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AUTOMATIC DOOR CONTROL SYSTEM USING IOT

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ABSTRACT

This research paper presents implementation of automation of door operation without any manual intervention. As soon as a person approaches the door (at about 2 or 3 feet), the door automatically opens and after some time(about 5 to 10 seconds), the door closes by sliding the motor in the reverse direction. Such Automatic Door Opener Systems are very useful as we do not need a person to standby the door and open it whenever a guest comes. Also,since the doors are opened and closed automatically only when a person approaches the door, resulting in a contactless opening of door which will be significant in following COVID guidelines. The proposed project finds applications in shopping malls, cinemas, hospitals, domestic etc. So, in order to understand the potential of this concept, we propose a simple Automatic Door Opener System using Arduino, PIR Sensor and ESP 8266. The PIR sensor based on detection of object in the close vicinity is detected and output of sensor is given to microcontroller.

Keywords: Automatic Door Control System.

I. INTRODUCTION

In the present era a world is moving towards automation to avoid human intervention to perform a particular task. The opening and shutting of the door automatically has become a prime importance in few of the applications like malls, Cinema halls etc. Opening and closing of doors is always a boring job, especially in places where an individual is usually required to open the door for visitors such as hotels, shopping malls and theatres. Here is solution to open and close the door i.e., movement sensed automatic door opening and shutting system. The proposed system automatically opens and closes the door by detecting a person or object

II. METHODOLOGY

Automatic open door system is needed for reduce energy , security in covid-19 for safety etc. Automatic opening and closing of door. This system we create using PIR sensor, Arduino etc.

Components used to make this system

[1] Hardware

Arduino,PIR sensor,Motor Driver IC,DC motor,Resistor,Wires,Jumper Wires,5 V Adapter with connector,LED

[2] Software

Arduino IDE 1.8.1 windows

III. MODELING AND ANALYSIS

Analysis:

In present door without automation we required manual interaction of humans. It also dangerous in covid-19

Disadvantage of simple door

- manual interaction of human is needed
- Require energy for opening or closing the door
- Not provide security

Advantages of automatic open door system

- Automatic open door system save energy
- In automatic open door system no need for human interaction

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- In covid-19 it is very useful
- Provide security

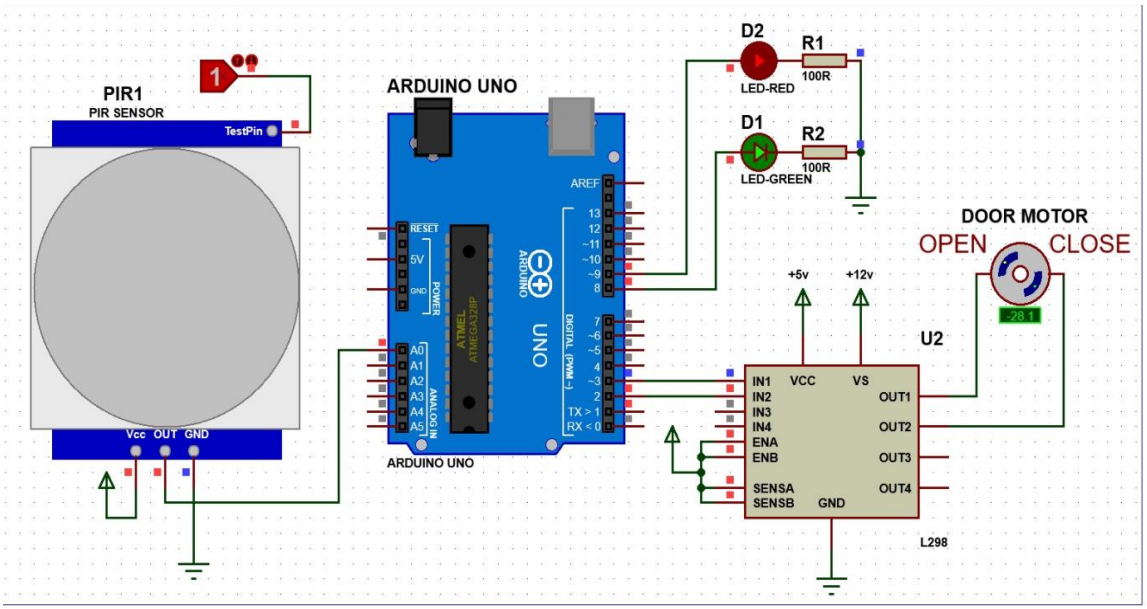

Figure 1: Architecture of the system

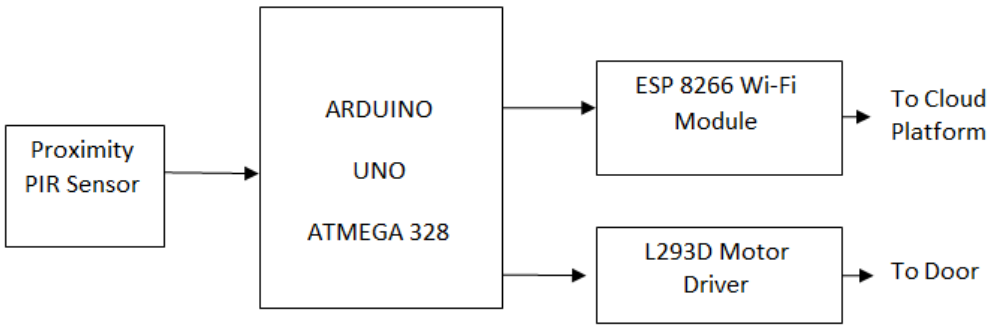

Figure 2: Block Diagram

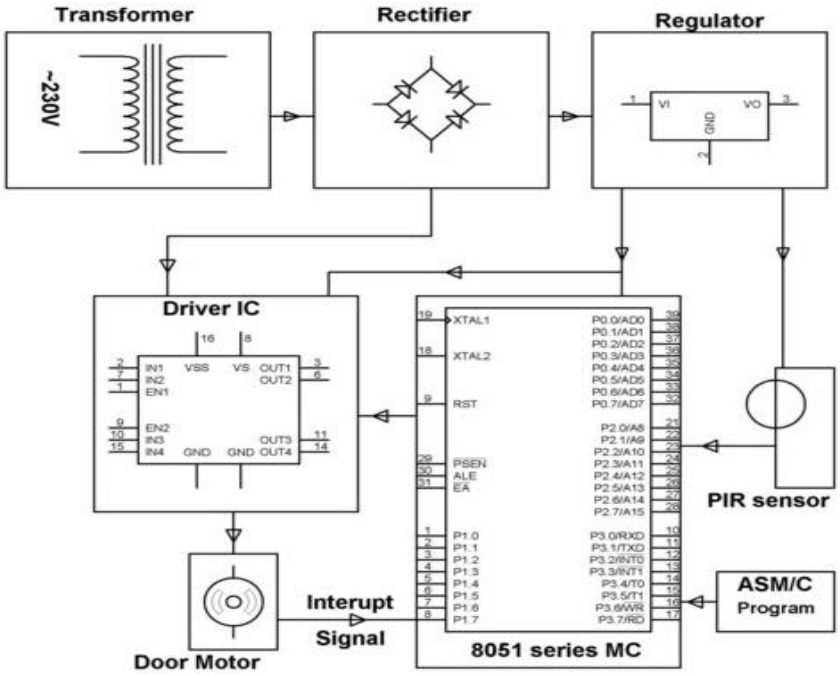

Figure 3: Circuit Diagram

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IV. RESULTS AND DISCUSSION

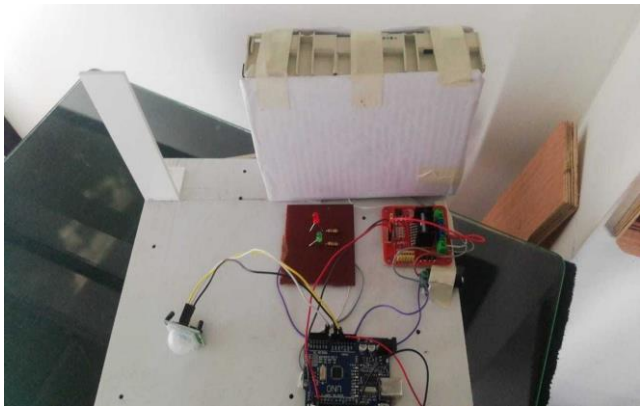

Figure 4: Automatic open door system model

Figure 5: Automatic open door system model

V. CONCLUSION

This project may be a simple design of automatic door opening system where PIR sensor serves the most input function and here Arduino uno may be a microcontroller board supported the ATmega328p.We have considered two feedbacks to the present architecture that once we implement an efficient system then there are often a display unit for showing number of persons entered during a particular room along with this technique we will use face-detection through camera for automated attendance system. Thus, we will conclude that this is often an easy and low-cost architecture of automatic door opening system but having many benefits such as we will conserve energy, reduces human efforts, saves time etc.

VI. REFERENCES

[1] Smart sensor for industrial application by Lcrzysztof Iniewsky.
[2] Handbook on modern sensor by Jacob Fardeen.
[3] Recommended books on sensor by John Wiley & Sons.
[4] https://circuitdigest.com/microcontrollerprojects/automaticdoor-opener
[5] project-using-arduino https://en.wikipedia.org/wiki/Passive_infrared_sensor
[6] https://www.circuitgallary.com/2014/22/arduino-pirhomesecurity
[7] system.html https://www.engineersgarage/sites/default/fiLes/LED%2016 X 2.pdf
[8] https://www.elprocus.com/pirsensorbasicapplication