

INCREASING THE SAFETY OF TRAFFIC IN PARKING AREAS OF VEHICLES ON
THE STREETS OF CITIES AND DENSELY POPULATED AREAS

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A well-designed machine system is easy to use. If a facility invests in the quality integration and organization of an automated parking system, staff members will not have problems using it. If the system is user-friendly, the cost of training will be reduced. In a system environment, the traditional method of setting up machines can be tedious and time-consuming. However, the parking management system proves to be a viable option from a time-saving perspective. This way, customers won't be disappointed.

Security. Security is a key factor in parking lots. Organizations should consider security measures in parking lots. The importance of parking lot management systems is that they create a formula for granting permission for vehicles to enter and exit. The latest security features are integrated into parking systems. This plays a major role in eliminating security risks. In places where parking systems are available, the incidence of vehicles being stolen and vandalized is minimal [1].

Types of parking systems

Shuttle Parking System. This specialized parking system uses vehicles and elevators to park and retrieve vehicles. Conveyor belts and a pallet changer move the vehicles between the vehicle and a designated parking space. The shuttle parking system includes both single-level and multi-level parking. Ideal for larger parking spaces. Therefore, it is best suited for open and basement parking.

Puzzle parking system. This is a semi-automatic machine system. It incorporates a combination of pallets that allow the parking spaces to be moved horizontally and vertically. It is an autonomous system that is easy to adjust and configure to suit a specific feature. The puzzle machine system has a mechanical device that allows the parking space to be increased at the machine location. The system is used for open machines [2].

Rotating parking system. This system aims to provide space for multiple vehicles. The rotating parking system can be configured to accommodate 6 or more cars.

Stacker parking system. There is no pallet for the parking system. A stacker is a mobile device that facilitates the parking system of vehicles. In this parking system, parking and unloading of vehicles occurs quickly. This is possible due to the simultaneous horizontal and vertical movement of vehicles entering and leaving the parking space. Therefore, it is a convenient system for the driver.

Automated Guided Vehicle [AGV] parking system. It occurs in a closed parking lot. It can be operated in both orderly and random modes. It is used in several ways to increase the efficiency of the parking lot. Automated guided vehicle system uses software systems to facilitate the retrieval of vehicles.

A rail-guided vehicle system. This system is similar to an automated guided vehicle because it uses a simplified design. This vehicle system can move forward/backward and sideways. Therefore, it provides flexibility in maneuvering on travel paths. The system operates on hard concrete surfaces.

Parking lot access control: This component includes barriers, gates, and entry/exit terminals equipped with ticket dispensers, card readers, or license plate recognition systems to control access to the parking lot [3].

Parking Management System: This system uses sensors and signage to guide drivers to available parking spaces, reducing congestion and saving time.

Payment and Revenue Management: It includes payment kiosks, mobile payment apps or online platforms to facilitate payment processing and revenue management.

Security and Surveillance: This component includes surveillance cameras, intercom systems, and access control devices to ensure parking lot security and deter any potential criminal activity.

Data Management and Reporting: This component includes a centralized software system that collects and manages data related to parking lot operations, occupancy rates, and other relevant information. It produces reports and analyses to support decision-making processes [4].

How to choose a parking system

Flexibility. Every business is unique, and different parking spaces are suited to different types of parking. Some businesses have small lots and want to optimize the profitability of their parking spaces on a smaller scale, while others require a large-scale parking infrastructure covering multiple lots and spaces. The ability to customize parking management systems is critical to successful optimization and improvement.

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