

Android based Attendance Management using QR Code

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Abstract: *Until today, most of the lectures in universities are found still using the conventional methods of taking student's attendance either by calling out the student names or by passing around an attendance sheet for students to sign conforming their presence. In addition to the time-consuming issue, such method is also at high risk of having students cheating about their attendance, especially in a large classroom. Therefore, a method of taking attendance by employing an application running the Android platform is proposed in this paper. This application once installed can be used to download the students list from a designated web server. Based on the downloaded list of students, the device will then act like a scanner to scan each of the students card one by one to confirm and verify the student's presence. The device camera will act as a sensor that will read the QR code printed on the student's card. The updated attendance list is then uploaded to an online database and can also be saved as a file to be transferred to a PC later on.*

Keywords: QR Code

I. INTRODUCTION

In most educational institutions, participation of students in learning process is regarded as a vital exercise for allowing knowledge transfer. This signifies the importance of having students to attend the scheduled lectures and classes. Conventional methods for recording students' attendance are still adopted by most colleges. One common method is by having students to manually sign the attendance sheet, which is typically passed around the classroom while a lecturer is giving the lecture. This approach could undoubtedly allow the students to cheat about their attendance, where a student may sign for an absent student. Besides, such attendance sheet could easily be misplaced or lost.

A stricter approach especially to prevent students cheating about their attendance is additionally tedious, where a lecturer calls out the individual names from the students list and validate the presence of every single student. Such manual methods of taking students attendance have been proven to be difficult and time consuming. Thus, there is a need for a semi-automated system that would eliminate all of these troubles.

Therefore, the is our objectives to develop a portable attendance system equipped with an online database, especially to prevent data loss as well as to promote paperless and a greener environment. Besides that, the application will help to reduce time being wasted, leading to a higher learning productivity in class. There are a few paperless attendance systems that have been developed but such systems need to be equipped with either a computer or RFID reader, resulting in additional cost for hardware and its maintenance. With that in mind, the aim is to address this issue by having a system with minimal hardware requirement and at the same time, enhancing the mobility aspect of the existing attendance system.

II. LITERATURE SURVEY

[1] In this paper - An RFID based system is developed to record students' attendance during class hour as the students enter the class. This system requires each classroom to be installed with an RFID reader that is connected to a computer. The RFID reader will be used to capture the student information through the student's card. To view the overall student attendance, the lecturer may later connect their phone via Bluetooth to the computer.

[2] In this paper –Another project is also using RFID technology. However, this system requires an RFID reader to be mounted at the central of each classroom. The mounted RFID reader will track all RFID tags in the classroom at once and an object counter will update the number of students in the classroom based on the successfully traced tags. It has a limitation which is the additional hardware cost to install the RFID devices. Even though RFID devices have become cheaper over the time, one whole RFID system does not just include readers and tags. Computer, cables, network or even a server might be needed in order to setup the whole infrastructure. The cost to setup the system from scratch can easily outweigh the cost of the RFID devices used in the system.

[3] In this paper – The system promotes fingerprint-based students' attendance recording system with GSM utilization. By using this system, each student attendance is validated once the student's fingerprint is verified by the reader. In addition to the strict attendance verification and recording, the system will send weekly attendance report to the students' guardians via GSM.

[4] In this paper – The biometric-based system, presents a remote iris acknowledgment attendance administration system, which is planned and actualized using the Daugman's calculation. This system utilizes the iris acknowledgment for confirmation and RF wireless techniques, especially for employee identification. Both of these systems are utilizing biometrics qualities which make them great system.

[5] In this paper – Student attendance application prototype using Android-based flutter. It is an application whose purpose is used in student attendance system activities by preventing cheating. This application is equipped with a validation feature using a QR code and geolocation to overcome student cheating during attendance activities. This application development uses a flutter software development kit. As a result of the development of this application, it can be used to simulate attendance activities in a class attended by 10 students and it takes 5 minutes 58 seconds. The application also gets a mean opinion score measurement of 81.08.

[6] In this paper – It aims to propose an Android based course attendance system using face recognition. To ensure the student attend in the course, QR code contained the course information was generated and displayed at the print of the classroom. The student only needed to capture his/her face image and displayed QR code using his/her smartphone. The image was then sent to server for attendance process. The experimental result shows that the proposed attendance system achieved face recognition accuracy of 97.29 by using linear discriminant analysis and only needed 0.000096s to recognize a face image in the server

[7] In this paper – This paper proposes a system that is based on a QR code, which is being displayed for students during or at the beginning of each lecture. The students will need to scan the code in order to confirm their attendance. This paper explains the high-level implementation details of the proposed system. It also discusses how the system verifies student identity to eliminate false registration

III. METHODOLOGY

In existing method: It consists of physical register where the supervisor manually inputs the attendance record of all students. Other technologies which have been developed to replace this manual system includes fingerprint, retina scan, voice recognition etc. The problem with the existing system is that the manual system is time consuming and the advanced technologies are too expensive to be implemented on a large scale in any organization.

In proposed method: Regarding the above literature research and taking in to consideration its drawbacks and limitations, we proposed the "Mobile Phone Based Attendance System in android". In this proposed system we are going to develop an android application which will eliminate all the drawbacks of the existing system.

Scope: This Android attendance management system keeps the track of daily attendance. It prevents staff's time theft.

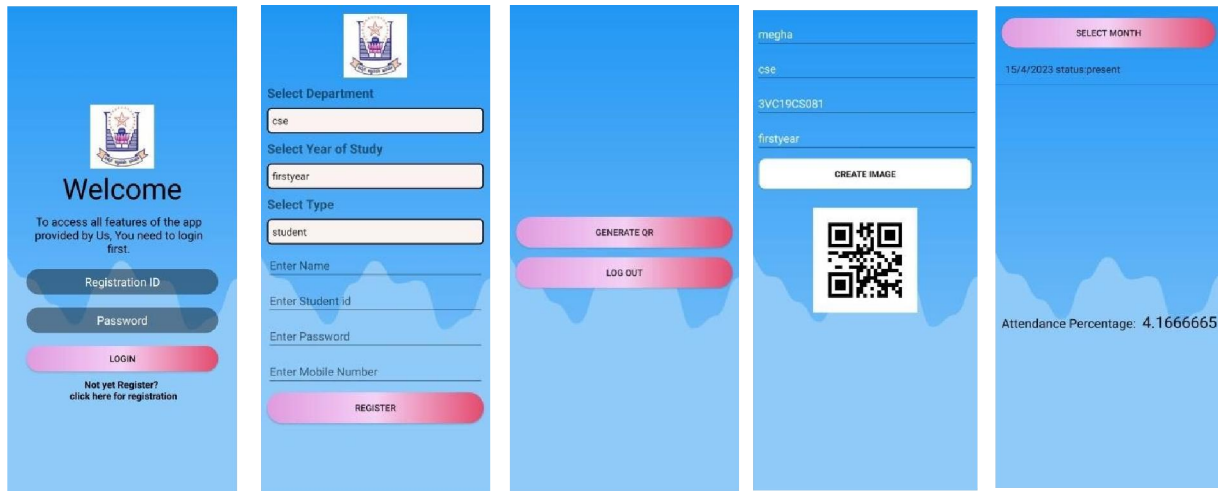


Fig 1-Login Page Fig 2- Registration Fig 3- Generate QR page Fig 4- QR Picture Fig 5- Obtained %

IV. CONCLUSION

This whole work is to access the details about the student attendance information and generate final reports. This project “Android attendance management system” is a collection of static and dynamic web based or mobile application-based pages. This project provides an offer to the user to enter the data through their respective registration forms. It is very helpful for the teachers and admin to keep and maintain the information about the students easily.

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