Smart Mirror for Student Attendance

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Abstract -Right now, standard class participation of understudies' assumes a noteworthy job in execution evaluation and quality checking. The traditional techniques rehearsed in the greater part of the foundations are by calling names or marking on papers, which is exceptionally tedious and uncertain. This task proposes a strategy for building up a thorough implanted class participation framework utilizing facial acknowledgment with shrewd mirror The framework depends on Raspberry Pi that runs Raspbian (Linux) Operating System introduced on miniaturized scale SD card. The Camera, just as a savvy reflect, are associated with the Raspberry Pi. By confronting the camera, the camera will catch the picture at that point pass it to the Raspberry Pi which is modified to deal with the face acknowledgment by actualizing the stance breaking down calculation. In the event that the understudy's info picture matches with the prepared dataset picture, at that point the participation results will be put away in the MySQL database. This undertaking presents the programmed participation the executives framework for accommodation or information unwavering quality. We are facing a daily reality such that everything is mechanized and connected on the web. The web of things, picture preparing, and AI are advancing step by step. Numerous frameworks have been totally changed because of this develop to accomplish progressively exact outcomes. The participation framework is an average case of this progress, beginning from the customary mark on a paper sheet to confront acknowledgment.

Key Words:Face recognition, Attendance, Image processing, smart mirror, data reliability, raspbian, student.

INTRODUCTION

A key factor of improving the quality of education is having students attend classes regularly. Traditionally students are stimulated to attend classes using attendance points which at the end of a semester constitute a part of a student's final grade. However, traditionally this presents additional effort from the teacher, who must make sure to correctly mark attending students, which at the same time wastes a considerable amount of time from that eaching process. Furthermore it can get much more complicated if one has to deal with large groups of students. Maintaining the attendance is very important and compulsory in all the institutes for checking the performance of students. Every institute has its own method in this regard. Some are taking attendance manually using the old paper or file

based approach and some have adopted methods of automatic attendanceusing some biometrictechniques..

- To detect real time human face.
- It is used in Principal Component Analysis.
- To recognize the faces detected.
- The matched face is then used to mark attendance of the Students.
- Used on day to day life.
- Person identification is one of the most crucial building blocks for smart interactions.

We are making a smart system in which students will be introduce to a smart way of attendance, we are overcoming the drawbacks of existing system in which has been proved as the time consuming task.

1. PURPOSE

The purpose is to design software for department database which contains up to date or accurate information of the department [1]. That should improve efficiency and flexibility of department record management and to provide a common and or simple platform for everyone to access the student's information.

1. 1EXISTING SYSTEM

The current participation framework is manual and it is taken on paper and it devours parcel of time. As we mindful that numerous conventional "Participation framework" utilizes participation register to note down the participation. It has less exactness. Likewise the regulatory individual needs to keep up the participation

papers/sheets. In numerous businesses participation register is utilized to note down the participation of their workers. In school participation is accepted on move call assembles and in universities participation is taken by particular teachers. Issue with existing participation framework is that off-base participation can be entered. For instance, in an industry, representative can enter invalid/wrong login logout time. They can come at 10am and can enter time as 8 am. Likewise in universities one understudy can give intermediary participation of another understudy. Likelihood of this is exceptionally less yet it happens.

2. DRAWBACKS OF EXISTING SYSTEM

- **Less User Friendly:** The existing system is not user friendly because the retrieval of day-to-day activities data/records is very slow and records are not maintained efficiently and effectively.

- **Complex for generating the report:** We require more calculations and efforts to generate the report so it is generated at the end of the session. And the student does not get a chance to improve their attendance.

- **Lots of paperwork:** Existing system requires lot of paper work. Lost of even a single paper/register led to complicated situation because all the papers are needed to generate the reports.

- **Lengthy time:** Every work is done manually so we cannot generate report in the middle of the session or as per the requirement because it is very time consuming.

3. PROPOSED SYSTEM

The proposed system will uses two step mechanisms. The first method is to detect the face from the real time environment and followed by the face recognition. The first method is achieved by using Camera which is connected to Raspberry pi. It captures the images of the students, who are present in the class is used for face detection. Then the detected face is compared with the stored data of every student. The student database is collected and stored into the pi at the initial stage.

SYSTEM ARCHITECTURE

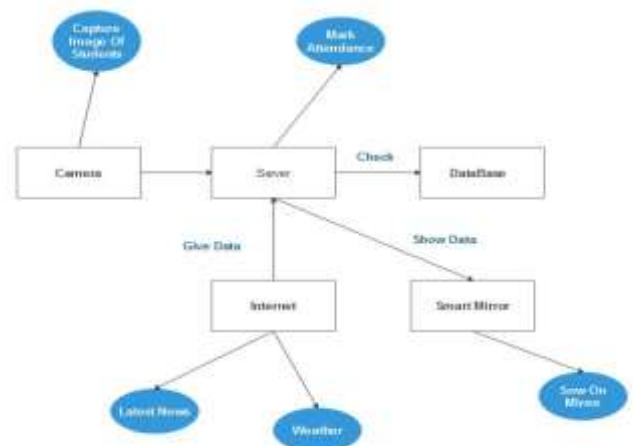**Fig -1**: System Architecture Diagram

ADVANTAGES

1. Innovative.
2. It will be beneficial to track your attendance.
3. Centralised Database.
4. Easy to use.
5. Efficient cost.

APPLICATION:

1. School.
2. Collage.
3. Office.
4. Organizations.

DATA FLOW DIAGRAM

METHODOLOGY

Smart Mirror as a Mirror We can see our view as we can see it in a natural mirror while looking and grooming with the help of one way mirror with high concentration of aluminum content. Smart Mirror AsAInformation System Time, Date, weather details andnews are fetched from online usingpredefined URL. News isfetched from websites.

RASPBERRY PI

The Raspberry PI makes network security cost-effective and easy to implement. Raspberry PI can be used in many forms for better security as it is user friendly and is helping the technology world in many ways.

5. CONCLUSION

Our system is one of the innovating system which not only focus on user daily task but as well as it allow user to give attendance. It's easy to use as we know mirror is part of our day to day life**.**The input image can be converted into a black and white image by applying grey scale filter. Then we have applied fisher faces feature extraction to subtract background. The extracted faces are saved and trained. Then according to the live streaming of video in class gives te attendance to the students. Hence it is overcoming the drawbacks of existing system**.**

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