QR Code Based Smart Attendance System

Prof. Minal Solanki[1], Priyanka Gharat[2], Shruti Rangari[3]

[1]Assistant Professor, Department of Computer Application
[23]PG Scholar, Department of Computer Application
K.D.K. College of Engineering, Nagpur, Maharashtra, India
Minalgour12@gmail.com, priyankasgharat.mca24f@kdkce.edu.in, rangarisrajendra.mca24f@kdkce.edu.in

Abstract: *Attendance management plays a vital role in academic institutions. Traditional attendance methods such as manual roll calls are time-consuming, error-prone, and vulnerable to proxy attendance. Although QR code–based attendance systems offer automation and reduced manual effort, many existing systems lack proper authentication, role-based access control, and physical presence validation mechanisms.*

This paper presents an enhanced QR Code Based Smart Attendance System integrated with role-based access control, student self-registration, time-bound QR generation, and location-restricted validation. The system ensures secure attendance marking by validating session time, authenticated credentials, and classroom proximity. Experimental evaluation demonstrates improved accuracy, strong proxy prevention, and better usability compared to conventional QR-based systems. The proposed architecture is scalable, cost-effective, and suitable for real-world academic deployment.

Keywords: QR Code, Smart Attendance System, Role-Based Access Control, Location Validation, Web Application, Academic Automation