AUTOMATED FAN SPEED CONTROL BASED ON ROOM TEMPERATURE USING ARDUINO MEGA2560

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ABSTRACT

This project focus on development of automated fan speed controlled based on room temperature using Arduino Mega2560. Hence, this project proposes the detection the people motion to switch ON and OFF fan automatically and also to controlled speed of fan based on room temperature using Arduino Mega2560, IR and PIR sensor, motor driver L298N, humidity and temperature sensor (DHT11), liquid crystal display and fan 12VDC. The usability of an Arduino Mega2560 in this project is to develop a program that are controlling all the system automatically. This project help solves the problem to control speed of fan manually and to reduce the power consumption when user forget to switch OFF the fan. This project will give the solution for all sort of problem because this project automated all of this function to ease the user to switch ON and OFF the fan and to control speed of fan automatic. With this project, the user no need to worry about when forget to closed the fan because this project will switch OFF the fan. For this prototype, the system is developed to only to detect human motion using IR and PIR sensor. This system is developed based on the room at the house. However, this project also helps the user to change the speed of fan and switch ON and OFF fan successfully done. As a result, this project automated fan speed controlled based on room temperature using Arduino Mega2560 is successfully implemented.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Project

Automatic is a technology working by itself with little or no direct human control. Nowadays, many machine and home appliances use an automatic system to ease human work and also can accomplish processes that cannot be done by human manually. An automated system was implemented in 1624 when the industrial revolution in Europe. After that, the automated system was growing rapidly and many new inventions produced to ease people work till now. Its same goes to fan system many new ideas to overcome manually to the automatic system.

An electric fan is a device used to produce the airflow for the purpose of creating comfort and ventilation. Electric fans are designed to create the breeze and circulate air in a region. The fan creates its cooling effect based on the speed at which its blades rotate. Hence, the speed controller is a very important part of a fan because it shows the quality and how fast can cooling room/place.

Microcontroller is the most important component in the modern system design and play the vital role to control various task in one time. Over the year, many electronic project used Arduino microcontroller as the heart of the project. Arduino platform is the open source which is can used easily by the user. Besides that, Arduino have many types such as UNO, Mega, Lilypad and Leonardo. In this project, Arduino Mega have been used as the microcontroller to control all the task.

1.2 Problem Statement

This project about to produce automated fan using Arduino as a controller to control all the function needed in this project. The conventional controller that use in manual fan must be changed because of it not reliable to modern lifestyle nowadays with new technologies grown. The conventional controller also cannot do a lot of task