For more Project details visit:

http://www.projectsof8051.com/automatic-car-parking-indicator-system/

Code	Project Title
1185	Car parking indicator

Synopsis for

Intelligent car parking monitoring system

INTRODUCTION:-

1) Objectives of Project :

Now days in many multiplex systems there is a severe problem for car parking systems .There are many lanes for car parking, so to park a car one has to look for the all lanes. Moreover there is a lot of men labor involved for this process for which there is lot of investment. So the need is to develop a system which indicates directly which lane is vacant.

So the project objective is to develop a system to indicate the vacant lane. The project involves a system including infrared transmitter and receiver in every lane and a led display outside the car parking gate

Conventionally, car parking systems does not have any intelligent monitoring system. Parking lots are monitored by human beings. All vehicles enter into the parking and waste time for searching for parking slot. Sometimes it creates blockage. Condition become worse when there are multiple parking lanes and each lane have multiple parking slots.

Use of automated system for car parking monitoring will reduce the human efforts. Display unit is installed on entrance of parking lot which will show LEDs for all Parking slot and for all parking lanes. Empty slot is indicated by the respective glowing LED.

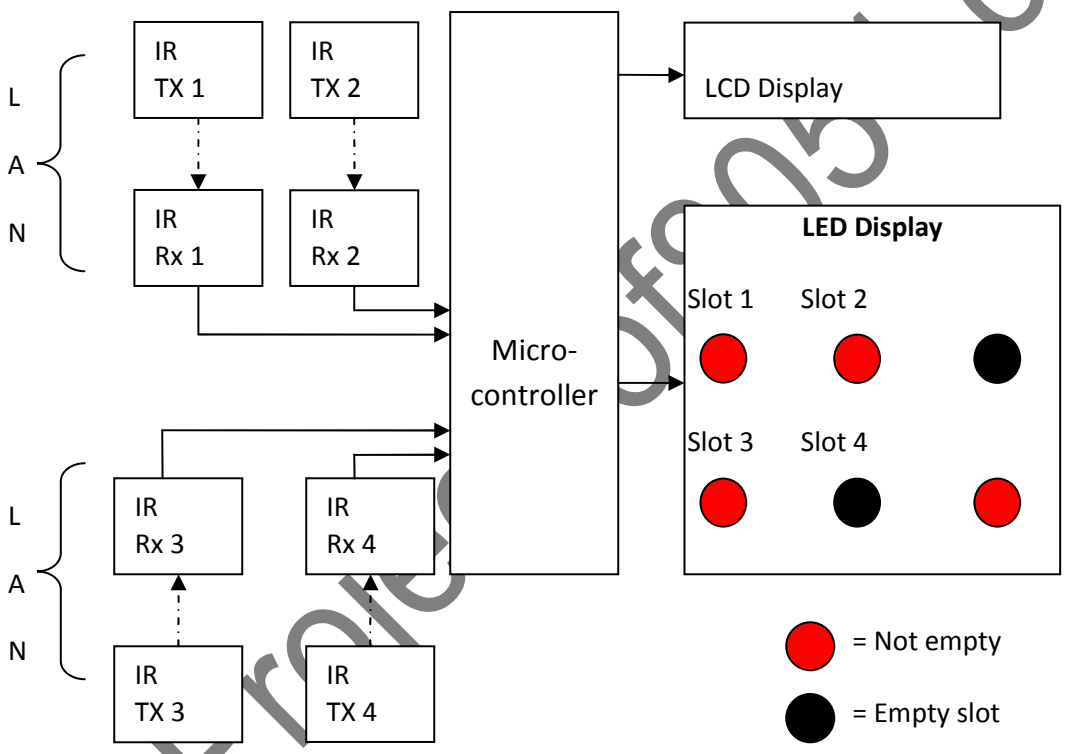
2) Description of Project:

We are going to use Infra Red transmitters and Receivers for each parking slot. The IR Receivers are connected to AVR microcontroller. IR rays are obstructed when a car is parked in any parking slot. Thus AVR will come to know that which slot is empty and which slot is full.

We have chosen IR module instead of RF module because we want a receiver having line of sight communication with the transmitter. But RF does not require line of sight communication. And in case of LDR, there is scope for false triggering due to sunlight or headlight of car. So considering all these points we have finalized to use IR module.

For transmitter section we are going to use IR LEDs driven by a 555 timer IC. Timer IC will generate a frequency of 38 KHz, which will be given to IR LEDs.

BLOCK DIAGRAM:-



HARDWARE / SOFTWARE REQUIREMENT:-

1) HARDWARE REQUIRED:

- For controller purpose we are going to use AVR controlled ATmega16 microcontroller.

- For infrared receiver section, we are going to use TSOP1738. This receives only a square wave of 38 KHz.
- For display panel we are going to use a LED for each parking slot.

2) SOFTWARE REQUIRED:

- The software will be written in 'C' language.
- It will be compiled using Code-Vision AVR 'C' compiler
- ISP programmer is used to burn the program on AVR
- EAGLE software used for PCB layout

ADVANTAGES/DISADVANTAGES: -

- Saves time for searching parking slot.
- Saves manpower

APPLICATIONS: -

- This project can be used for parking system in any shopping mall, multiplex
- Can be used for industries, commercial offices and educational institutes.