ECECC09

ELECTRONICS DESIGN WORKSHOP

MINI PROJECT PROPOSAL

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Introduction and Motivation

One of the major issues faced by people in densely populated cities is the congestion caused due to a huge number of cars. Not only is this troublesome for the people driving the cars, it's equally frustrating for those looking for a spot to park, especially if they have busy work schedules and do not want any delays in their routines.

Many a times, people looking desperately for a parking spot enter a parking space that has already been filled up to capacity, wasting their time just going around looking for an empty space. Also, sometimes people do find an empty slot, however, only after spending a lot of time searching, since they never had any idea where it is going to be.

We have come up with this idea of building a parking system that tells the user whether the parking space has any available spot for them to park their car, and if so, also tell them exactly where they could find it, something that they rightfully deserve to know even before entering the parking space. This would allow them to save a lot of time that is otherwise wasted in roaming around the space and this would therefore create an efficient and convenient parking system.

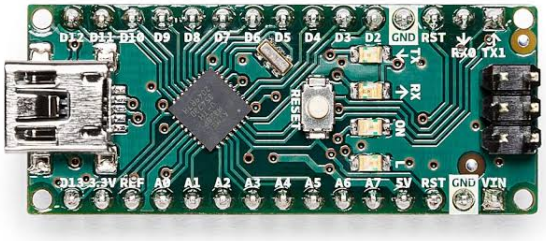
Project Description

This project makes use of IR sensors to detect the cars entering or leaving the parking space as well as to determine the slots available for parking. The parking gates at entry and exit would be controlled using servo motors, that would open when a vehicle is detected using the sensors. Also, an LCD display at the entrance continuously displays the availability of every slot in the parking area. An Arduino NANO Microcontroller is used to drive the complete system.

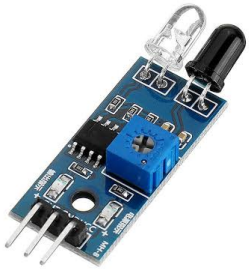
If a car enters the parking space and occupies a parking slot, then the slot is shown to be filled on the LED display, and if a car leaves then the corresponding slot is shown to be vacant. The parking gate would open only if there is at least one vacant spot available, and would remain closed if all the slots have been occupied.

Tentative list of materials required

ARDUINO NANO



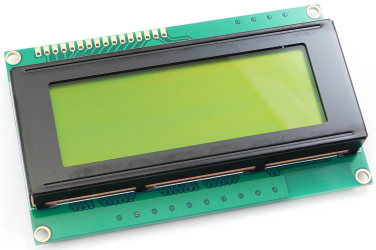
IR SENSORS



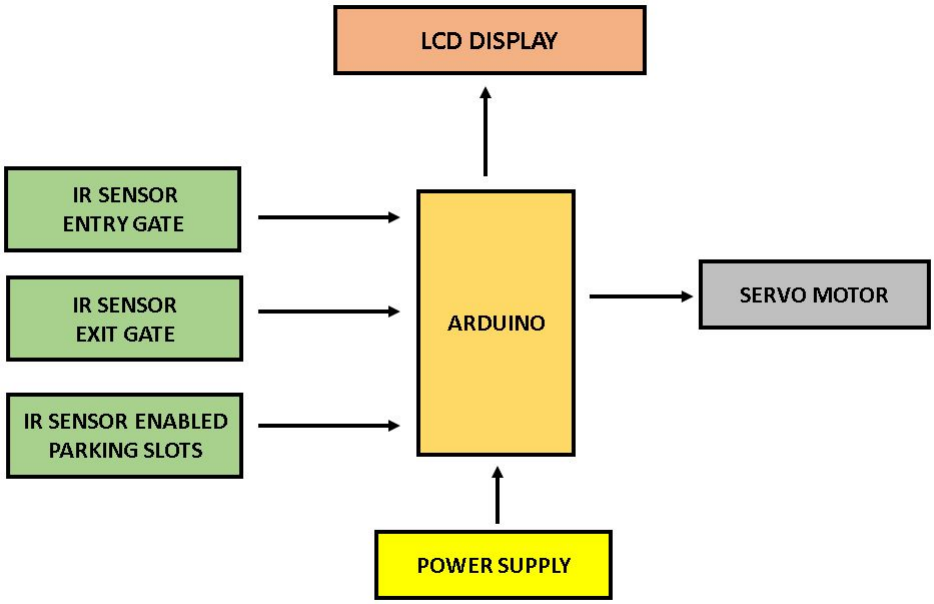
USB CABLE

SG90 SERVO MOTOR

LCD DISPLAY



BLOCK DIAGRAM



GANTT CHART

Weekly Targets	January				February				March				April			
Tasks	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proposal																
Schematic Design																
Arranging components																
Uploading On Arduino																
Assembling and soldering																
Testing																
Submission																