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Hostel Automation Using Face Detection and Voice Interface

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Abstract- When it comes to housing for children's education, questions like safety and quality arise? The child's health is also of greatest concern to parents due to the recent situation. In this proposed hostel automation systems with parents who can log in and check their child's track record. This system removes human errors as well as reduces administrative work. Parents can also interact with the system using voice interfaces. If the child was absent in the hostel, the parents are automatically notified and the student is also alerted if they do not arrive on time. Students can also make suggestions, feedback and raise their grievances through the system so that issues like ragging can also be dealt with. Student attendance is marked by face recognition.

Keywords- Hostel automation, Step wise Leave System Attendance using face detection.

I. INTRODUCTION

Lodging convenience is a fundamental piece of advanced education. 60% of the understudies stay in lodgings for their schooling. When the understudies are given confirmation in the inn, the guardians and the kid lose the dynamic connection between them. We as a whole know the state of the new scourge since this parent is likewise exceptionally worried about the strength of the kid. Ragging in the inn is additionally a genuine matter.

Cell phones are not permitted in certain lodgings, so guardians couldn't actually speak with their youngsters; parental affirmation is likewise significant when an understudy needs to withdraw from the lodging. Understudies might be undermined or scared by an authoritative individual (superintendent or another person). A few understudies may not transparently whine about them and they even don't tell their folks.

II. ATTENDANCE USING FACE DETECTION

The essential capacity of this progression is to close whether the human appearances arise in a given picture, and what is the area of these appearances.

The normal results of this step are patches which contain each face in the information picture. To get a heartier and without any problem designable face acknowledgment framework. Following the face identification step the extraction of human face patches from pictures is finished.

After this progression, the change of face fix is done into vector with fixed arranges or a bunch of milestone focuses. The last advance after the portrayal of faces is to recognize them. For programmed acknowledgment we want to construct a face data set. Different pictures are taken enemy every individual and their highlights are separated and put away in the information base.

III. PROPOSED SYSTEM

The Proposed System "Hostel Automation using Face Detection" will be a web application that will be used for automating hostel attendance and student leave process and to replace old paperwork system. The use of this system in hostel can reduce all the problems discussed in literature survey.

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IV. DIGITALIZED LEAVE PROCESS

The understudy applies for the leave through his login. Parent should endorse this solicitation of leave. The higher specialists, for example, Class organizer and superintendent may acknowledge or dismiss the leave applications mentioned by the understudy in light of the explanation of leave. Assuming the leave is supported the understudy is informed.

Hence, this framework keeps up with the abundance measure of task finished by school to keep up with the leaves. Crises are in many cases the explanation correspondence organization to arrive at weak populaces is made. It likewise assists with keeping up with leave records and likewise track understudies leave subtleties

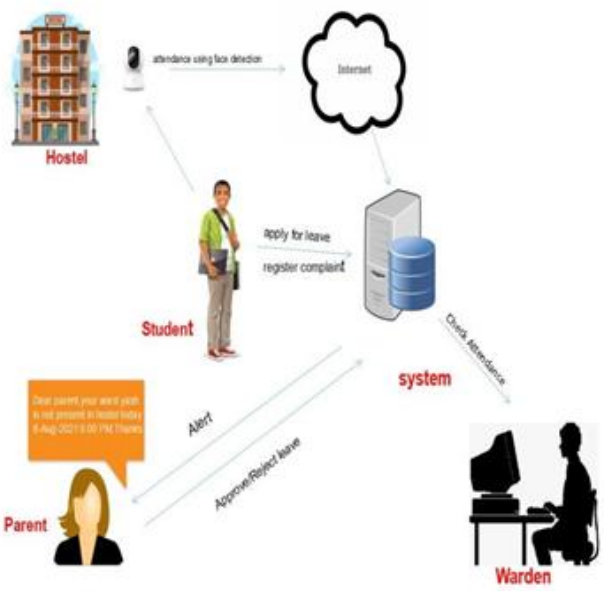

Fig 1. Working Diagram.

V. LITERATURE REVIEW

From the various researches, observed that there are some relevant works which similar to the current proposal whose ideas, works and drawbacks are listed below:

(Samridhi Dev,Tushar Patnaik, 2020) The proposed system makes the use of Haar classifiers, KNN, CNN, SVM, Generative adversarial networks, and Gabor filters. Efficient and robust device for taking attendance in a classroom without any time consumption and manual work. Three algorithms have been used which are K- nearest neighbor, convolutional neural networks, and support vector machine and the method SVM algorithm proved to be less efficient Convolutional neural networks evinced to have low computational complexity

(E.Varadharajan, R.Dharani, S.Jeevitha, B. Kavinmathi, S.Hemalatha, 2018) says the camera is fixed in the classroom and it will capture the image, the faces are detected and then it is recognized with the database and finally the attendance is marked. In this paper they used eigen value method which is the most suitable method. This method is more suitable because of its speed. Hence here we are going to eigen value method to recognize the faces.

Hence the background is subtracted only once in a set of image. For the purpose of accurate face detection we go for background subtraction. Then this is checked for images under different conditions. This method requires only simple hardware for installation. The students who attends a specific lecture, laboratory, section or exam at its specified time duration, thereby saving a lots of effort and time and decreasing interruptions and disruption.

(Muhammad Ayat Hidayat, Holong Marisi Simalango, 2018) In this paper, attendance is still done manually using paper, where the paper will be signed by students later. This student attendance system is done by conducting data collection, system analysis, system design, and system implementation. In this case, the application is using the methods or procedures that exist in the API Usage and the REST API is based on REST architectural style, which is using text-based JSON message over HTTP transport to communicate each other. In this process the student opens the attendance application, after opening, the application will ask the user to activate Bluetooth. After Bluetooth is activated the application will check the existence of IBeacon. IBeacon functions as an identity for each classroom in the lecture building.

(Kaneez Laila Bhatti, Laraib Mughal, Faheem Yar Khuhawar, Sheeraz Ahmed Memon, 2019) The main theme of this system based on face recognition to maintain the attendance record of students. The daily attendance of students is recorded subject wise which is stored already by the administrator. The system automatically starts taking snaps and then applies face detection and recognition technique to the given image and the recognize students are marked as present and their attendance update with

corresponding time and subject id. This Method provides of Deep learning techniques. To develop this system, histogram of oriented gradient method is used to detect faces in images and deep learning method is used to compute and compare feature facial of students to recognize them.

(Pooja G.R, Poornima M, Palakshi S, Bhanu Prakash Varma M, Krishnaa N, 2014) In this paper they proposed an automated attendance management system. This system is based on face detection and recognition

VI. DATASET

A First step in every biometric system is the enrolment of a person using general data like their name and their unique biometric features as templates. A dataset of student is created with their names and unique id. The dataset has trained and stored in newly created folder with their required names. Image is captured from the camera and then student face is detected.

After the face is detected, that face is cropped and then it is enhanced using histogram equalization and noise filtering so that exact features can be extracted. These unique features are then stored in the face database with certain id of that person.

VII. CONCLUSION

Understudy creatures perform face acknowledgment consequently consistently and for all intents and purposes with no work. In spite of the fact that it seems like an extremely basic errand for us, it has shown to be a complicated assignment for a computer, as it has numerous factors that can disable the accuracy of the strategies, for instance: light variety, low goal, and impediment, among other. In face acknowledgment is essentially the errand of perceiving an individual in light of its facial picture.

It has become exceptionally famous over the most recent twenty years, chiefly in view of the new strategies created and the top notch of the ongoing recordings/cameras. Our Proposed framework can be more useful and saves additional opportunity for the educators as opposed to taking understudy participation physically. Subsequently with the assistance of robotized participation framework we had the option to obtain our ideal outcomes and our parcel of useful time is saved. We have likewise excused the probabilities of denoting the intermediaries which happens because of the manual participation framework.

For such a perplexing cycle, we require no particular equipment; just camera and data set servers are required. Utilizing this technique, we can supplant every one of the old strategies. Effective and programmed participation the executives are presented in this research. The administration of participation in this technique is more straightforward and the participation is taken all the more precisely.

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