

# Online Attendance Monitoring System Using Face Detection and QR Code

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**ABSTRACT** - Online attendance monitoring system (OAMS) is mainly focused on student attendance or any organization employee attendance such as educational institute for public and private sector on the basis of online class. Online attendance monitoring system will replace the manual method which take lot of time consuming and difficult to maintain. there are many technology used for take attendance but these technology is the best for attendance. Online Attendance Monitoring System is designed to record student data and store the data in database. This software takes attendance electronically via QR code or face detection. Online Attendance Monitoring System is based on web server, which can be implemented on computer or any android Phone. In this technology smart phone play a important role in our day to day life. Now a days smart phone can solve most of problem very easily and quickly. In this application, PHP is server side language.

**Keywords-** System, face detection, Instructor, QR code.

## 1. INTRODUCTION

The Online attendance monitoring system is very important in every school, institute or in organization. Most of students of high schools are prone to absence from the classes claiming that the class is boring. other due to laziness fail to attend classes, having preference of going to computer shops or playing games while some student cannot refuse the prospects of a friend asking them out during the class period actions are not reported to parents. This method is useful interaction between the student and instructor through which the instructor can get to know the student in the class or the student is mentally present in the class or not. This system also help the loss of time spend while taking the attendance of a crowd class. Online attendance monitoring system is mainly used by monitoring or capturing the student attendance by face detection or through the QR code. QR code can be scan by any android phone and then attendance of student is noted down. QR code is used to store data, text or any URL or link\_ this system is fully controlled by administrator or host but other can easily

access this software and view the student attendance report. Online Attendance Monitoring System project deal to totally eliminate the paper work and to progress the student information. In the traditional classroom setting, the existing system or manual way of checking attendance is a roll number call done by the teacher where student normal raise their hands or answer "present" when called for class attendance. for a lecture class, this process consumes time and effort. Another way of checking attendance is student are asked to write their name and signatures in attendance sheets. The problem with this approach is the authenticity of the attendance records since a student can easily write the name of his/her classmates since this attendance sheet is submitted after class. Moreover, the traditional way of attendance leads to a lot of paperwork and it is hard to maintain this attendance for long period. Among the various types of attendance system that have been developed, using log books, punch cards, fingerprint system, barcodes, QR codes and also RFID still cause lots of problems such as providing incorrect information to the user. face detection and QR code based attendance monitoring system is a combination of two android application developing for taking and storing the attendance of the student on the daily basis in the school or college or any organization. here the professor, who is handling the subjects, will be responsible to mark the attendance of the students or employees. Each staff will be given an android application that is used for taking attendance and generate the overall attendance status. An accurate report based on the student is generated here. Report of the student's attendance on weekly and monthly basis generated here. the main purpose of the Online attendance monitoring system using face detection and QR code is to computerize the traditional way of recording and provide an efficient and method to capture the attendance in institution. The most important of Online attendance monitoring system using face detection and QR code is provide better security, Maintenance of the system is very easily and cost effective, Generate the result quickly, provide accurate and efficient data, and it also user

friendly. It is vital for the educational sector to have solutions that simplify and increase the speed of data collection and increase the lecture efficiency. In this project, we use various technologies used in front end and back end. In front end, HTML, CSS is used. HTML means hypertext mark up language.

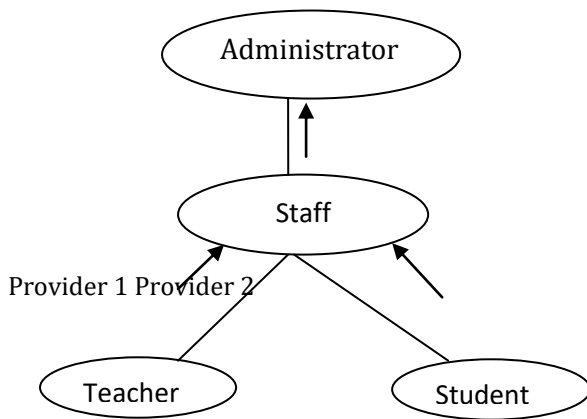


Figure 1.1 Activity diagram

HTML is used to create and save web documents for example Notepad/Notepad++ CSS stands for Cascading Style Sheets. CSS is used to create attractive layouts of the pages. In back end, PHP, MySQL. PHP Hypertext pre-processor (PHP) is a technology that allows software developers to create dynamically generated web pages, in HTML, XML, or other document types as per client request.

**2. PROBLEM DEFINITION-** Attendance monitoring system is software developed for daily attendance in schools, colleges and institutes. It facilitates access to attendance information of a particular student in a particular class. The process of recording attendance for students was in the form of hard work on paper and for the system was manually done. Besides wasting time and making efforts for preparing sheets and documents. The traditional way of attendance is recording manually in log books and then converting into desktop applications. Such a system can be a tedious process and may often lead to errors while generating reports. Apart from this, sometimes the attendance sheets are lost, misplaced or information wrongly entered due to various reasons. In early years in old systems, there is no use of face detection or QR code.

**3. OBJECTIVE** –The objective of this attendance monitoring system using face detection and QR code is to give a solution to the problem in the existing system and to create a system that will help the college or any other organization to make the attendance monitoring system more accurate and to prove that the system developed is effective and helpful. This system reduces admin work by integrating the details of the student and these department data can be stored in a single database. Easy access for students because they can view their attendance and make up for the shortage if attendance accordingly. It is also time saving as normal work is less. There is less chance of error. It eliminates duplicate data entry in time and attendance entries. Auto-generation of various types of reports of student attendance. Manual work for information retrieval and attendance becomes less as the work becomes digitized. Easy to access and user friendly it's provided attendance report very quickly at any point of time. This system can provide good visibility of data by just a few clicks an automated monitoring system can help manage schedule allocate work. In order to solve the drawbacks of the previous system, the existing system will need to evolve. The proposed system will reduce the paper work where attendance will no longer involve any manual recording. The new system will also reduce the total time needed to do attendance recording. The new system will acquire individual attendance by means of face detection and QR code to secure data accuracy of the attendance. The main specific objective of this project is to develop a portable Attendance monitoring system which is handy and self-powered, to ensure the speed of the attendance recording process is faster than the previous system which can go as fast as approximately 3 seconds for each student, have sufficient memory space to store the database, able to detect the face of an individual accurately face on face database and monitor the attendance with the help of QR code on the student database. Develop a database for the attendance monitoring system using face detection and QR code. This paper introduces the efficient method of attendance management system in the classroom environment that can replace the old manual method. This method is secure enough, reliable, accurate and efficient. There is no need for specialized hardware for installing the system in the classroom. It can be constructed using a camera and computer. There is a need to use algorithms that can recognize the face in well to improve the system performance.

**4. LITERATURE SURVEY**

1. [IN] Online attendance system Dr.A. Babu Karuppiyah. In this project, the process of detecting face from still pictures containing multiple faces can be separated in few steps. There are many face detection algorithms which can effectively detect a face in a picture. A problem faced

during this process was the large number of negative or unknown object. Face recognition means to identify a particular face a list of many faces and these are saved in database.

2. [IN] web service for student attendance managing system anusha V pai, atul Krishna etc. In this the QR code is used to scan using a QR scanner .when the student or any users scan the QR code. Scanner gives a deep indicating that the identify card has been scanned. The data base will be updated by making respective students attendance.

3. [IN] web based attendance management system sahar Hassan, Dr.Muhammad Zubair asghar this project gives the idea of language window server like apache, MYSQL, PHP.how we can use apache http service informally called apache In the most popular web server software that in 2009. Become the first web server. My SQL stands for structured query language. It is open source related database. My SQL database is used to save or store the data in database.PHP is hypertext pre-processor.but its stand for personal home page.

4. [IN] smart student attendance management system shubham p. uike, Monika p. Tambakhe etc. in this project its help to check the present and absent student record. Its help parents to check student attendance any time and any where.

## 5. METHODOLOGY

In this section, we discuss various concepts like face detection and QR code.

### 5.1 QR CODE: QUICK RESPONSE CODE

QR stands for (Quick Response) while they may look simple, QR codes are capable of storing lots of data.QR code (abbreviated from quick response code) is the trademark for a type of matrix barcode (or two dimensional code) first designed in 1994 for the automotive industry in Japan. The minimum size of QR is 2\*2 cm, or roughly 0.8\*0.8. There is no Standard sized QR code size, and QR codes can actually be smaller than 2\*2 cm. But to make sure the majority of current Smartphone does can scan it, a QR should be at least 2 cm wide by 2 cm long. Bar code is optical machine readable labels attached to item that record information related to the them. It was initially patented; however, the QR code system has become popular outside the automotive industry due to its fact readability and greater storage capacity compared to

standard UPC barcodes. The code consist black modules (square dots) arranged in a square grid on a white background. The information encoded may be made up of four standardized types (“modes”) of data (numeric, alphanumeric, byte/ binary, Kanji) or, though supported extensions, virtually any type of data.

A QR code is read by an imaging device, such as a camera, and formatted algorithmically by underlying software using Reed-Solomon error correction until the image can be appropriately interpreted. Data is then extracted from patterns present in both horizontal and vertical components of the image.



Figure 5.1: Design of QR code

#### 5.1.1 Types of QR

There are three types of QR

- Micro QR code
- SQRC code
- IQR code

##### Micro QR

Micro QR code was designed by Denso Wave in Japan. Micro QR code can be printed in black on a white background or in white on black background. The QR code supports various characters like numeric mode, alphanumeric mode, byte mode, Kanji mode. Micro QR code is a smaller version of the QR code standard for application where symbol size is limited and can hold 34 numeric characters .Figure shown the Micro QR code generated design.

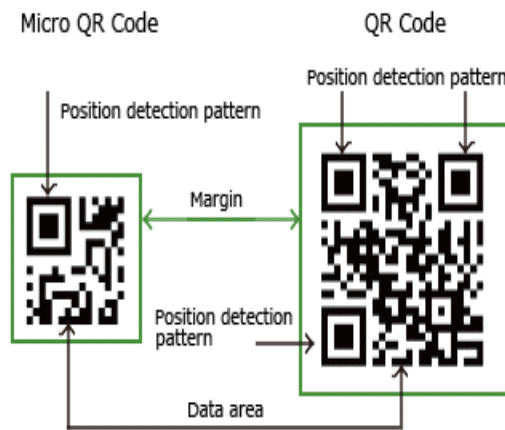


Figure 5.2 Micro QUICK RESPONSE CODE

### SQRC QR code

Secure Quick Response Code (SQRC) is a type of QR code that contains a private data. Secure QR is visual code containing demographics and photograph of the Aadhaar holder which is digitally signed by uidai. Data stored in QR code is as name, email id, gender, DOB, mobile number, address, photograph. It allows 2048 bit digital signature. This can be used to store private information and to manage company's internal information. Figure shown the SQRC code generated design



Figure 5.3- Secure Quick Response Code

### IQR code

IQR codes can be created in alternative to square or rectangular formations this is intended for situations where a rectangular barcode would otherwise be more appropriate, such as cylindrical objects IQR code is a matrix type 2D code allowing easy reading of its position and size. Figure shown the IQR code generated design

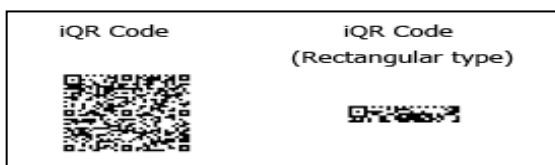


Figure 5.4: IQR codes

- **Mobile operating systems** - QR codes can be used on various mobile device operating systems. These devices support URL redirection, which allows QR codes to send metadata to existing applications on the device. Many paid or free apps are available with the ability to scan the codes and hard-link to an external URL.
- **URLs** -URLs aided marketing conversion rates even in the pre smart phone URLs aided marketing conversion rates even in the pre-smart phone era, but during those years faced several limitations: ad viewers usually had to type the URL and often did not have a web browser in front of them when they first viewed the ad.
- **Payment** -QR codes can be used to store bank account information or credit card information, or they can be specifically designed to work with particular payment provider applications. QR codes are commonly used in Bit coin.
- **Website login** - QR codes can be used to log into websites: a QR code is shown on the login page on a computer screen, and when a registered user scans it with a verified smart phone, they will automatically be logged in.
- **Video games**- Popular video games, such as Fez, the Principle, and Watch Dogs, have incorporated QR codes as story and/or game play elements.
- **Business card** -With these business card QR Codes, a contact card with the details you entered will be automatically stored into the contact list of the smart phone. You can enter your names, address, phone number, email and so on.
- **Wireless Network** -You can create QR Codes that contain wireless network credentials. After scanning, Smartphone's will connect automatically!
- **Send an SMS** -Save the content and the recipient's phone number of an SMS. After scanning, you will only have to confirm before sending it.
- **Send an email** -This works exactly like the SMS QR Code type. Only this time, you enter the email content, the subject and the recipients to enable sending after scanning.
- **Call a phone number** -Type in a phone number when you create the QR Code. When scanning, users will be proposed to call the phone number.
- **Add an event to a calendar** -After scanning these QR Codes, you will be asked if you want to save the event in your Smartphone's calendar. By

#### 5.1.1 Application of QR Code

adding the event to your calendar, you will be reminded of the correct date.

- **Plain text** -This is the simplest QR Code type. A raw text is encoded and will be displayed on the screen after scanning. You can write anything you like.

## 5.2 Face detection

Face detection is a method of identifying or verifying the identity of an individual using there. Face recognition system can ne identifying people in photos, videos or in real time to, low enforcement may also use mobile devices to identifying people during police stop. In this face recognition system firstly we use normalization process to check that from left, right, up, down. We capture, turn and rotate the image. This system takes or captures all the face points like lips, chin, for this process basically we use the code for face detection. But it's necessary that this photos are stored in data base .its technique is basically based on artificial intelligence. For example- in daily life we use phone to detect our image because we already store our face capture in phone data to set face lock in mobile phone.

**6. FUTURE SCOPE** Almost all the academic institutes require attendance record of the student and maintaining attendance manually can be hectic as well as time consuming task. Hence maintaining attendance automatically with the help of face recognition will be very helpful. This will also reduce manipulation of attendance record done by student the future scope and it will save time as well. The future scope of the proposed work can be capturing multiple detailed image of the student and using any cloud technology to store these images. The system can be configured and used in ATM machine to detect frauds. Also the system can be used at time of election where the voter can be identified by recognition the face. We have to make our inline attendance system global representative, so the school, college, o any other company can help attend easily.

**7. CONCLUSION** - IN this system, we use face detection and add QR code. To capture the student data. This process is done in particular website. For this process we use algorithms or code for face detection and also for QR code. It is an efficient method to store the attendance in the web site rather than wasting the paper work. Online

attendance monitoring system can store the student data and this system also, check the absent student details.

## 8. REFERENCES

1. Dr. A. Babu Karuppiah, R. Raja, M. Jaya lakshmi, L. Johnsilin shiny, B. Sri Devi, "Online Attendance system" International Journal of Engineering Research & Technology, 2017.
2. Anusha V Pai, Atul Krishna, Kshama P M, Menita Correa "Web Service for Student Attendance management system" International Journal of Advanced Research in Science and Engineering, 3 march 2016.
3. Sahar Hassan, Dr Muhammad Zubair Asghar, "Web-based Attendance Management system", Research gate.net, December 2015.
4. Shubham P. Uike, Monika P.Tambakhe, Chetna S. Dakhore, A. G. Waghade, "Smart Attendance Management system" International Research Journal of Engineering and Technology 2 February 2020.
5. Rajan Patel, Nimisha Patel, Mono Gajjar, "Online Attendance monitoring system in classroom using Radio frequency identification technology: A proposed system framework", Research gate.com, February 2012.
6. S. Matilda, K. Shahin, "Student Attendance Monitoring system using image processing", system computing Automation and networking (ICSCAN) 2019, IEEE international conference on 2019.
7. J. Chandra Mohan, Nagarajan Ra malingam, M. ashok Kumar, T. Dinesh Kumar, "Attendance Monitoring system of student Based on Biometric and GPS tracking system", Research gate.com, January 2017.
8. Nirmalya kar, Dr. Mrinal kanti Deb Barma, Ashim saha, "study of implementing Automated Attendance system using face reorganization technique", International journal of computer and communication.