Automatic car parking system

Technology, Cars

Numbers of vehicle are increasing day by day due to bank leasing policies and loan policies of government. Many problems are associated with the massive increase in the number of vehicles. Traffic congestion, car parking congestion, locating empty parking lots and the security of the car are some of the major problem. The main issue that is lacking in most of the parking area is security of the car. Statistical reports show that most of the vehicles are stolen from the parking lot.

It doesn’t provide enough guideline to the driver as a result it is time consuming to find vacant parking lot in an unautomated car parking system They are generally considered as unsafe as car safety is at risk.

In the past few years research is going on wireless sensor network. Due to their vast application potential in diverse field they are attracting attention. It can be used in almost every environment to collect information. It provides guidelines to help driver to locate parking lot easily. It ensures safety of the car.

It restricts the illegal mobility of the car park in the lot. It provides efficient car management to the administrator by sharing information of the parking lot including statistical and real time information. It can record the duration of the car park in the lot and can perform auto payment of the parking fee. It improve space utilization

In an intelligence car parking system drivers are guided to a parking field where low cost wireless sensor are used in each parking lot and the status of parking lot detected by the sensors are continuously updated on the database of the central station via wireless network.

In this project a registered driver will be provided a Zigbee chip which will allow driver to enter in a parking field, new or guest driver will going to get a zigbeechip from the booth adjacent to the entrance which will also allow unregistered drivers to park the car. As now both registered and newly registered vehicles contains zigbee chip so this chip in the vehicle will transmit signal that will be going to received by zigbee receiver at the entrance thus opening the entrance barrier.

After entrance drivers will be guided by LCD which is continuously updated by the central station which will help them to park in the lot in no time. Each parking lot consist of the sensors (wasp mote, light temperature or sound) which will going to detect the vehicle . Wireless sensor node (zigbee) will transmit the data obtained from the sensor to the central management station (CU/Data Base) which will help the managers and administrators to get the information about parking field and to maintain the data base about the parking field.

On the way out of the parking field both registered and newly registered driver will have to enter password and id then they will be allow to go out of the parking field. This special password will ensure car safety.

Zigbee receiver (of specific range ensuring one car at a time) at the entrance will ensure that only the zigbee chip holder enter in to the parking field. If for somewhat reason an authorized vehicle enters, it will not be able to go out of the parking field as he will not be having special password and id given during the time of registration. So he have to pay fine and to give some detail of vehicle (e. g. car reg no etc) in order to ensure that this vehicle belong to that him.

This all mechanism ensures car safety. To ensure more safety each parking lot may also contain zigbee receiver(as it is not expensive) so when the car with no zigbee chip park in the lot, the sensor will detect a vehicle but zigbee receiver will not detect the transmitted signal from the zigbee chip so this status will be transmitted to the central station and the parking lot no on the LCD will going to blink, thus identifying the position of car with no zigbee chip The guideline (through LCD) help driver to locate parking lot easily. It provides efficient car management to the administrator by sharing information of the parking lot including statistical and real time information.