Automatic Parking System

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Introduction

We are designing a miniature automated parking system. Currently world is facing a lot of parking problem. There are large parking lots but most are not efficiently controlled. People face many problems while parking, e.g. they waste 5-10 mins in just searching for empty space for their vehicle. Many people are required to maintain a parking lot. By implementing some digital system, we can ease the effort of parking a vehicle.

System Overview

In over parking lot, car will enter through a boom barrier, passing through it will trigger a digital circuit that will show the nearest path of empty space via LED's. Driver should park his/her vehicle at designated spot only, failing to which the vehicle wouldn't be considered as parked. Our system can handle only single car at a time. When driver leaves the lot, at exit point he have pay the parking fee according to the duration.

Implementation Details

We are using an Arduino board to implement the digital circuit. PIR sensors will detect presence of vehicle at all spots and give signal accordingly. Servo motors will drive boom barriers. We will have max capacity of four cars. No of cars entering that lot will be counted using a PIR sensor at entrance, by which we will display parking spots left.

Results

We have implemented all the above thing and completed the coding part. We are currently calibrating the PIR sensor. The sensor is detecting movement at large distance.

Conclusion

If this method it accepted in real world usage, it will surely reduce time, man-power and will be very efficient for parking lots with huge capacity.