

Design and Development of QR Scan Code based Intelligence System for Matoshri Global School Bus Tracking

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Abstract: Increased usage of private vehicles exacerbates the already unbearable traffic congestion, with many parents expressing concerns about the safety of school buses for their children. However, implementing safe and user-friendly school buses could alleviate reliance on private vehicles, thus reducing traffic congestion, particularly during school hours. A proposed intelligent and secure tracking system for school buses aims to address this issue. This system would feature an Android application enabling guardians to track buses, receive notifications upon student entry and exit using barcode scanning, and ensure student arrival confirmation through dual authentication. The primary focus of this research is to demonstrate the feasibility of a secure and intelligent school bus system based on authentication protocols. It is anticipated that the outcomes of this research will restore parental confidence in school buses and decrease reliance on individual transportation. A smart school bus system would enhance student safety, alleviate parental concerns, and contribute to smoother traffic flow in cities.

Keywords: School Bus, GPS, QR Scan, Smartphone Application, Android Google Maps API

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