QR Based Attendance Monitoring Application: A Review

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Abstract— In this world of modern technology smartphones plays a most important role in our life. Nowadays smartphones can solve our most of the problems very quickly and easily. Smartphones are becoming more preferred companies to users than desktops or notebooks. It has made every person's life easier with different social apps, commercial apps, problem solving apps, apps for education and marketing etc. The paper, followed by technology, contrasted a system that would handle a problem to record attendance. Mobile attendance systems are used to reduce the time and effort it takes to attend colleges. Our Research focuses on building a mobile presence system using Android Studio and databases to avoid and prevent a lot of paperwork data loss. The proposed project is a couple of two applications, one for generating the QR Code by providing the student details and make their account in the system and generate their unique QR code for every student and second app for taking attendance and generating the attendance in CSV or XLS sheets. Using the smartphone to speed up the process of attending attendance by university instructors will save lecture time and therefore enhance the educational process. This paper proposes a system that is based on a QR code, which is displayed to students at or at the beginning of each lecture. Students will need to scan the code to confirm their attendance. The paper clarifies the general usage subtleties of the proposed paper. It likewise examines how the paper confirms understudy personality to take out bogus enrollments. The attendance will be marked as 0 and 1, 0 for absent and 1 for present in the database of the particular student row in the table.

Keywords: QR Code, Attendance Monitoring Application

I. INTRODUCTION

The project could be a simple android application that takes down student's attendance using QR code. This can be a stimulating concept set forth to automate the normal attendance system by using the authentication technique. The standard system requires a register maintained for manually marking attendance for the scholars which is time-consuming. Hence this proposed paper eliminates the necessity of maintaining an attendance sheet. This application time consuming. Hence this proposed project eliminates the necessity of maintaining an attendance sheet. This application is given an Email that contains the QR code. Students just need to scan their QR code reader and also the app notes down their attendance as per dates.

The system then stores all the student's attendance records and generates a defaulter list and reports for admin. Such quite application is extremely useful at school in addition as in college for taking daily attendance. The student's attendance tracking may be a vital issue to assess student's performance within the classroom. The normal way of attendance using paper and pen is, recording manually so converting into a smartphone application. Therefore, managing the attendance using the traditional approach is absolutely a cumbersome process. Within the previously used various forms of attendance systems that are developed, using punch cards, logbooks, fingerprint systems, barcodes, QR codes, and also RFID still because many problems like providing propaganda to the end-user.

Managing the attendance using mobile phones provide easy and interactive access to the attendance records of the student. It helps in reducing the wastage of paper and consumes not only less energy. Mobile being portable can help instructors or other users to require attendance on their mobiles and look at the varied statistics to investigate the attendance record of the scholar. This way, the system will save not only time but also efforts that were alleged to be put by instructors during each lecture. It'll speed up the method of taking attendance and leave much time for the lecture to incline properly. They're connected to emerging character behaviors like initiative, respect, integrity, and responsibility. Many established studies have shown that student attendance during lectures has positive correlations with their academic performances Students determine commitment, initiative, respect, and responsibility once they are at school and on time, to the slightest degree times.

The less class time students miss or absent, the more likely they're going to act academically. During this project, the proposed attendance system is developed by scanning the QR code employing a smartphone rear camera. The proposed system is also takes care of preventing from the unauthorized attendance registration using multi-factor authentication. That is, it considers "Something you know"," Something you have", and "Something you are" to substantiate the scholar's identity.

II. RELATED BACKGROUND STUDY

It may present different methods of attendance system applications being used in different situations such as schools and higher institutions. The most notable change in most educational landscapes today is the capitalization of technology in managing student attendance. Another study in which the presence of a student attending a class was confirmed was developed using a mobile phone via a Bluetooth connection. This will further the student's existence through transferring the student's media access control (MAC) address to the instructor's mobile phone.

A. Problem Statement:

− There may exist different methods of presented applications being utilized in different circumstances, for example, in schools and higher establishments of adapting yet at the same time motivation number of problem.

− Improvement of a smart QR code based attendance system framework disposes of the need of keeping up participation sheet.

- This attendance system is Web based; it is fully responsive where a user can use in mobile, tablets and different computer systems.
- In this system records are kept safe and secure and the attendance information of particular or all students of particular class can be accessed easily by admin.

B. *Feasibility:*

- Economic practicality: The created system is time powerful in light of the fact that participation is checked consequently. It is likewise practical in light of no utilization of administrative work.
- Technical plausibility: The system is monetary and it doesn't utilize some other extra Equipment and programming.
- Behavioral practicality: The system is easy to understand.

C. *Characteristic of Proposed Framework:*

- User Neighborly
- Reports are effectively produced
- Very less administrative work
- One spot answer for participation figuring

D. *Methodology:*

To accomplish the above examined destinations, a bit by bit philosophy has been followed. The subtleties of system are given underneath:
- Develop a QR code generator android application utilizing the subtleties of understudy, for example, move number, student id.
- Develop an Android application that take the participation regarding the particular subject and produce the understudy participation sheet according to participation subtleties.

E. *Advantages of Automated Attendance System:*

- Provide better security.
- Maintenance of the system is easy and cost effective.
- Generate the outcome rapidly.
- Provide correct and selected particular data.
- User friendly.

III. RESEARCH APPROACH

Santhiya M et al, Dept. of Comput. Engg., Rajalakshmi Engineering College, Thandalam, Chennia, "QR Code Scanner Based Student Analysis System", Vol.9 Issue.3rd March 2020, 182 – 188. The student forms the core of any institution that concerns him. But the student has a hard time keeping details. If they want to get the details of a particular data, they have to look at several files. To overcome that problem the student database has been combined with the web page and can be accessed with the help of QR code. It helps that only a particular student can access their educational details and no other person can access it without their knowledge and this creates security for the student data-base. Students can give their online feedback instead of login with username and password. The fee details and the due of the student can also be verified using this system. The student can verify how many lectures they participated in and it helps

to give attendance during lectures which avoids the proxy. All personal details of students can be obtained with just one click.

Gaurav Ravindra et al, Dept of Computer Engg., Rajendra Mane College of Engg, Maharashtra, "QR Code Based Effective Employee Maintenance System", Vol: 03 Issue: 04, Apr-2016 170 – 174. The rapid development of Android applications greatly impacts our lives. The aim of this DzQR (Quick Response) code based effective employee maintenance system is to automate the employee monitoring process in company. This application improves the organizational growth of the company. The system consists of two parts, in the first part, the employee scans his QR based identity card and the critical system enables some services such as car parking slot allocation, canteen services extra. In second part of this system employee scan his same unique QR code based identity card then attendance of employee will be marked in administrator database and start his personal computer with help of wake on LAN(WOL) format. Employee profile can be maintained in mobile application. The objective of this system is to save time and work optimally. This helps the employee to concentrate only on their duties. Also, it helps the company or organization to grow its business.
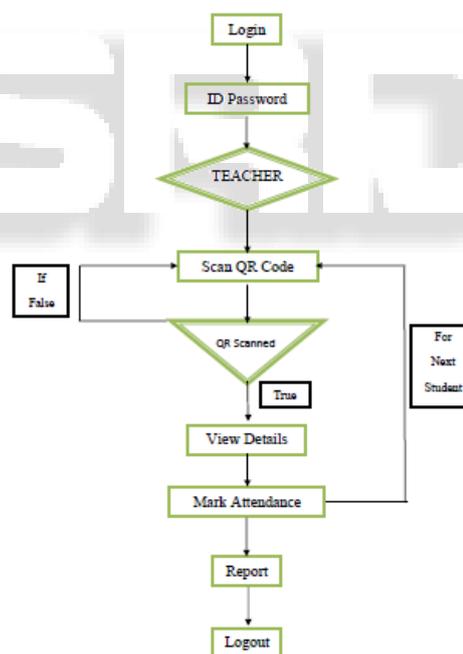
IV. SYSTEM DESIGN

Fig. 1: Overall flowchart of system

This flow chart shows that when we enter in the system first we have to login in the system by giving id password. Then system scan the unique QR code of student. If the QR is valid the show the details of student and mark attendance and go to scanner for next scanning. If false the will denied the code and move for next code scanning. This is a simple technique to take attendance. After the completion the all student attendance the system will generate a report on the basis of attendance. After all the process we can logout easily. After this process of there are also some steps for processing this system to perform as a best working application.

- Scanning process:- the process that we can take entry to scanning process and attendance process. Here when we login in the system a code scanner will open in which the code of student will scanned and marl the attendance of the student if the code of student is valid if the not the system will denied the code and move for next QR code scanning.
- Registration process:- the registration process of the system where after the login process the admin will the information of the student like name, phone number, college id and etc. then the system will take this data and save it in a database and generate a special unique QR code. After the completion of the filling student details. The process will logout.
- Report generation process:- the report generation is represented that the process of report showing of the students. Here the system will generate the report of daily attendance, weekly attendance and monthly attendance and shows the average of the attendance of particular student. After all the complete of month the system will shows the best of three student who has highest attendance of students. After the completion of process the user will easily logout from the system.

V. CONCLUSION

"QR Based Attendance Monitoring Application" is a combination of two android applications developed for use to take the attendance and store the data of the students for daily attendance in the college. In this the lecturer how is taking their lecture regularly. Then this lecturer is responsible to mark the attendance of the students of their particular subject which is allotted as time table. Each staff will get an Android application that is used to take attendance and generate overall presence conditions. This is an accurate report based on attendance. Attendance reports on a weekly and monthly basis have been sought as desired. The main purpose of the automated attendance system is to computerize the traditional method of recording attendance and to provide an efficient and automated method for tracking regular attendance of the students.

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