

THE AUTOMATIC OPENING DOOR SYSTEM

HANI BAIZURA BINTI ROSNAN
NURUL SYAZWANI BINTI IDRIS

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FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
MALAYSIA

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ABSTRACT

A door is a moving structure used to block off, and allow access to, an entrance to or within an enclosed space, such as a building or vehicle. Typically, doors have an interior side that faces the inside of a space and an exterior side that faces the outside of that space. In this project “Automatic Door Opening System”, the project is about opening and closing of the door automatically without using any effort from the human. The objective of the project is to help human inconvenience way and disabilities people. The project also required prototype that helps the student to learn more about hardware and components of the circuit. The circuit for automatic door used micro-controller PIC 16F778A that is programmed using MPLAB and PIC kit software. The circuit consists of Motor Driver IC L293D, LCD, potentiometer, capacitor, resistor and others. The input of the circuit is a PIR sensor that detects if movement is approaching near to it and send the code to the micro-controller. The output of the circuit is Unipolar stepper motor that rotates clockwise and anticlockwise representing the door is opening and closing. The project is supplied by 12volt for unipolar stepper motor and 9 volt for power supply. When the power supply is ON and the PIR sensor detects any movement, the motor will rotate, the LCD will show “MOTION SENSOR” and the buzzer will beep as well. Last procedure for the project is soldered to the strip board and troubleshoot if any problem is detected.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND STUDY

Opening and closing of doors have been always a tedious job, especially in places like shopping malls, hotels, and theaters where a person is always required to open the door for visitors. Automatic opening and closing of a door by sensing any body movement near the door is achieved with the help of PIR (Passive Infrared) sensor. A motion detector is a device that detects moving objects, particularly people. A motion detector is often integrated as a component of a system that automatically performs.

Automatic doors are doors which open automatically when approached by someone rather than needing to be opened manually with a door handle or bar.