

STUDY ON THE DESIGN, BUILD AND IMPLEMENTATION OF CIRCUIT IN GREENHOUSE WEATHER STATION

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ABSTRACT

This project was designed to be used in greenhouses. This project consists of Light Level Detector circuit, Temperature Sensor circuit and Humidity Sensor circuit. The circuits are used to measure the condition and surrounding of the greenhouse. This is important in stabilizing the surrounding of the greenhouse to promote healthy growth of plants.

This project is aimed for keen gardener to help them in monitoring and maintain the weather surrounding in the greenhouse. Currently in the market there are no similar device containing several gauge and control as in this project. However the weather station equipment is available and is used by many people but it is expensive and it is usually used specifically in a personal computer to interface with. Furthermore there are other similar products that contain the entire sensor but does not show the output to digital 7 Segment display and are also not designed for outside usage.

Hence, this project is suitable for use not only in a greenhouse but also inside a house in order to measure the condition in the house. As a result, the user can be aware with the surrounding. This project is more user friendly because the range of scale for the entire sensor is not too big and it will give the exact value of surrounding. This project will give lot of benefit to the user and also it can be used for a variety of function.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This project is about study on design, build and implementation of circuit in greenhouse weather station. It was also based on research about the greenhouse operation. This project was used for a keen gardener, as it comprised measurements of all atmospheric condition that can help plants grow. This project consists of three circuits which were light level detector circuit, temperature sensor circuit and humidity sensor circuit.

Light level detector circuit is a circuit which used a photoconductive cell as a sensor to sense light from the surroundings. It will then convert the amount of light into a direct voltage. The direct voltage will be applied to LED driver to give the measurement of the light intensity in the greenhouse.

The second circuit is temperature sensor circuit. The temperature sensor circuit was used to sense the temperature from the surroundings in the greenhouse. For this circuit, the thermistor had been used as a sensor and functioned as a resistor that lowers the resistance when temperature increased.

The third circuit is humidity sensor circuit. The humidity sensor circuit was meant to measure the percentage of water in the air. For this circuit, the humidity sensor, HS15P had been used to sense the humidity from surroundings in the greenhouse.