

Title of the project	:	Automatic Car Parking System using 89C51 microcontroller
Microcontroller	:	AT89C51
Software	:	Embedded C, Keil, Proload
Power Supply	:	+5V, 500mA Regulated Power Supply
Display	:	a) LCD b) LED
LCD	:	HD44780 16-character, 2-line (16X2)
LED	:	5mm White-in-Red, 5mm White-in-Blue
Sensors	:	IR Sensors
Crystal	:	11.0592MHz
Developed By	:	M/S Wine Yard Technologies 3-6-148/1/A, Opp HDFC Bank, Liberty Road, Himayathnagar, Hyd – 29
Phone	:	040-65178887, www.wineyard.biz

AUTOMATIC CAR PARKING SYSTEM USING 89C51 MICROCONTROLLER

The Project Automatic Car Parking System using 89C51 Microcontroller is an interesting project which uses 89C51 microcontroller as its brain. The project is designed for car parking.

The aim of this project is to atomize the car park for allowing the cars into the park. LCD is provided to display the information about the total number of cars that can be parked and the place free for parking. Two IR TX – RX pairs are used in this project to identify the entry or exit of the cars into/out of park. These two IR TX – RX pairs are arranged either side of the gate. The TX and RX are arranged face to face across the road so that the RX should get IR signal continuously.

Whenever the mains are switched on, the LCD displays the message “parking space for 10 vehicles”. The number indicates the maximum capacity of park in this project. Whenever a car comes in front of the gate, the IR signal gets disturbed and the microcontroller will open the gate by rotating the stepper motor. The gate will be closed only after the car leaves the second IR pair since the microcontroller should know whether the car left the gate or not. Now the microcontroller decrements the value of the count and displays it on LCD. In this way, the microcontroller decrements the count whenever the car leaves the park and displays it on LCD.

If the count reaches '0', i.e. if the park is completely filled, the microcontroller will display "NO SPACE FOR PARKING" on LCD. And now if any vehicle tries to enter the park, the gate will not be opened since there is no space. If any vehicle leaves the park, the controller will increment the count and allows the other vehicles for parking.

This project uses regulated 5V, 500mA power supply. Unregulated 12V DC is used for relay. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac out put of secondary of 230/12V step down transformer.

Block Diagram: Automatic Car Parking System using 89C51 Microcontroller

