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### A NEW APPROACH FOR GENERATING CLOUD MONITORS FROM MODELS TO SECURE CLOUDS

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### ABSTRACT

Academic performance at higher education institutions is directly correlated with student participation in the classroom. Nonetheless, most student attendance registration is still completed in the traditional manner, which takes a lot of time and is laborious, particularly for classes with a big enrollment. The majority of universities have managed attendance manually over the years. The purpose of this paper is to track and record student attendance in lectures and exercises for all relevant courses by proposing and implementing a smart attendance system to address the problems with manual attendance. Additionally, we hope to encourage the potential use of the Quick Response (QR) code as a future attendance management system.

Keywords – QR Code, attendance, system, professor, student.

# **INTRODUCTION**

These days, it's crucial to complete tasks quickly, pick up new skills, and achieve better outcomes with as little difficulty and efficiency as possible. All sectors, but particularly those in the business and education sectors, require management systems in order to have sufficient control and administration over the advancement of work or learning. In light of all these advantages, we believed that an online system to track student attendance was especially necessary for the university's educational process.

Among others, regular attendance is a basic and most important criterion throughout the education system. Consequently, the student might lose the right to sit an exam if attendance criterion is not met. Moreover, if students exceed the number of allowed absences, they might also lose the right to sit final exams. Given that, the manual method which is currently used, give space for more calculation errors. We proposed and developed a better web-based system to help overcome such issues. It is fully responsive to mobile phones, tablets and various computer systems users. The proposed model provides data security and whole class or individual student attendance data can be accessed quickly and easily, moreover, the report is automatically generated by the professor. The purpose of the internet -based attendance system is to computerize the traditional way of registering attendance and to provide an easier and smarter way to track institutions attendance nowadays, based on a unique code for each professor and student known as QR code. At the beginning of each course, to confirm their attendance, users (professors and students) are required to scan their unique QR code assigned to them during or at the beginning of each lecture, using QR reading devices within the classrooms. Based on this, the lecture and student attendance record and other necessary data will be recorded.

The system will help a lot in improving student attendance in particular courses they need to attend and will save a lot of time. This paper consists of three sections: the first part deals with the related papers; the second part details the proposed framework; and the last part details the implementation plan according to a case study conducted at University of Tetova – North Macedonia.

# LITERATURE SURVEY

In early years a punch card system was used for data storage, also known as Hollerith cards, through which companies were able to store and access via entering the card into the computer system [1]. It is also commonly used nowadays as an attendance system in educational institutions. Employees wave their individual cards near a reader to punch in and out, ensuring the presence of the employee [2]. There are quite a number of previous researches in the field of computer science developed students' attendance tracking system to improve record taking in class using different technologies. For example, RFID [3] or near field communication (NFC) technology [4].

An example of application that Jainetal has developed is a desktop application in which a list of all registered students in a particular course is displayed when the class commences. Attendance is registered by clicking off a checkbox next to student's name that are present, and then for marking their presence a register button is clicked [5].

Based on [6] authors have approached to implement the students' attendance tracking system by using QR code including google forms and google sheets which are more convenient to be adopted by lecturers with no technical and computer programming skills required.

The proposed system by authors on [7] aims to record all student participation based on the generated unique QR code of each course for each class day. The instructors, in turn, copy this QR code and paste it on the first slide to be displayed in the lecture. If the instructor policy is to allow late students in his class and would like to mark them as present or late, then the QR code should also be copied on one of the four corners of as many slides as the instructor wishes. When the students are in class, the first thing that should be done is to pull out their smartphones, open the Mobile Module, and scan the QR code, then the Server Module runs an identity check on the registered students. This is done by comparing the facial image sent per transaction with the stored image on file for the student in question, the system will then control the location of student. Finally, a location check will be performed.

Our proposed model differs in a manner that should be easy to apply and quick in recording attendance during a class session; by focusing on creating a simple student attendance tracking system that can be used to take attendance which is both fast and affordable in comparison to the other methods.

## **PROPOSED SYSTEM**

This section explains the different instruments and methods utilized to create a QR code-based online attendance system as well as how the system functions as a whole. More than 4000 characters can be encoded in a two-dimensional barcode using a QR Code, which is a smartphone-readable two-dimensional barcode. QR codes can be used to create text messages, launch URLs, save contacts to address books, and show text to the user. Denso Wave Incorporated is the registered trademark holder of "QR Code". Nearly every smartphone and webcam in a browser can read a QR code [8].

The suggested model (Figure 1) is broken down into three modules. The administrators module is the first module and includes three different types of administrators: head of study program, administrator, and admin. The primary Administrator's responsibilities include creating heads of study programs and administrators for each study program, backing up the system and database, editing it, managing and adding professors, students, faculty, and study programs. In contrast, the head of the study program has the opportunity to schedule the professors for the semester by determining the time of the class and adding departments to the respective program. The study program administrator is also in charge of choosing the courses that each student will take during that semester.



Fig 1. Proposed Model Architecture

#### CONCLUSION

Keeping up with the latest innovations is now necessary, particularly in the realm of education. Educational establishments have been exploring methods to improve instruction by utilizing emerging technologies. Since everything is becoming more digital, we believe that the University needs this system almost entirely. In order to collect student attendance, a suggested system that uses OR codes and internet-connected devices has been presented in this research. According to this study, calling name lists in class can be replaced with an effective technique to record attendance: the QR code, a versatile and widely used feature of smart devices. After examining and evaluating the current manual system and researching the systems employed by other universities, this system was created. Especially in a big classroom, lecturers can expedite the process of recording attendance using this reasonably priced QR code-based attendance system, saving them important teaching time. Compared to the conventional approaches, the suggested technique offers greater security because it removes the possibility that students will register on behalf of those who might not be there. Although comparable platforms have already been created, we think the suggested platform will be more appealing for a number of reasons: The QR Code attendance system is the most precise and effective way to keep track of attendance in a database and manage it from any intelligent device rather than wasting paper, which is one of its many advantages over other forms of code scanning technology. The adoption of QR codes by instructors and students is essential to the technology's effective use. Consequently, it's critical to comprehend the elements influencing instructors' and students' intentions to utilize the QR code for this purpose.

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