QR Code-based Permission desk

Tummidi Jyothirmai	*Yellumahanthi Santosh Kumar*	*Vankodoth Naresh Naik*	*Mr. B. Durga Prasad*
CSE	*CSE*	*CSE*	*Assistant Professor*
Nalla Narasimha Reddy	*Nalla Narasimha Reddy*	*Nalla Narasimha Reddy*	*CSE*
Group of Institutions	*Group of Institutions*	*Group of Institutions*	*Nalla Narasimha Reddy*
Hyderabad, Telangana	*Hyderabad, Telangana*	*Hyderabad, Telangana*	*Group of Institutions*

Abstract **- QR code-based permission desk is based on a QR code, which gets generated each time a person enters his details and reason for taking the permission. In general, the scenario of taking and granting permissions in educational institutions is a time-consuming and tiring task as it needs to be granted by many officials. Also, the records of student's permission details are not being maintained. So, the proposed system is based on this idea which overcomes the drawbacks in real-time scenarios. The QR code-based Permission Desk system is a proposed solution for educational institutions to ease the process of acquiring permission from the faculty. The QR code can be scanned by a smartphone or webcam-enabled computer. The QR code when scanned, the student's name, roll number, reason for taking permission, date, and time is displayed. This system eliminates the need for paper-based permission and also stores information that can be accessed quickly rather than rummaging through old records.**

Key terms - QR code; Permission desk; QR Scanner; Educational system; verification; validation.

INTRODUCTION

QR code-based permission desk is based on a QR code, which gets generated each time a person enters his details and reason for taking the permission. In general, the scenario of taking and granting permissions in educational institutions is a time-consuming and tiring task as it needs to be granted by many officials. When the permission gets granted, a permission slip will be given which needs to be filled by the students and this should be again cross-verified with the class charge. Also, the records of student's permission details are not being maintained. So, The Proposed system is based on this idea which overcomes the drawbacks in real-time scenarios. The QR code-based Permission Desk System is a proposed solution for educational institutions to ease the process of acquiring permission from faculty. The QR code can be scanned by a smartphone or webcam-enabled computer. This system consists of four modules, the student module, Admin module, Faculty module, and Security-Personnel module. The student module allows the students to view their past permission details. The admin module allows to request permission by filling out the permission form and submitting the permission details to the faculty. If the permission request is approved by the faculty, it allows to generation of the permission QR code. These student's permission details are stored in the database. The faculty module allows the faculty to manage the student's permissions. The Security-Personnel module allows you to scan the QR code. The QR code when scanned, verifies with the details stored in the database, if matched, the permission gets accepted and the student can leave the college premises. This system aids the security of the students as it eradicates the thought of obtaining false permissions to leave the college. This system eliminates the need for paper-based permission and stores information that can be accessed quickly rather than rummaging through old records. The proposed system is an efficient and accurate way to record and give permissions, making it a promising solution for educational institutions.

QR CODE: QUICK RESPONSE CODE

A two-dimensional matrix barcode known as a QR code, short for quick-response code, was created in 1994 by Denso Wave, a Japanese company specializing in automobile parts labeling.

The QR code is composed of black squares arranged in a grid on a white background, complete with fiducial markers.

These markers facilitate recognition by imaging devices, such as cameras.).

The QR features are listed in Table 1.

The Figure below shows a sample of an unencrypted QR code that will be needed by the proposed system.

Figure: Quick Response Code

Some of the capacities, features, and standards of QR codes are listed in the below table:

TABLE I.   CAPACITY, FEATURES, AND STANDARDS FOR QR CODE

	QR Code
Developer (country)	DENSO (Japan)
Numeric	7,089
Alphanumeric	4,296
Binary	2,953
Kanji	1,817
Major Features	Large capacity Small printout size High speed scan
Standards	AIM International JIS ISO

EXISTING SYSTEM

The idea of this permission desk has emerged from the general scenario of taking permissions in educational institutions and the permission desk based on only a QR code is being referred from a QR code-based attendance system. So, the procedure of taking and granting permissions in educational institutions is time-consuming and lengthy as it needs to be granted by many officials. When the permission gets granted, a permission slip is given to the students which would be shown at the exit gate to leave the college premises.

The procedure of granting permissions in educational institutions begins with submitting a permission letter that has to be accepted and signed by the concerned faculty. When it gets accepted, the student will be directed to the respective department office. Then the student will be given a pair of permission slips which need to be filled and stamped with the college and head of the department signature. One of the slips needs to be submitted to the class in charge and the other slip should be submitted at the exit gate to leave the college premises. Also, the record of permission details of students is not being maintained anywhere.

PROPOSED SYSTEM

The QR code-based permission desk system is a modern solution designed to streamline and simplify the process of acquiring permissions within educational institutions. Traditionally, obtaining permissions for various reasons, such as leaving the campus, has been a cumbersome and time-consuming task that involves multiple officials and paperwork. This often leads to delays and inefficiencies in the permission-granting process.

In response to these challenges, the proposed system leverages QR code technology to revolutionize the way permissions are requested, granted, and managed. Each time a person i.e., a student, needs permission, they enter their details and the reason for the request. This information is used to generate a unique QR code.

The proposed solution of a QR code-based Permission desk eliminates all the paperwork and eases the process of taking and granting permissions. It requires less effort to fetch the information than going through years of paperwork.

Initially, the student needs to meet the admin or in charge of the permission desk with the concerned reason to avail permission which will then be managed by the faculty. When the permission is granted, the QR code gets generated. The QR code when scanned, displays the student's information such as the student's name, roll number, date, time, and reason for obtaining the permission. Finally, to leave the college premises, at the exit gate, the student shows the snapshot of the permission QR, QR when scanned by the security personnel the QR data with the database information, if matched the permission is accepted and the student is allowed to leave the college campus. This system aids the security of the students as it eradicates the thought of obtaining false permissions to leave the college.

WORKING OF PROPOSED SYSTEM

The QR-based permission desk requests, grants, and manages the permissions by performing its functionalities in the following manner:

It consists of four modules:

1.Student module

2.Admin module

3.Faculty module

4.Security-personnel module

1. Student module

The student module performs the following functionalities:

Student login: Students can log in by entering their login credentials such as their Roll Number.

View Permission details: Student can view their permission details which can be, the no. of permissions taken by them in that particular academic year.

2. Admin module

The admin module performs the following functionalities:

Admin Login: Admin can log in by entering their login credentials.

Request permission: The admin or the candidate should enter details such as the student's name, roll number, date, time, and the reason for obtaining permission. The details will be verified with the existing database associated with it. The student can then request the permission from concerned faculty or in-charges.

Generate QR Code: When the permission gets accepted, the QR code gets generated at the admin module.

3. Faculty module

The faculty module performs the following functionalities:

Faculty login: Faculty can log in by entering their login credentials.

Managing permission requests: Faculty can manage permission requests of students. They can either accept or reject permission for a particular candidate based on their reason for obtaining permission. They even have access to the history of student's permissions.

4. Security-Personnel module

The Security-Personnel module performs the following functionalities:

Security Personnel Login: Security Personnel can log in by entering their login credentials.

Validating QR code: A security person can verify the student's permission by scanning the generated QR code which is with students while leaving institutional premises.

CONCLUSION

These days it is required to keep up with the latest technologies, especially in the field of education.

Looking at the existing situation, we have thought of using mobile technology to efficiently benefit from the time-consuming procedure of taking permissions. By automating administrative tasks, reducing paper usage, and promoting eco-friendly practices, the system not only streamlines operations but also contributes to environmental sustainability.

Thus, with its emphasis on efficiency, security, and user satisfaction, the QR code-based permission desk system represents a significant leap forward in modernizing permission management within educational institutions.

FUTURE ENHANCEMENTS

As technology advances and user needs evolve, there are several exciting possibilities for enhancing the QR code-based Permission Desk:

Complete Automation: In the long term, aim to automate the entire permission management process, including intelligent decision-making based on historical data and real-time conditions.

User Notifications: Enable notifications for users when their permissions are scanned or when there are updates to their permissions, providing real-time updates and alerts.

REFERENCES

[1]"QR Code Based Smart Attendance System by Department of Information Science and Engineering, Henan University of Technology, Zhengzhou, Henan, China, Student THDC-Institute of Hydropower Engineering and Technology, Assistant Professor CSE Department THDC- Institute of Hydropower Engineering and Technology.

[2]" A Students Attendance System Using QR Code by Fadi Masalha, Nael Hizballah Faculty of Information Technology Applied Science University.