Smart Car Parking System

Project Title: Smart Car Parking System

Project Description:

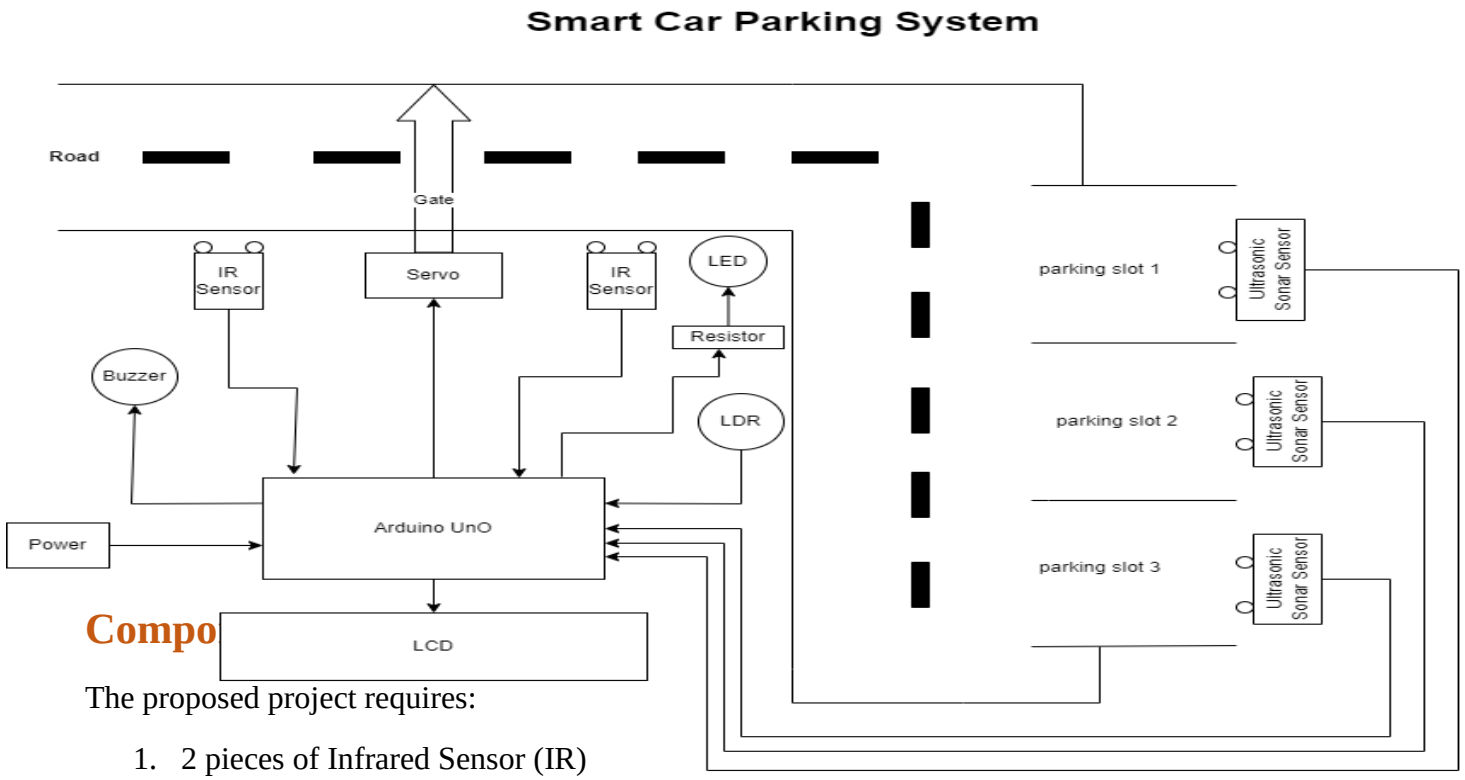
The proposed project will perform some smart actions depending on some specified components such as:

1. It can show the parking slot information (for example, if there's any empty slot or all slots are booked) via LCD on the basis of the information of the Sonar sensor.
2. It has an automatic door/gate opening and closing system with the help of servo and IR sensor.
3. It has an automatic lighting system (for example, at night or when it is cloudy weather, the parking area's LED light will turn on and at day time it is turned off automatically) with the help of LDR sensor and LED.
4. It will notify the entry and exit of a car via beeping with the help of a buzzer.

Here when a new car come the IR sensor detect it send the data to Arduino and it open the Door via servo motor action and beep the buzzer once to indicate a new entry and when the car goes to one of the parking slots, the associated ultrasonic sonar sensor send data to the Arduino and via LCD it will shows the remaining empty slot. Now when a car goes out similar thing happens, data goes from the associated ultrasonic sensor to Arduino, and Arduino beeps the buzzer twice for notifying one exit and shows the remaining empty slot via LCD. Moreover, depending on the

lighting situation in the parking area the LDR sends value to Arduino and the Arduino turns on or off the LED light automatically.

The below figure shows the connection among the components and the overall setup:



Compo

The proposed project requires:

1. 2 pieces of Infrared Sensor (IR)
2. 1 piece of Servo Motor
3. 3 pieces of Ultrasonic Sonar Sensor
4. 1 piece of LED
5. 1 piece of Buzzer
6. 1 piece of LCD
7. 1 piece of Arduino Uno
8. Power Source
9. Jumper wires
10. Resistors