

## Automated Parking System

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**Abstract :** Traffic congestion with increased numbers of vehicles is already a serious issue for many countries. The absence of sufficient parking spaces adds to the issue. Motorists are forced to wait in long queues to park their vehicles. This adds to the inconvenience faced by a motorist, kept waiting for a slot allocation, manually done along with the parking payment calculation. In Sri Lanka, nowadays, parking systems use barcode technology to identify the vehicles at both the entrance and the exit points. Customer management is handled by the use of man power. A parking space is, generally permanently sub divided according to the vehicle type. Here, again, is an issue. Parking spaces are not utilized to the maximum. The current arrangement leaves room for unutilized parking spaces. Accordingly, there is a need to manage the parking space dynamically. As a vehicle enters the parking area, available space has to be assigned for the vehicle according to the vehicle type. The system, Automated Parking System (APS), provides an automated solution using RFID Technology to identify the vehicles. Simultaneously, an algorithm manages the space allocation dynamically. With this system, there is no permanent parking slot allocation for a vehicle type. A desktop application manages the customer. A Web application is used to manage the external users with their reservations. The system also has an android application to view the nearest parking area from the current location. APS is built using java and php. It uses LED panels to guide the user inside the parking area to find the allocated parking slot accurately. The system ensures efficient performance, saving precious time for a customer. Compared with the current parking systems, APS interacts with users and increases customer satisfaction as well.

**Keywords :** RFID, android, web based system, barcode, algorithm, LED panels

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