log out time. Also, the teachers are benefitted from this as they do not need to keep a track of the students as all the work is done by the system. This reduces the majority of burden from the teachers.

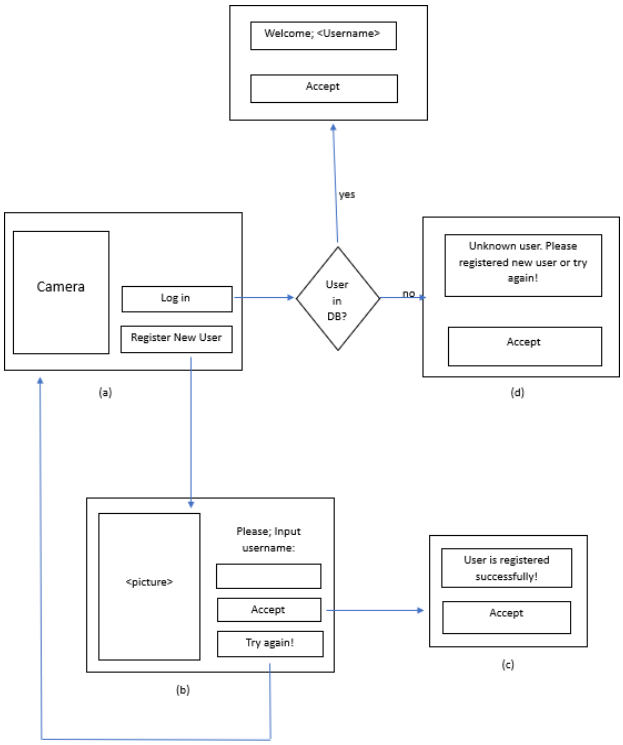
III. LITERATURE SURVEY

A class can consist of number of students and every year a lot of new students come to the college. So, if we continue carrying our old traditional system then there will be a lot of records and keeping a track of it can be pretty much difficult. By using facial recognition system things will be simplified also there will be no chances of proxy and the time consumed by it will also be very less. Our proposed system will an added advantage to the college if taken to higher scale, by uploading data on the cloud the system will be faster, easier to access and will be more secure.[1] Face Recognition based attendance management system, 5th May 2020, Smitha, Pavithra S Hegde, Afshin. In this paper, the authors have explained how they used Haar-Cascade classifier and Local Binary pattern histogram for face recognition and face detection. After the faces are detected and recognized respective faculty will get an mail.[2] A literature review on smart attendance system, 10th July 2022, Bawar Ali Abdalkarim and Devrim Akgün. In this paper the authors have focused on Automatic recognition of a particular individual-based system on distinguishing characteristics such as QR code, ID and password, face recognition, fingerprint recognition and this paper presents a literature overview of the recent works on automated and smart attendance tracking system.[3] Smart Attendance management system using face recognition, 29th October 2018, Kaneez Laila Bhatti, Laraib Mughal, Faheem Khuhawar, Sheeraz Ahmed Memon. In this the authors have created a attendance management system that keeps a tracks of students daily attendance which is recorded subject wise and it is stored by the administrator. The system will automatically start taking snaps when corresponding system arrives and then it applies face detection and recognition techniques to the given image and mark them present with corresponding time and subject id.[4] Face Recognition and Identification using Deep learning approach, 2020, KH Teoh, RC Ismail, SZM Naziri, R Hussin, MNM Isa and MSSM Basir. This paper describes the concept of deep learning and how to design and develop a face recognition system that is created by using a OpenCV in python through deep learning.

IV. FLOWCHART OF MULTIMODAL ATTENDANCE SYSTEM

Figure number 1 is the flowchart of proposed system for multimodal attendance system which consist of following blocks firstly the user needed to register into the system. For registration it will take to a new window where the camera will click the photo and we will input the username. If he/she isn't satisfied with the image he can try again. After registration he/she can log into the system. The system will check whether the image is getting matched with image in the database and if it gets match it will show Welcome and hence the log in time of the user can be marked.

Figure 1:Flowchart of proposed



system

The user can log out the system by clicking the log out button and his/her log out time will be recorded.

V. SOFTWARE AND SYSTEM DESCRIPTION

The design of the graphical user interface is made with the help of python as python is a high-level, general-purpose language and it is easy to interpret and understand as well. PyCharm is used as an IDE for the proposed system. For face detection and recognition, we can use either laptop camera or can use webcam, which gives better quality of photos than laptop camera.

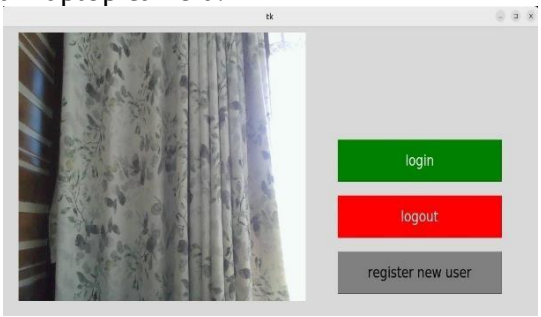


Figure 2: Picture of proposed system

Fig.3:Registered user

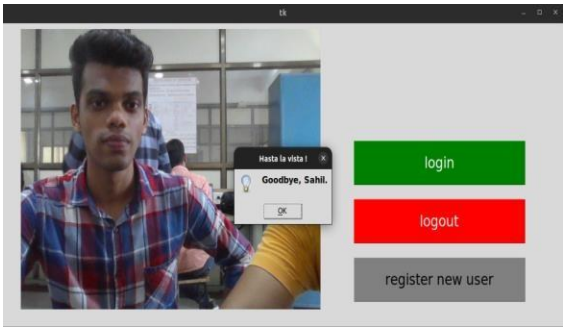


Fig.4:User logs out

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