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UNI Pass: One Time Authentication System

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ABSTRACT

In modern educational institutions, managing student entry securely and efficiently has become a major challenge due to increasing student population and security concerns. Traditional systems such as manual registers and identity card verification are slow, error-prone, and vulnerable to misuse. This paper proposes a QR Code Based Secure Student Entry Management System that uses digital authentication and real-time validation. Each student is assigned a unique QR code which is scanned at entry points and verified through a database. The system prevents duplication, reduces manual effort, and maintains digital logs of entry. It improves speed, accuracy, and overall security, making it a reliable solution for institutions.

KEYWORDS

QR Code Security, Access Control, Real-Time Validation, Digital Logging, Student Authentication

I. INTRODUCTION

Educational institutions still rely on manual systems for student entry management, which are inefficient and insecure. Manual checking of ID cards and maintaining registers leads to delays and human errors. There is also a risk of misuse through duplication or sharing of identity cards. To overcome these issues, digital systems are being introduced. The proposed system uses QR codes for secure and fast authentication. It ensures that each entry is verified, recorded, and protected against misuse. This system enhances efficiency, reduces waiting time, and improves security in institutional environments.

II. LITERATURE REVIEW

Various technologies such as RFID, biometric systems, and barcode systems have been used for access control. RFID provides fast scanning but requires expensive hardware. Biometric systems offer high security but raise privacy concerns and are costly to maintain. QR code-based systems are simple, cost-effective, and easy to implement. They allow quick scanning and digital verification. Recent studies suggest that QR-based systems

combined with database validation provide better performance and accuracy compared to traditional methods.

III. METHODOLOGY

The system is developed in multiple steps. First, student data is collected through registration. Then a unique QR code is generated for each student. At the entry point, the QR code is scanned using a camera. The system checks the scanned data with the database. If valid, entry is allowed; otherwise, it is denied. The system also records entry time and status. This process ensures secure and efficient entry management.

IV. RESULTS AND DISCUSSION

The system was tested in a simulated environment. It showed faster processing compared to manual systems. The QR-based verification reduced waiting time and eliminated duplication. The system maintained accurate digital records and improved security. Overall, it performed efficiently and proved to be a better alternative to traditional methods.

V. FUTURE SCOPE AND CONCLUSION

Future improvements include cloud integration, mobile applications, and biometric integration. These features will enhance scalability and security. In conclusion, the proposed system provides an efficient, secure, and cost-effective solution for student entry management. It reduces manual effort and improves accuracy, making it suitable for modern institutions.

VI. REFERENCES

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