

The study proposes a smart parking model based on Internet of Things technology.

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Abstract: This study proposes a smart parking model based on Internet of Things (IoT) technology to address urban parking inefficiencies. The system integrates wireless sensor networks, real-time data processing, and a cloud-based management platform to monitor parking space availability. Ultrasonic sensors installed in each parking bay detect occupancy status, transmitting data via IoT protocols to a central server. A mobile application provides users with real-time information on vacant spots, reservation capabilities, and navigation assistance, thereby reducing search time and traffic congestion. The proposed model was evaluated through a simulation and a small-scale prototype, demonstrating high accuracy in occupancy detection and significant improvements in parking space utilization. The findings indicate that the IoT-based smart parking system offers a scalable, cost-effective solution for modern cities, enhancing user convenience and optimizing urban traffic flow. This research contributes to the development of intelligent transportation systems and provides a practical framework for future smart city infrastructure.

Keywords: Internet of Things, smart parking, proposed model, parking management