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Smart Attendance System using QR Code

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Abstract: *In this era of technology smartphones play a significant role in our day-to-day life. Nowadays smartphones solve most of the problems very quickly and easily. It has made life of every person simple and easier with different social app, commercial app, problem solving apps, app for education and marketing etc. Followed by the technology the paper purposed a system is a couple of two applications, one for generating the QR code by entering the student details and for second application for taking the attendance and generating the attendance in XLS format. The student will need to upload the QR code of the particular student in order to confirm their attendance. The paper discusses how the system verifies student identity to eliminate the false registrations. The system deals with the management and evaluation of attendance of all students. The student QR code will be provided to student through email. The student attendance reports will be generated in XLS sheet for further use.*

Keywords: QR, attendance, system, staff, student

I. INTRODUCTION

Among the various types of attendance systems that have been developed, using punch cards, log books, fingerprint systems, barcodes, QR codes and also RFID still cause lots of problems such as providing incorrect information to users. The purpose of the smartphone-based attendance system is to computerize the traditional way of recording attendance and provide an easiest and smart way to track attendance in institutions nowadays, the most common device that have been come into account in marketing and business are smartphone devices. Moreover, it comprises lots of them running Android OS.

II. OBJECTIVE

"Smart Attendance System Using QR Code" is a combination of two web applications developed for taking and storing the attendance of the student on daily basis in the college. Here the Staff who id handling the subjects will be responsible to mark the attendance of student. Each staff will be given an android application that is used for taking the attendance and generate the overall attendance on weekly and monthly basis is generated as desired. The main objective of automated attendance system is to computerize the traditional way of recording attendance and provide an efficient and automated method to track attendance in institutions. There are many advantages of QR Code Based Smart Attendance System.

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III. SOFTWARE

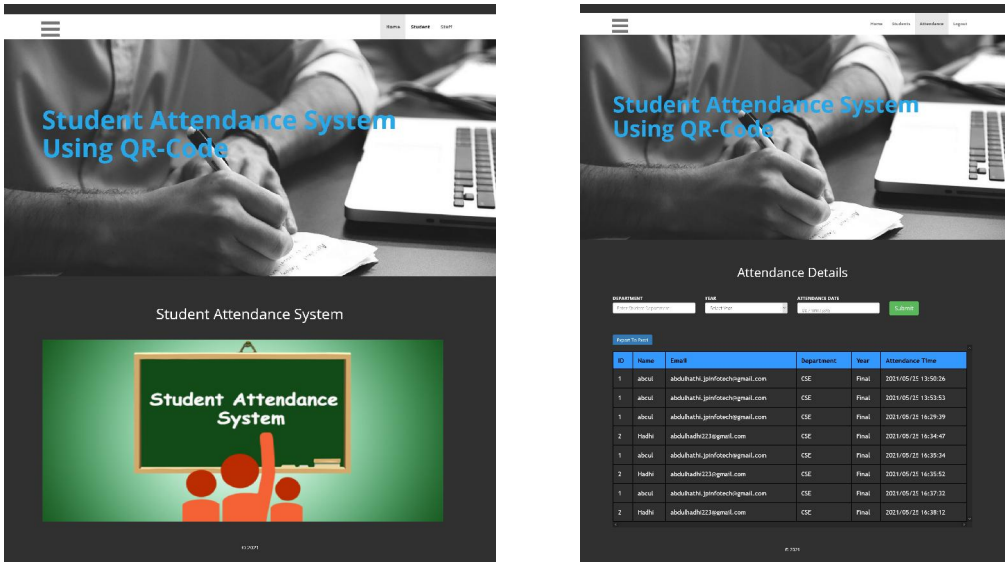

Figure: Working Software

IV. FUTURE SCOPE

Our future work will focus on providing missed class topics and notes available to students. Full control to professor with more secured and enhanced options. Finally, we conclude, if we integrate this attendance monitoring system with biometric identification tool then system will solve the real-world attendance problem.

V. RESULT AND CONCLUSION

5.1 Experimental Setup

Objective:

Develop and evaluate a QR code-based student attendance system using Java.

Experimental Variables:

Independent Variable: QR code scanning and recognition algorithm

Dependent Variable: Accuracy and efficiency of the attendance system.

Experimental Data:

In this experiment, synthetic data will be used to simulate student attendance scenarios. Synthetic student record will be created with unique identifiers linked to corresponding QR code.

Data Analysis:

Process the collected attendance data to calculate attendance percentage for each student. Generate attendance reports or visualizations to present the analyzed data. Evaluate the accuracy and efficiency of the attendance system by comparing the recorded attendance with the expected attendance.

Experimental Validation:

Compare the performance of the QR code-based attendance system with existing manual systems or alternative automated system. Assess the accuracy and efficiency of the system by analyzing the collected data and comparing it with the expected attendance.

Limitation:

Variation in lighting condition during QR code scanning may affect the system's performance. Hardware compatibility issues with smartphones or scanners may arise, impacting the reliability of attendance recording. Constraints due to the size or diversity of the synthetic data used may limit the generalizability of the results.

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5.2 Instructions for Operating the System:

System Requirements:

Computer (JDK Installed)

Database Setup (if applicable):

1. Install and configure the database management system (e.g., MySQL) on your machine.
2. Create a new database for the attendance system.
3. Updated the database connection setting in the project configuration files if necessary.

Launching the System:

1. Build the project to generate the executable files.
2. Run the application by executing the main program file (e.g., AttendanceSystem.java)
3. Wait for the system to initialize and display the home screen.

Student Registration:

1. If you are a first-time user, click on the "Register" button on the login screen.
2. Fill in the required registration details, such as Email, password , and personal information.
3. Submit the registration from to create a new user account in the system.

Student Login:

1. On the login screen, enter your registered email and password.
2. Click the "Login" button to verify QR code.
3. Click on "Select file" to upload QR code.
4. If QR get matched with database access the main dashboard.

Staff Login:

1. Click on "Staff".
2. On the login screen, enter your registered email and password.
3. Staff can access the student and their attendance record.

Attendance Recording:

1. Distribute the generated QR codes to the students by the mail.
2. Instruct the students to present their QR codes to the smartphones.
3. Open the attendance recording section in the system.
4. The system will automatically record the attendance once the QR code is successfully uploaded

Viewing Attendance Reports:

1. Access the "Attendance Reports" section in the main dashboard'
2. Choose the date or session to filter the reports if needed.
3. Click the "export to excel" button to view the attendance report in XLS, which displays the student data and their attendance.

Logging Out:

1. To log out the system, click the "Logout" button or close the application window.

VI. CONCLUSION

The developing system presented in this paper has been successfully analyzed. The student's attendance status will be analyzed and export. Attendance monitoring system is very important in our daily life. It is possessing a really great advantages, among the whole types of code is the most accurate. In this project report, we have given n introduction of

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Attendance monitoring system and its advantages. It is an effective method to store the attendance in the smart phone rather than wasting the paper.

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