

SMART ATTENDANCE SYSTEM USING OPENCV

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ABSTRACT_In latest tutorial system, to Maintain the student's attendance file with daily things to do is a difficult work for faculty. The identify of pupil referred to as via school this takes time taking and misplacement of attendance which leads to proxy attendance. Marking attendance manually isn't solely time eating however additionally it leads to unsecure, unreliable and may additionally be guide attendance misplaced due a number motives like dropping data and so on .To beautify Manual attendance gadget with the aid of the use of clever attendance device performs full-size function to reap guide device disadvantages. In Now-a-days clever attendance machine performs essential position for taking attendance for keep student's attendance archives in a college database which similarly used in evaluation performance. The each day attendance of college students is recorded duration wise which is saved already by means of the college administrator crew and also school having a reproduction attendance records. The above state of affairs will takes place at the time corresponding subject's school arrives and logged into their device and routinely begins taking snaps the use of their diagnosed database to publish correct and right attendance will submit in the college portal. The detecting gadget is developed through the integration of ubiquitous elements to make transportable system for taking snaps of students. It will be managing and monitoring the college students attendance archives the usage of the technological know-how like Face Recognition which is designed in a structure of software program for a hardware system

1.INTRODUCTION

Automation of Attendance System has an gain over traditional strategies in that it saves time and can additionally be used for monitoring. This additionally aids in the prevention of false participation. Other biometric techniques, such as these noted below, can additionally be used to computerise the attendance process:

1. Log Book entry.
2. Fingerprint based totally System.
3. IRIS Recognition.
4. RFID based totally System.
5. Face Recognition.

Face Recognition is a famous photograph processing technological know-how due to the fact of its full-size usage. Face consciousness might also be used to discover human beings in an agency for attendance purposes. The upkeep and comparison of attendance information is quintessential in each and every organization's overall performance review. The intention of developing an attendance monitoring gadget is to automate the traditional technique of taking attendance. With much less human interaction, the Automated Attendance Management System conducts the daily duties of attendance marking and review. When the depth is greater, the typical structure of attendance marking will become very time ingesting and complicated.

Facial cognizance is the most unique, efficient, precise, and economical of all the methods described above

Automation of Attendance System has an advantage over conventional methods in that it saves time and can also be used for monitoring. This also aids in the prevention of false participation. Other biometric techniques, such as those mentioned below, can also be used to computerise the attendance process:

1. Log Book entry.
2. Fingerprint based System.
3. IRIS Recognition.
4. RFID based System.
5. Face Recognition.

Face Recognition is a popular image processing technology because of its widespread usage. Face recognition may be used to identify people in an organisation for attendance purposes. The maintenance and evaluation of attendance records is critical in every organization's

performance review. The aim of creating an attendance monitoring system is to automate the conventional method of taking attendance. With less human interaction, the Automated Attendance Management System conducts the everyday tasks of attendance marking and review. When the intensity is greater, the traditional form of attendance marking becomes very time consuming and complicated.

Facial recognition is the most unique, efficient, precise, and cost-effective of all the techniques described above

Open CV (Open Source Computer Vision Library) is a open supply pc imaginative and prescient software program library for the reason of desktop learning. Open CV was once developed to serve the cause of laptop imaginative and prescient functions and to stimulate the utilization of desktop understanding in the commercially plausible products. Open CV is a BSD- licensed product which is handy for the utilization and change of the code. The library incorporates greater than 2500 superior algorithms which includes an great set of each traditional and modern-day laptop imaginative and prescient and computer studying algorithms. These algorithms can be employed for the detection and focus of faces, identification of objects, extraction of three D fashions of objects, manufacturing of 3D factor clouds from stereo cameras, stitching pix collectively for manufacturing of a excessive decision picture of an complete scene, discovering comparable pix from an photo database, doing away with purple eyes from snap shots taken the use of flash, following ye movements, cognizance of surroundings and setting up markers to overlay it with intensified actuality etc. It consists of C++, Python, Java and MATLAB interfaces and helps Windows, Linux, Android and Mac OS. Open CV ordinarily entails real-time imaginative and prescient purposes taking benefit of MMX and SSE directions when available. A full-featured CUDA and Open CL interfaces are being gradually developed. There are over five hundred algorithms and about 10 instances features that shape or returned these algorithms. Open CV is written inherently in C++ and has a template interface that works harmoniously with STL containers.

2.LITERATURE SURVEY

This section reviews the research works carried out by different researchers that are related to the proposed work. In general, the mobile application is developed using any one of the languages such as Java using software development kit (SDK). The data used for the application or processed by the application are stored in the data bases. The following mobile

application developers succeed in developing the student attendance management system with the structured query language (SQL) data base

V. Somasundaram et al presented a mobile-based attendance system using visual basic .Net (VB.NET) and SQL server. This system is used to store, organize, find and manage the information of the students and helps to generate the reports of the student information [1].

K. Akhila et al proposed an android-based mobile application for student attendance tracking system. It offers reliability, time saving, and it is easy to control and to take the attendance using android mobile phones. It can reduce the efforts of the staff members towards attendance maintenance. It is an efficient and user friendly android mobile application for attendance monitoring [3]. Rakhi Joshi et al developed an android-based attendance management with smart learning system. The web-based mobile application is developed with a SQL server. This system is used to mark attendance through smart phone and gives a prior intimation to student as soon as their attendance goes below the specified level through SMS [2]. Moreover, Amita Dhale et al. presented a survey on “smart connect”, android and web based application for college management system. It is developed using SQL server. It is mainly used to store the details required for the institutions [8].

The mobile operating system (MOS) place a key role in the development of mobile application since the application for one MOS is not compatible with other MOS. Therefore, before developing the mobile application for a particular application the MOS must be considered and the application must be developed for the same. Thus, the student attendance management and monitoring systems are developed for the Android MOS. Akshay A. Kumbhar et al presented an automated attendance monitoring system using android platform. It is then used to maintain the attendance of the student regularly [9]. Jessenth Ebenezer et al presented an android-based student activity register system. It is used to mark the attendance and to store the details of the students so that the professors or higher officials can view the attendance of the students and regulate them if they are not regular to the classes [7].

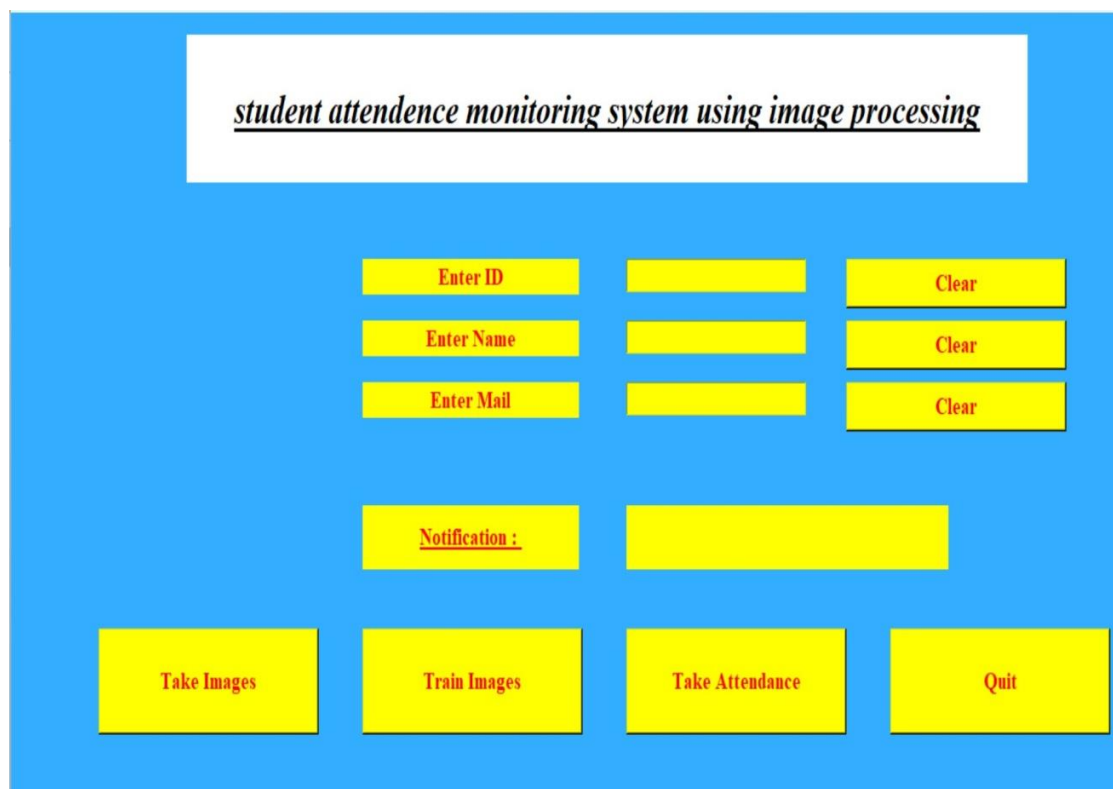
The mobile application-based attendance management system is also employed in the organisations to mark the attendance of the employees. S.P. Avinaash Ram and J. Albert Mayan presented a mobile application for employee registration and mobile attendance. It is used to update the employee attendance regularly and track their attendance. Moreover, it is helpful to

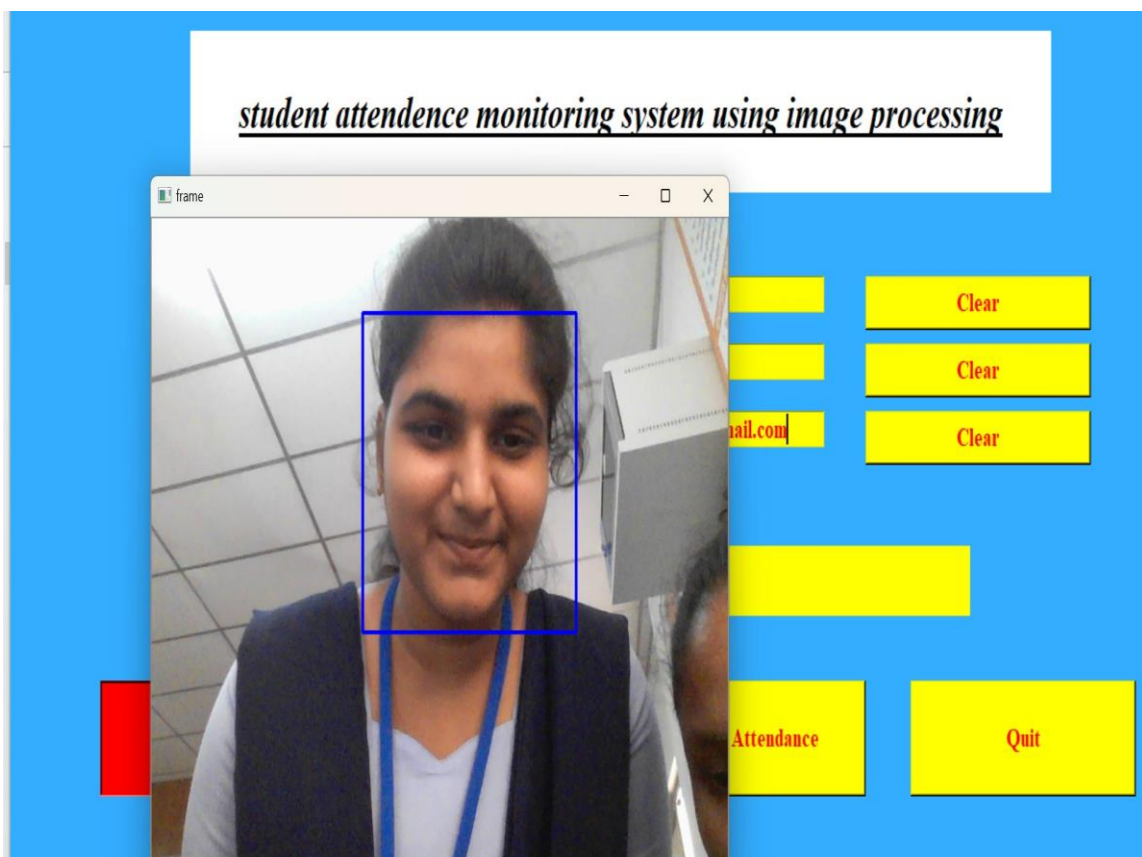
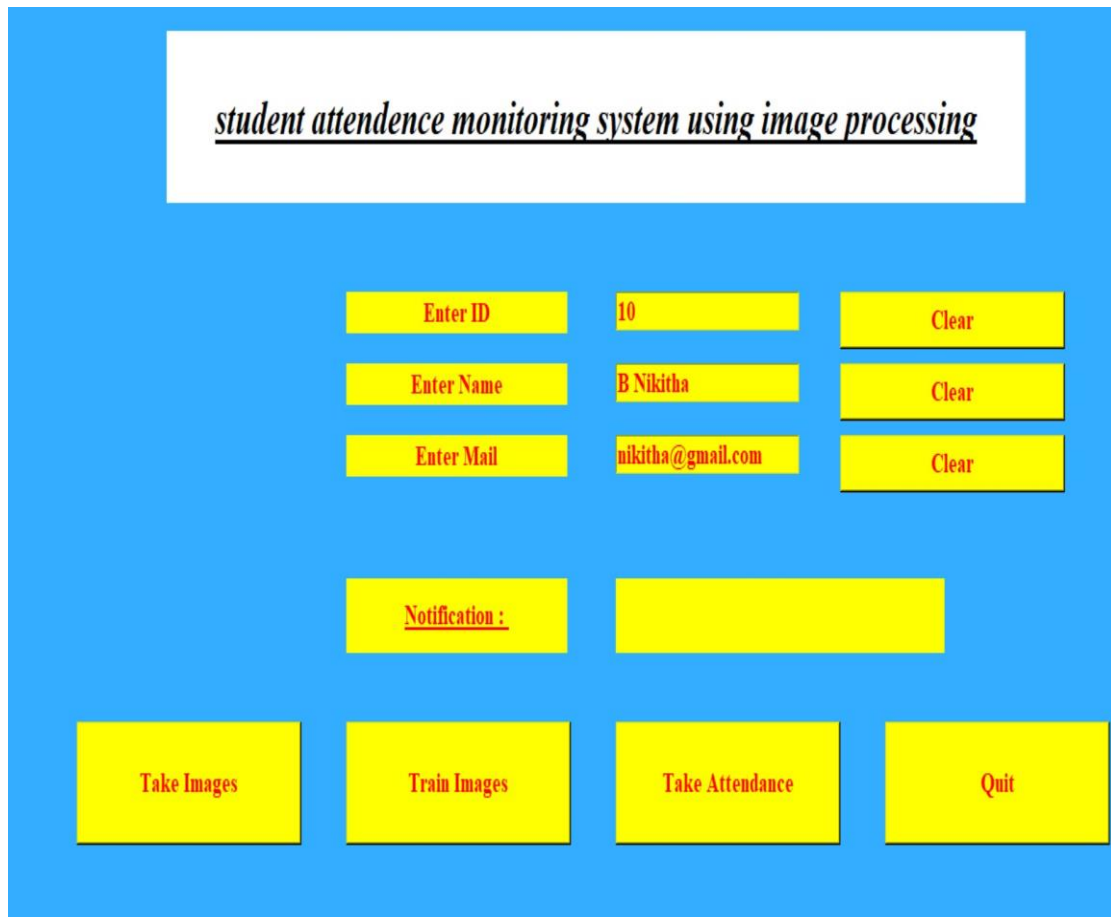
the staff and the authorities to take the attendance. This system is also used to know the number of employees easily and to monitor whether they are regular to the organisation. This system also provides the details of every employee [4].

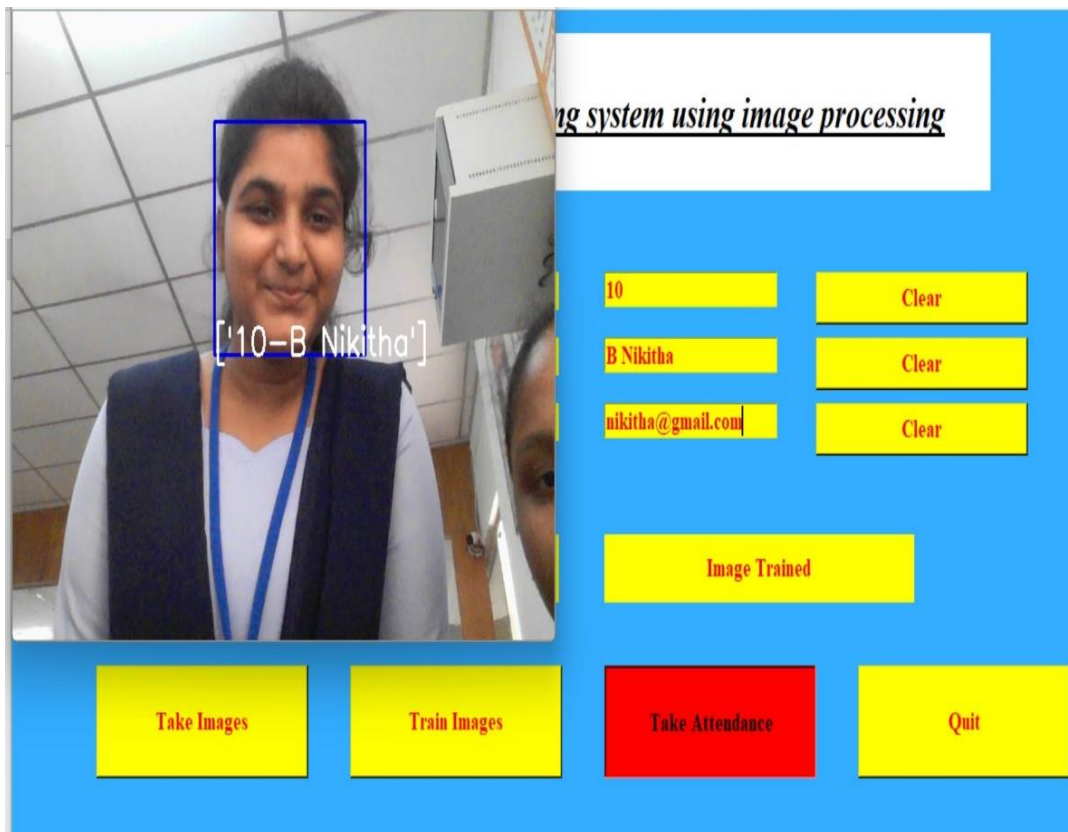
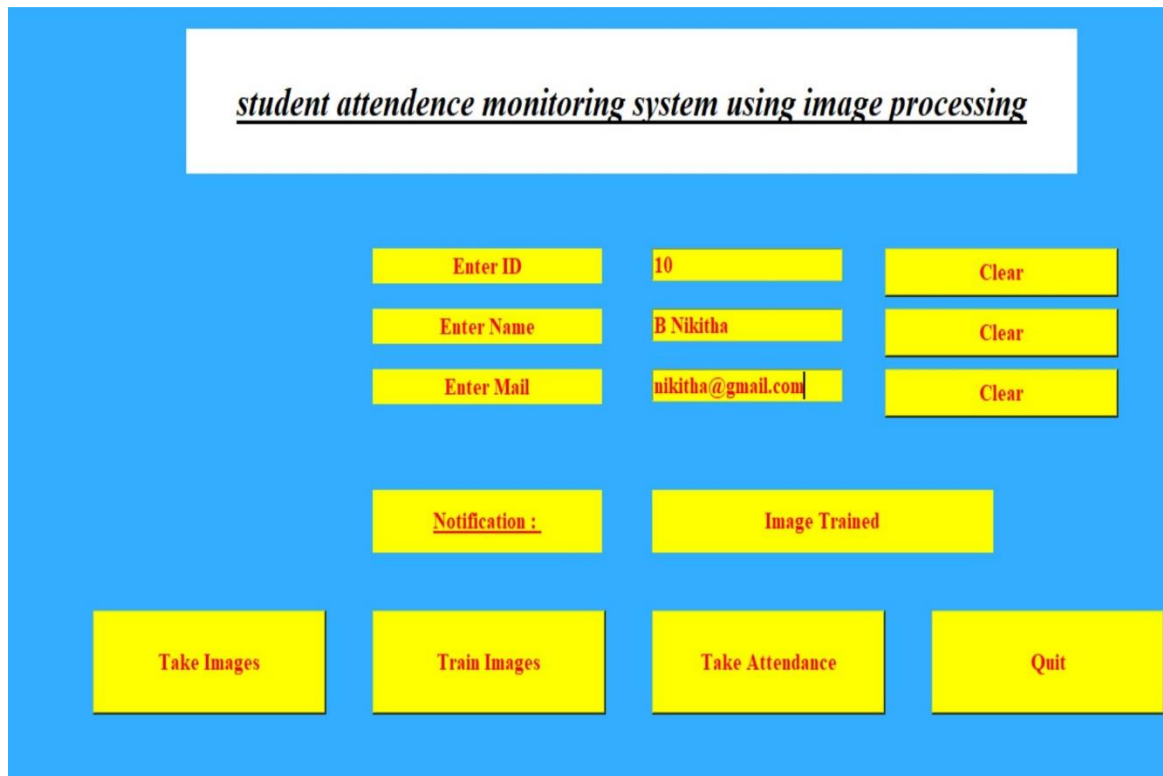
3.PROPOSED SYSTEM

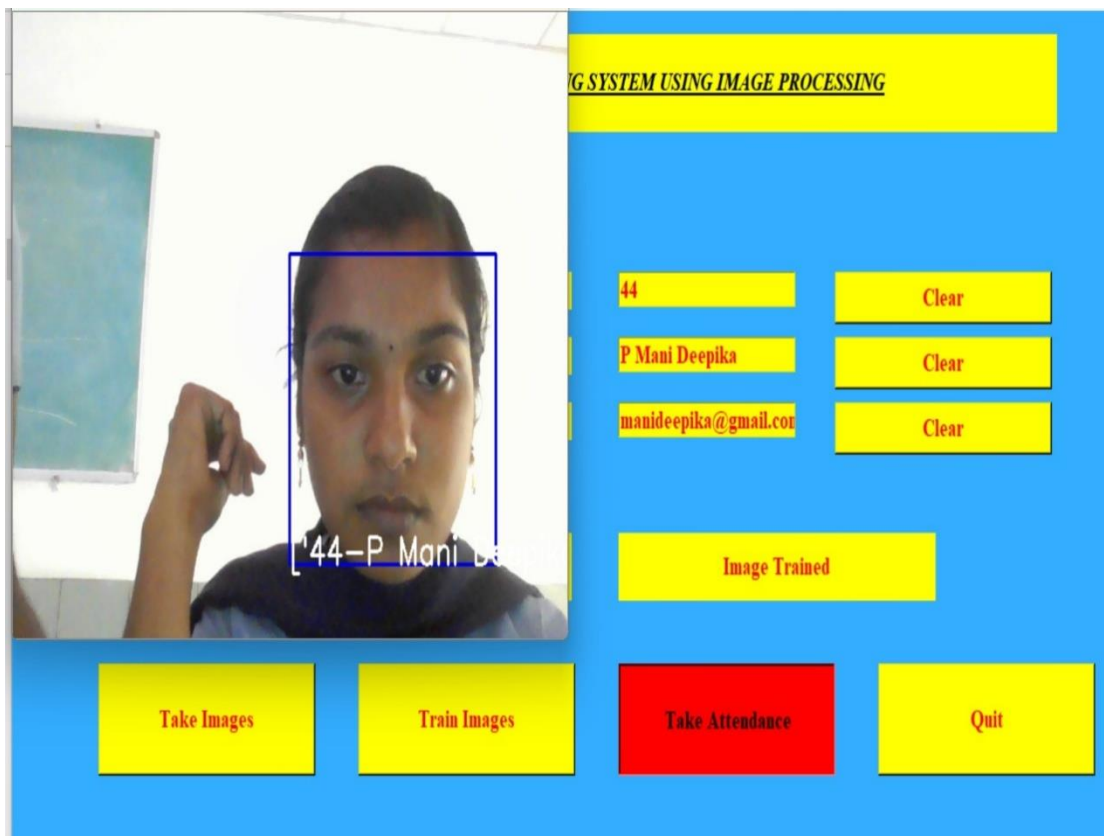
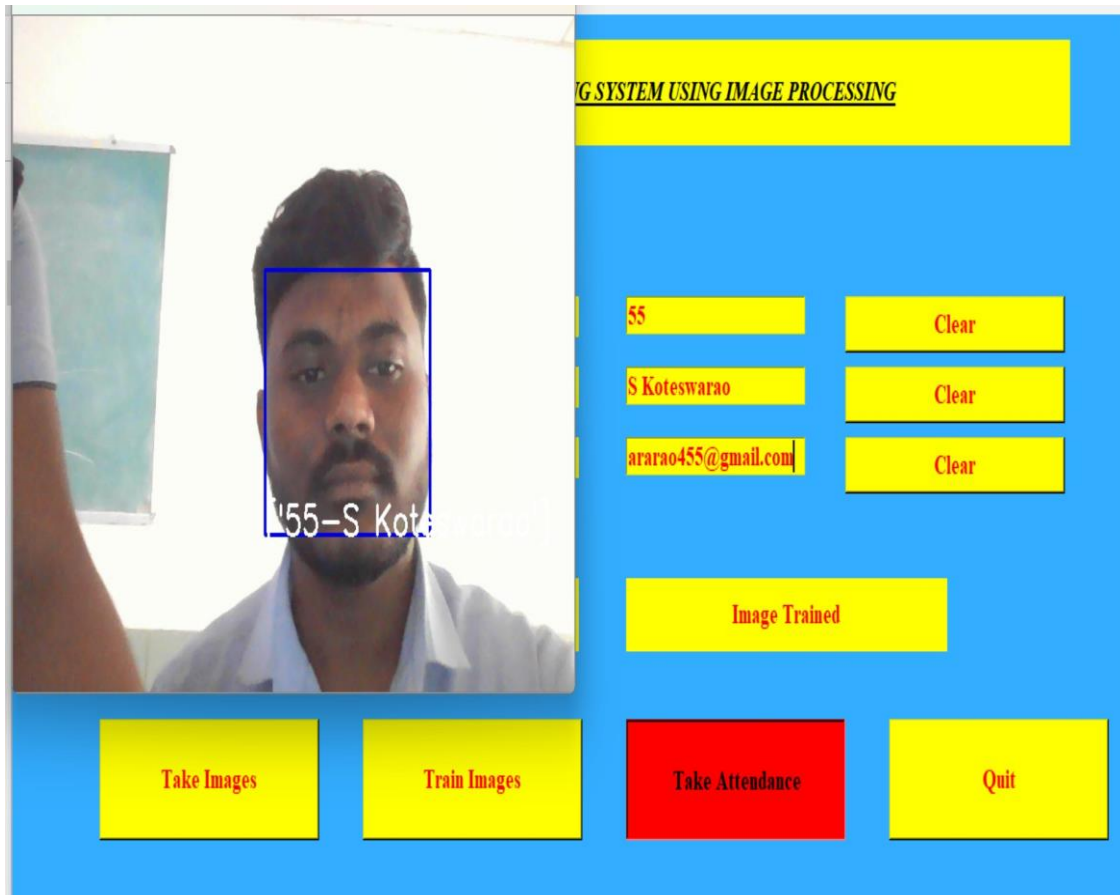
Face is the crucial part of the human body that uniquely identifies a person. Using the face characteristics as biometric, the face recognition system can be implemented. The most demanding task in any organization is attendance marking. In traditional attendance system, the students are called out by the teachers and their presence or absence is marked accordingly. However, these traditional techniques are time consuming and tedious. In this project, the Open CV based face recognition approach has been proposed. This model integrates a camera that captures an input image, an algorithm for detecting face from an input image, encoding and identifying the face, marking the attendance in a spreadsheet .The training database is created by training the system with the faces of the authorized students.

4.RESULTS AND DISCUSSION









5.CONCLUSION

Thus, the aim of this paper is to capture the video of the students, convert it into frames, relate it with the database to ensure their presence or absence, mark attendance to the particular student to maintain the record. The Automated Classroom Attendance System helps in increasing the accuracy and speed ultimately achieve the high-precision real-time attendance to meet the need for automatic classroom evaluation.

REFERENCES

- [1] Smart Attendance System using Computer Vision and Machine Learning Dipti Kumbhar#1 , Prof. Dr. Y. S. Angal*2 # Department of Electronics and Telecommunication, BSIOTR, Wagholi, Pune, India 1 diptikumbhar37@gmail.com , 2 yogeshangal@yahoo.co.in
- [2] ATTENDANCE SYSTEM USING MULTI-FACE RECOGNITION 1P. Visalakshi, 2Sushant Ashish 1Assistant Professor 1,2Department of Computer Science and Engineering SRM Institute of Science and Technology, Chennai, Tamil Nadu, INDIA
- [3] Face Recognition Based Student Attendance System with OpenCV CH. VINOD KUMAR1 , DR. K. RAJA KUMAR2 1 PG Scholar, Dept of CS& SE, Andhra University, Vishakhapatnam, AP, India. 2Assistant Professor, Dept of CS& SE, Andhra University, Vishakhapatnam, AP, India.
- [4] Automatic Attendance System Using Face Recognition. Ashish Choudhary1,Abhishek Tripathi2,Abhishek Bajaj3,Mudit Rathi4 and B.M Nandini5 1,2,3,4,5 Information Science and Engineering, The National Institute of Engineering,
- [5] Face Recognition based Attendance Management System using Machine Learning Anushka Waingankar1, Akash Upadhyay2, Ruchi Shah3, Nevil Pooniwala4, Prashant Kasambe5
- [6] <https://www.superdatascience.com/blogs/opencv-face-recognition>
- [7] <https://towardsdatascience.com/face-recognition-how-lbph-works90ec258c3d6b> [8] <https://www.pyimagesearch.com/2018/09/24/opencv-facerecognition/>
- [9] <http://nxglabs.in/cloud/impact-biometric-attendance-systemeducational-institutes.html>

[10] <https://iopscience.iop.org/article/10.1088/1757-899X/263/4/042095/pdf>

[11] <http://www.ijsrp.org/research-paper-0218/ijsrp-p7433.pdf>

[12] https://www.theseus.fi/bitstream/handle/10024/132808/Delbiaggio_Nicolas.pdf?sequence=1&isAllowed=y