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A Smart Attendance Capturing Mobile App

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Abstract: ***Keeping track of attendance while engaging students in the classroom may be tough, especially when the class is big. The conventional method of calling pupils' names is tedious and time-consuming, and proxy attendance is always a possibility. To address this problem and maintain track of students' attendance, we presented a smart attendance management system (SAMS) using face recognition, and location.This system replaces the traditional method with a mobile application which eventually reduces the use of pen and paper. The student needs to install the application on the mobile. the application will work as a user interface that can be accessed by Teachers, Students, and admins.Students can view their overall attendance using face recognition and their statistical data is also presented in the application. Each student can be tracked using a unique user ID and the student's presence can be recognized by using GPS coordinates typically longitudes and latitudes.***
Keywords: Smart Attendance, Face Recognization, Gio Location

I. INTRODUCTION

The modern educational environments require building an integrated system for the provisioning of educational resources in all forms, as well as paying attention to the way to access them this is where smart attendance comes in. The goal is not to force the student to attend, but rather to ensure the presence of students and their acquisition of rich knowledge for his/her own good and to build the country. The Saudi Vision 2030 recommends the development of educational systems by applying new technologies. Artificial intelligence (AI) plays its role in enhancing this part to perform the basic daily tasks automatically like health factors etc. and improve well-being. Similarly, it can be utilized for smart attendance by means of facial recognition, iris detection, fingerprints, etc.

II. LITERATURE REVIEW

1) Sharath Kumar R, Yathish S Dhanajaya, Renukaprasad M R, Subramani Gajanan Moger, Smitha Mallya, This paper proposed an idea of recording attendance using face recognition technique and storing the data using IoT. In this method, arduino uno is used as a microcontroller. Cameras are used to detect the face of an individual or group of pupils. Based on the information that is stored prior, the faces are recognized and the attendance is recorded and the database is obtained. This method provides better results in a short span of time but fails to produce the most accurate results. There are some chances of some errors.
2) Aniket Bansal, Satyam Kumar, Ashutosh Pandey, and Kaushal Kishor, This paper proposed an idea of recording attendance using biometrics (fingerprint) for tracking attendance and storing the data using LAN. This paper provides a brief description of the usage, accessibility, accuracy, affordability, and acceptance of the biometric (fingerprint verification) system. In this system, the data is fetched from the individual in the form of a fingerprint and then it is verified with the data that was stored prior and marks the attendance of an individual. Finally, the database is also obtained. This method provides high-accuracy results and consumes less time but it is not cost-effective.
3) Peng-Cheng Huang, Chin-Chen Chang, Yung-Hui Li, Yanjun Liu, The idea of granting access based on QR code detection is proposed. In this method, the QR code will be checked and if it matches the stored data then access is provided for the user, or else the access will be denied. This method is well suitable for residential purposes and provides better safety and security. In this method, the database is not collected and it is less secure than other modern methods.
4) Samuel Lukas, Aditya Rama Mitra, Ririnikana Desanti, and Dion Krisnadi, Here this paper gives an idea of recording attendance using the face recognition technique. Also, this paper provides a detailed description of the results and the analysis obtained from this method. Faces are recognized using cameras and the verification is done. Then the attendance is marked. This method is suitable only for a moderate number of people and the results obtained are nearly 87% accurate. This method fails to recognize people in bulk quantity and causes errors in results.
5) Gurlove Singh, Rohit Dwivedi, Abhineet Anand Galgotias University, Greater Noida, India., In this paper, attendance monitoring and management using QR Code are introduced which is based on sensing with cloud-based processing. This proposed technique solves the problem of deceptive attendance and the trouble of faculties in uploading daily attendance on

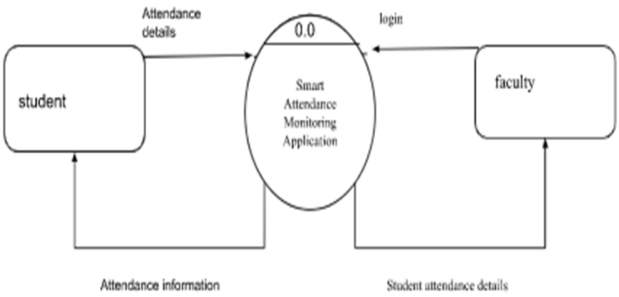
ERP. It can make the users' attendance more easily and more effective without any hassle. The use of this technique gives less accuracy compared to biometrics.

6) Jacksi, Karwan & Ibrahim, Falah & Zebari, Shahab. The system is a Web-based application developed for daily student attendance in departments within the university. It facilitates access to the attendance of a particular student in a particular class. This system will also help in generating reports and evaluating the attendance eligibility of a student. The system is not only improving the work efficiency, students' study and development, but also can save human and material resources.
7) Norakmar Arbain,Noor Firdus Nordisn,S.Saladin., The proposed system aims to manage students' attendance recording and provides the capabilities of tracking student absentee as well, as supporting information services including students' grading marks, daily timetable, lectures time and classroom numbers, and other student-related instructions provided by faculty department staff. Based on the results, the proposed attendance and information system is time-effective and it reduces the documentation efforts as well as, it does not have any power consumption. Besides, students attend RFID-based systems.
8) Mr. Prashik S. Bhagat, Prof. S. Y. Chincholika, This paper proposes an automated attendance management system. This system is based on iris detection and recognition algorithms. It will detect the student automatically when he enters the classroom and attendance is marked by recognizing the student. It can improve the reliability of the attendance records and avoid fraudulent issues that happen when you use a register manually. This system is cost-effective.
9) Vishal Bhalla, Tapodhan Singla, Ankit Gahlot, Vijay Gupta, The instructors in universities and colleges take the attendance manually either by calling out an individual's name or by passing around an attendance sheet for the student's signature to confirm his/her presence. Using these methods is both cumbersome and time-consuming. Therefore a method of taking attendance using the instructor's mobile telephone has been presented in this paper which is paperless, quick, and accurate. Application software installed in the instructor's mobile telephone enables it to query students' mobile telephone via Bluetooth connection and, through the transfer of students' mobile telephones' Media Access Control (MAC) addresses to the instructor's mobile telephone, the presence of the student can be confirmed.
10) J.Chandramohan, R.Nagarajan, M. Ashok Kumar, T.Dineshkumar, G.Kannan, R.Prakash, This paper is a study of a fingerprint recognition system based on minutiae-based fingerprint algorithms used in various techniques. This line of track mainly involves the extraction of minutiae points from the model fingerprint images and fingerprint matching based on the number of minutiae pairings among fingerprints. This paper also provides the design method of fingerprint-based student attendance with help of GSM. This system ignores the requirement for stationary materials and personnel for the keeping of records. The main objective of this paper is to develop an embedded system, which is used for security applications.

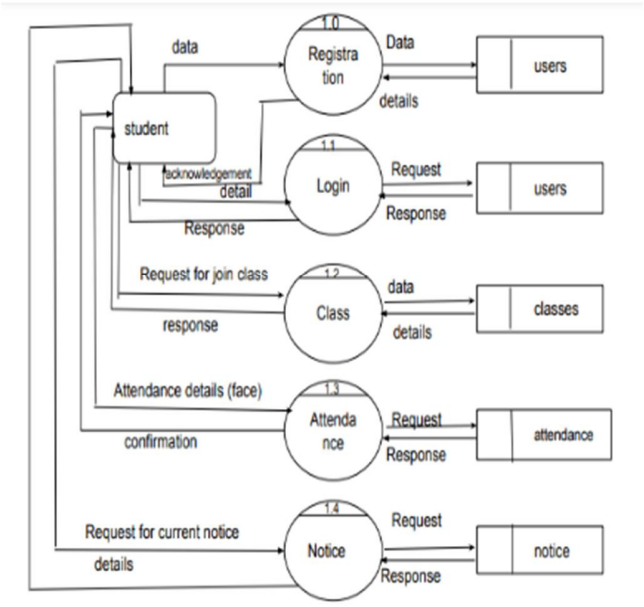
III. METHODOLOGY

In this paper, we implement the Android app, In which we try to make a smart Attendance system. In we proposed the multi-feature like attendance information, notice displaying, joining class, about class details all those things are visible on this App. This app is beneficial for students for school faculty and teacher also. The Traditional method of attendance Required more time and need more paperwork. This Smart Attendance system is fast and paper and it also saved data of previous attendance notices and other class information. That is all found on only one App.

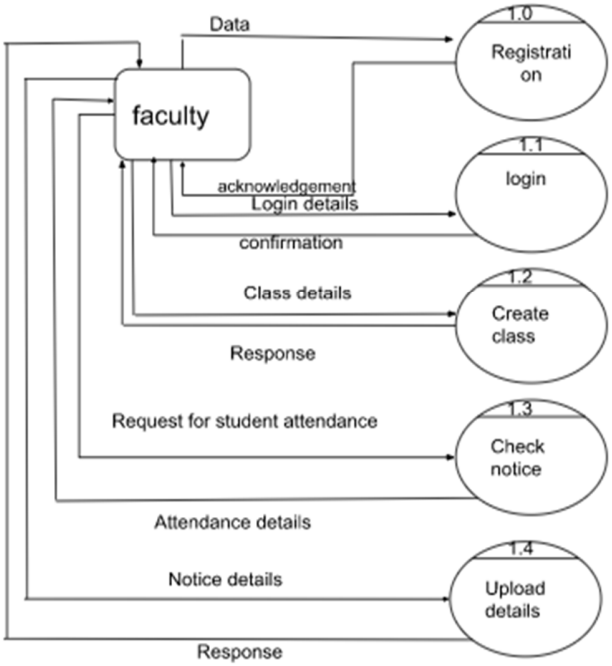
A. DFD -0 LEVEL



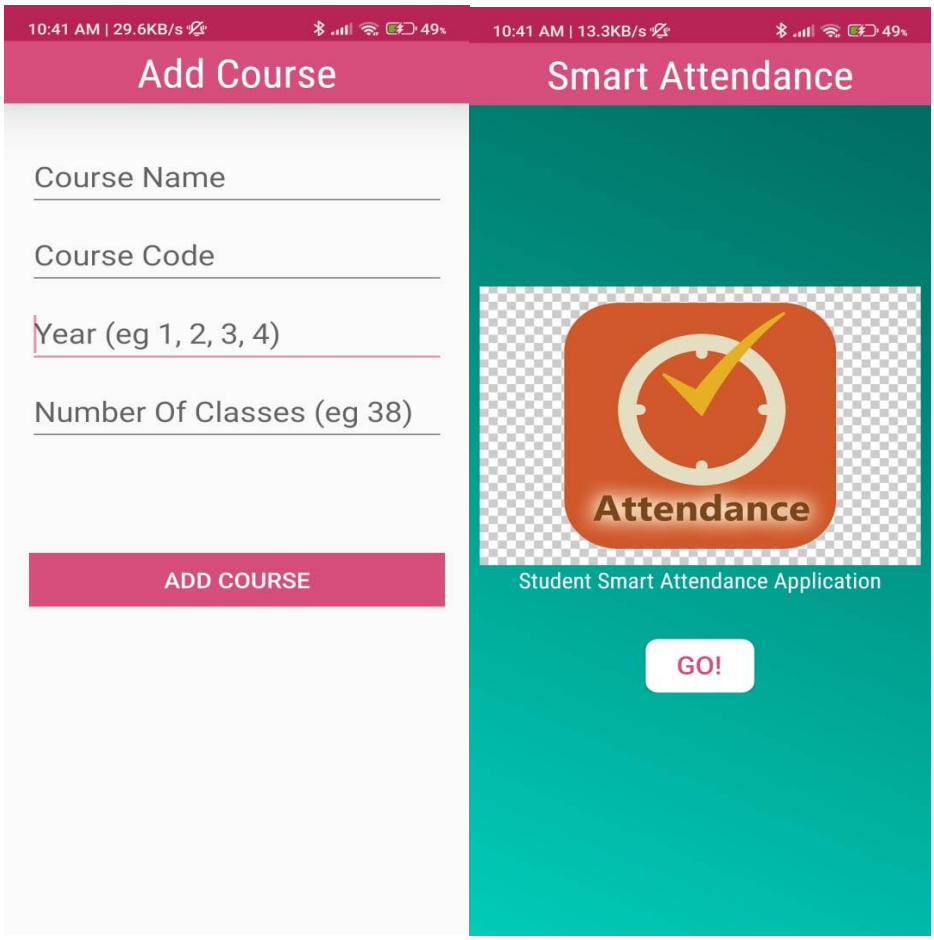
B. DFD-1 Level for Student



C. DFD-1 Level for Faculty



IV. IMPLEMENTATION



V. ADVANTAGES

1) It excludes the use of paperwork and human efforts.
2) The system is helpful as it generates a systematic overall report of every class attendance.
3) The system helps the faculty easily find out defaulters in a single click
4) It maintains the records in a large database instead of the conventional method of maintaining a register which further simplifies the process of searching for a particular record.
5) Users may easily get the attendance history of a particular student.
6) The system introduces a manageable and systematic approach of maintain attendance records.
7) It saves the user time, cost, and institute resources.

VI. CONCLUSION

A smart attendance management system is designed to solve the issues of existing manual systems. We have used face recognition and the Gio Location concept to mark the attendance of students and make the system better. The feature of the app Student needs to install the application on their mobile. application will work as a user interface that can be accessed by Teachers, Students, and Admin. The smart Attendance System helps in increasing the accuracy and speed ultimately to achieve high-precision real-time attendance and its evaluation process. In the future, we are intended to investigate more machine learning and deep learning-based system in contrast to cloud computing for sake of smart attendance with added security solutions.

REFERENCES

[1] Sharath Kumar R, Yathish S Dhanajaya, Renukaprasad M R, Subramani Gajanan Moger, Smitha Mallya "IOT Based Cloud Integrated Smart Classroom and Sustainable Campus" Vol. 8, Issue 5; ISSN (Online) 2393-8021; ISSN (Print) 2394-1588;May2021.https://iarjset.com/papers/iot-based-cloud-integrated-smart-classroom-and-sustainable campuss.

[2] Aniket Bansal, Satyam Kumar, Ashutosh Pandey, Kaushal Kishor "Attendance Management System through Fingerprint" ISSN: 2321-9653; Volume 6 Issue IV; IC Value, April 2020.https://www.researchgate.net/publication/325268867_Attendance_Management_System_through_Fingerprint

[3] Peng-Cheng Huagn, Chin-Chen Chang, Yung-Hui Li, Yanjun Liu "Efficient access control system based on aesthetic QR code" DOI:10.1007/s00779-017-1089-y; February 2020https://www.researchgate.net/publication/320846430_Efficient_access_control_system_based_on_aesthetic_Q R_code

[4] Samuel Lukas, Aditya Rama Mitra, Ririnikana Desanti, Dion Krisnadi, (2021). "Student attendance system in the classroom using face recognition technique" 2016 International Conference on Information and Communication Technology Convergence(ICTC) doi:10.1109/ictc.2016.7763360.https://ieeexplore.ieee.org/document/7763360

[5] Gurlove Singh, Rohit Dwivedi, Abhineet Anand Galgotias University, Greater Noida, India. "Attendance monitoring and management using QR code based sensing with cloud based Processing" Volume 8, Issue 5 (September 2019) Peng-Cheng Huang 1,2 & Chin-Chen Chang 2 & Yung-Hui Li 3 & Yanjun Liu Peng-Cheng Huang 1,2 & Chinhen Chang 2 & Yung-Hui Li 3 & Yanjun Liu

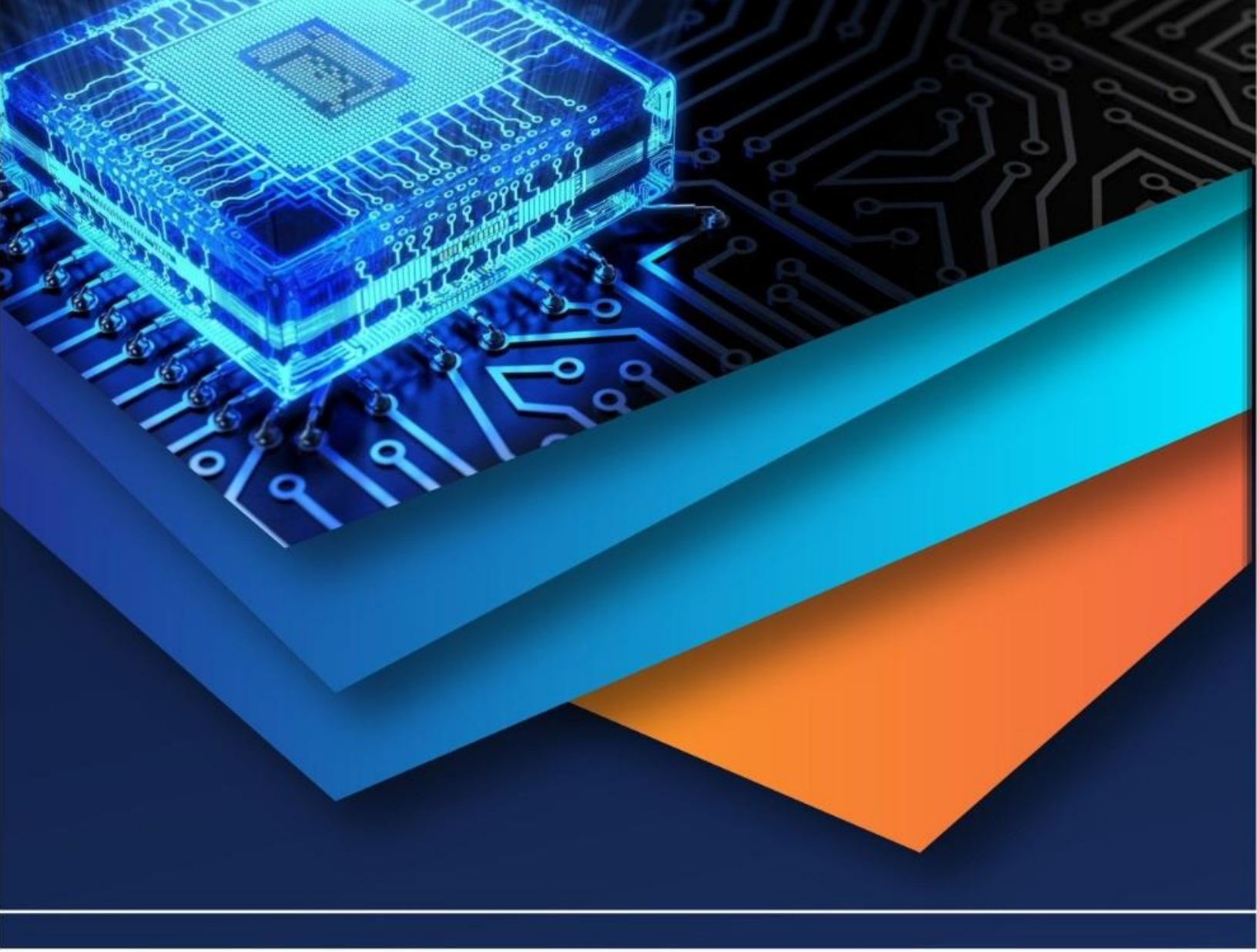
[6] Jacksi, Karwan & Ibrahim, Falah & Zebari, Shahab. (2020). "Student Attendance Management System". International Journal of Engineering and Technology. 6. 49-53. 10.21276/sjet.2018.6.2.1.

[7] Norakmar Arbain,Noor Firdus Nordisn,S.Saaidin.(2021)."Web-based laboratory attendance system by integrating RFID-ARDUINO technology". https://doi.org/10.1109/ICEESE.2021.7154601

[8] Mr. Prashik S. Bhagat, Prof. S. Y. Chincholikar, Electronics & Telecommunication, Shreeyash College of Engineering & Technology, Dr. BAMU University Aurangabad, Maharashtra, India. "Biometric Attendance System using Iris Recognition".

[9] Vishal Bhalla, Tapodhan Singla, Ankit Gahlot, Vijay Gupta, Department of Computer Science And Engineering Dronacharya College of Engineering, Gurgaon, Haryana, India. " Bluetooth Based Attendance Management System".

[10] J.Chandramohan, R. Nagarajan, M. Ashok Kumar, T.Dineshkumar, G. Kannan, R. Prakash. "Attendance Monitoring System of Students Based on Biometric and GPS Tracking System". https://doi.org/10.24001/IJAEMS.3.3.16



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