Abstract

Locating a parking space in central city areas, especially during the peak hours, is cumbersome for drivers. The issue arises from not having the knowledge of where the available spaces may be at the time, even if known, many vehicles may seek very limited parking spaces to cause severe traffic congestion. In this paper the design and implementation with a prototype of Reservation-based Smart Parking System (RSPS) that permits drivers to effectively locate and withhold the vacant parking spaces in mentioned. This system use cluster based algorithm which helps in periodically learning the parking status from the sensor networks deployed in parking spaces, the reservation service is influenced by the change of parking status. The drivers are allowed to access this said cyber-physical system with their personal communication devices. The system implemented is cost efficient smart parking system for multi-level parking facility using WSN (IR Sensor) and develop an android based application, by cluster based allocation method and performs automatic billing process. The system monitors the availability of idle parking slots and guides the vehicle to the nearest free slot. Cost is minimized by
keeping the number of sensors low without sacrificing the reliability. Energy consumption of each mote is kept in check by allowing the systems to sleep periodically and by reducing their communication range. This system’s reservation-based parking policy has the potential to smoothen the operations of parking systems, as well as mitigate traffic congestion caused by searching for parking.

References


Index Terms

Computer Science Wireless
Keywords

wireless sensor networks, internet of things, embedded system, reservation, resource allocation, parking guidance and information.