

## **MAKING CLOUD MONITORS TO KEEP CLOUDS SAFE FROM MODELS**

**MUTHAIAH THUMMA** Assistant Professor Department Of CSE Sree Chaitanya College of Engineering, Karimnagar

**MANASA JALAPELLY** Assistant Professor Department Of CSE Sree Chaitanya College of Engineering, Karimnagar

### **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. We also hope to encourage the potential use of the Quick Response (QR) code as a future attendance management system.

### **Keywords:**

student, lecturer, attendance, QR code, and system.

## **I. INTRODUCTION**

Nowadays, it is very important to finish the job fast, learn something new, get higher results as easy and efficiently as you can. Every sector, especially in the education process and in the business world, needs management systems that will enable them to have adequate control and management in the development of learning or work. Considering all these advantages and benefits, we thought that the process of education at the university, in particular, needs an online system to manage student attendance.

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.

## II. 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.

## III. PROPOSED SYSTEM

This section describes the various tools and techniques used in creating an online attendance system using QR code and all the operation of the system. A QR Code is a two-dimensional barcode that is readable by smartphones and allows the encoding of over 4000 characters in a two-dimensional barcode. QR Codes may be used to display text to the user, to open a URL, save a contact to the address book or to compose text messages. "QR Code" is a registered trademark of Denso Wave Incorporated. A QR code can be read by almost all mobile phones and webcams in web browser [8].

The proposed model (Figure 1) is divided into three modules: the first module is the module of the administrators, which consists of 3 types: admin, head of study program and administrator of the study program. The role of the main Administrator is to backup the system and database, edit it, manage and insert professors, students, faculty, study programs, as well as create heads of study programs and administrators for the respective study programs. On the other hand, the head of the study program has the opportunity for the semester to make a schedule for the professors, by setting the time when the class will be held, adding departments to the respective program, and the administrator of the study program is responsible to select the courses that the respective student should attend during that semester.

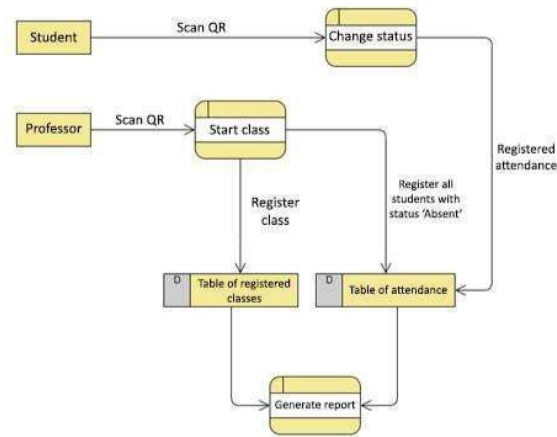


Fig 1. Proposed Model Architecture

#### IV. 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 QR 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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