SOLAR POWERED SPRINKLER SYSTEM

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ABSTRACT

The purpose of this project is to create a model of solar powered sprinkler system. This project was created to help people are busy with career that no have time for watering but they likes plants and flora. Our earth is filled with a mixture of flora. Flora is something unique and interesting if people know about the special properties. The plants also important role as the air conditioning in the open because the trees serve as absorbs dust or haze and change the air conditioning carbon dioxide to oxygen. Usually, every house has more than two plants whether flower plant or other plant to keep the area clean with green environment. Therefore, watering system is important for plants to growth. This project consists of designing the watering system and its hardware and software. The objective of this project is to watering the plants when the soils become dry. Other than that, the renewable energy is use in this project. One of the renewable energy that it uses is solar energy. Renewable energy is refer to any energy source that is naturally processes that are constantly which is, it does not have a limited supply. The implementation of solar energy in this project is to reduced the used of electricity.

This project consists of four main circuits such as solar charger shield, moisture sensor, light sensor, and ultrasonic sensor. This project is operated when circuit works by detecting the moisture level if the soil falls below a predefined level. The light emitting diode (LED) will give warning when the soil is dry. Then, the motor water pump will function to sprinkler water into soil. this sprinkler system has three controls, first for measured the soil wetness by moisture sensor, second the amount of water lost in the tank by ultrasonic sensor and third is light sensor to give the plants or garden have light when the area of plants is dim. The solar charger shield is used to convert solar energy to electricity and save into the rechargeable battery.

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CHAPTER 1

INTRODUCTION

The purpose of this project is to create a model of Solar Powered Sprinkler System. In this project, there are some designs on the hardware and the software. Included in this chapter is background of project, problem statement, objective, scope of work, and scope of project.

1.1 BACKGROUND OF PROJECT

Water is a basic requirement for plants to grow. Plants need water as nutrients which are absorbed by the roots from the soil to survive. Almost 90 percent of water that plants need. The main function of water is to be transported throughout the plant almost continuously to keep its vital process working. The basic process of water in root system such as roots absorbs the water from the soil and then it is carried through the plant. Much of the water in the plants is taken up through the roots, which is tiny rootlets that go through the soil around the roots and increase the roots surface area. The important role of water is as the solvent that moves the minerals from the soil up through the plants. The cause that plants growth slows because of the soil does not enough water. In the