SMART CAR PARKING SYSTEM

- Smart parking system is a software solution that incorporates IoT technologies such as sensing devices, cameras, or counting sensors to identify which parking area is occupied or available and often uses this sensor data to design a real-time parking map.
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- Smart parking system helps to improve the consumer's parking experience using technology such as real time monitoring with data analysis, reports, filters, smart alerts and inspection tools.
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- Smart parking system reduces traffic volume, gas emissions, kilometers travelled by a car to park and time spent parking.
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- Smart parking system allows users to search, navigate, check availability, pre-book, pay online and request value added services such as car wash, maintenance, electric charging point etc via consumer application.
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- Smart parking system enhances operational efficiency, simplifies the flow of urban traffic and offers drivers a more enjoyable and time-saving experience.

A smart car parking system is a software solution that incorporates IoT technologies such as sensing devices, cameras, or counting sensors to identify which parking area is occupied or available and often uses this sensor data to design a real-time parking map. Such sensors communicate with the gateway and transfer the real-time data to the cloud.

Some of the benefits of a smart car parking system are:

- It reduces traffic congestion and pollution by minimizing the time spent searching for a parking spot.
- It increases the revenue and efficiency of parking operators by optimizing the utilization of parking spaces and providing dynamic pricing.
- It enhances the customer satisfaction and loyalty by offering convenient features such as reservation, navigation, payment, and value-added services.

There are different types of smart car parking systems, such as:

- RFID/NFC based access: The user can access the parking area by using a RFID tag or a NFC-enabled smartphone.

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- Bluetooth Low Energy (BLE) based access: The user can access the parking area by using a BLE-enabled smartphone that communicates with a BLE beacon installed at the entrance.
- License Plate Recognition (LPR) based access: The user can access the parking area by using a camera that captures and recognizes the license plate number of the vehicle.
- QR code, Reverse QR Code and Barcode Access: The user can access the parking area by using a QR code, a reverse QR code, or a barcode that is generated by an app or printed on a ticket.

Some of the examples of smart car parking systems are:

- NEC Smart Parking System: This system is developed by NEC India and provides features such as real-time monitoring, data analysis, reports, filters, smart alerts, inspection tools, online tariff engine integration, offline tariff engine integration, remote support and troubleshooting.
- Cleverciti Systems: This system is developed by Cleverciti Systems GmbH and provides features such as overhead sensors, LED displays, mobile app, web portal, analytics dashboard, dynamic pricing, reservation, payment, and loyalty programs.
- Spaceo Technologies: This system is developed by Spaceo Technologies Pvt. Ltd. and provides features such as bay-sensor status, pre-booking, online payment, enforcement system, car wash, maintenance, electric charging point, etc.