"Heaven's Light is Our Guide"

Rajshahi University of Engineering & Technology

Department of Electrical & Computer Engineering

Project Report

Course Title: Electronic Shop Practice

Course No: ECE-3100

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Name of the project:

Automatic Plant Watering System.

Abstract:

Since nowadays, in the age of advanced electronics and technology, the life of human being should be simpler and more convenient, there is a need for many automated systems that are capable of replacing or reducing human effort in their daily activities and jobs. In our day to day life proper watering is exigent for the plants and trees which are grown in containers. Many people un-surmounted to take good care of expensive plants or trees like Bonsai because of improper timing or lack of watering. Such trees need timely water supply for the perfect growth. An automated system which is capable of perceiving the proper situation of watering plants can be convenient in this regard. In our project, the moisture sensor is used to detect the moisture of the soil. When the soil gets dry, the motor automatically started to water the soil.

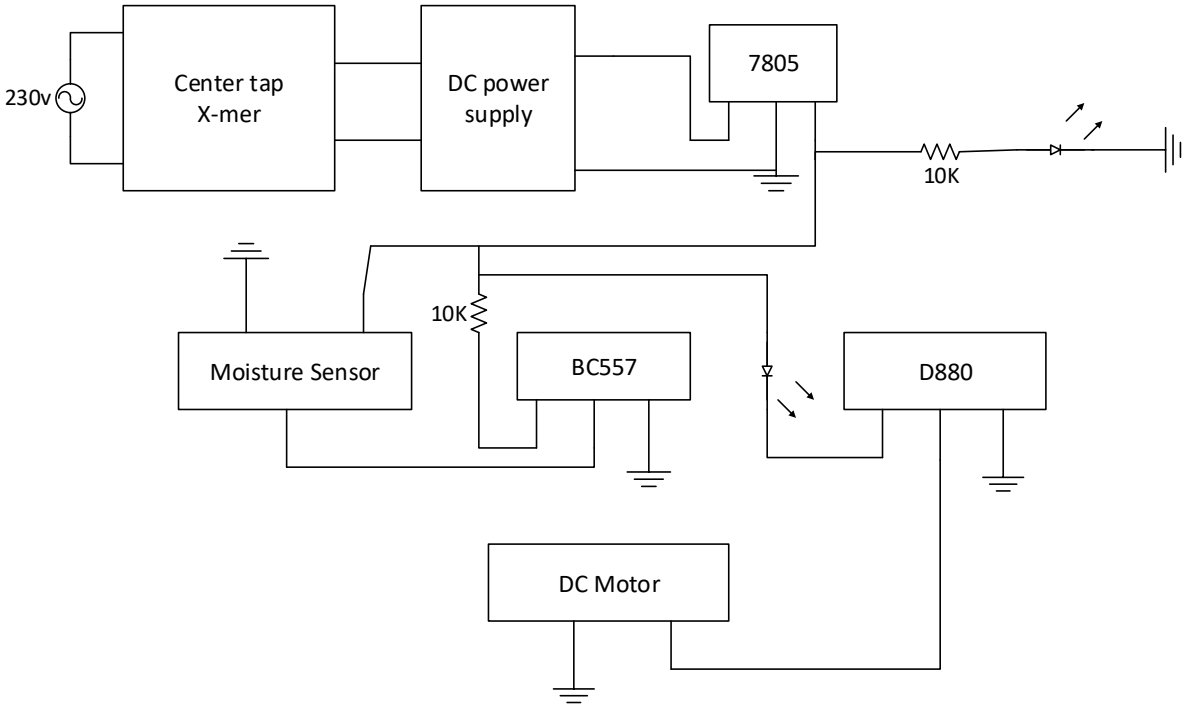
Objectives:

- To make own and cheap automated watering system
- To reduce the human effort
- To save the time of the human from their busy schedule
- Very effective when people go on a vacation for some days.

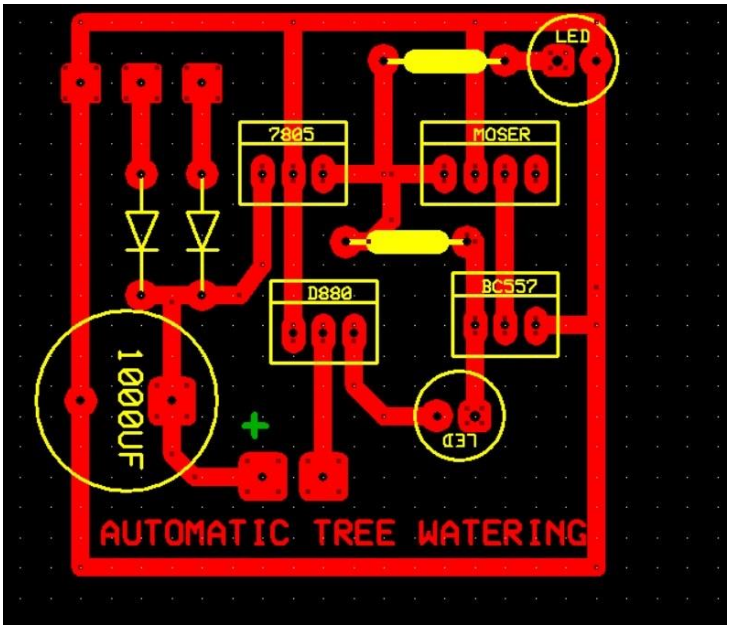
Equipments:

1. Soil Moisture Sensor(3.3V-5V)
2. Mini Submersible DC Motor(5V, 130 ~ 220mA)
3. Transformer(9V)
4. Voltage Regulator(7805)
5. Transistor(BC557, D880)
6. Resistor(10K)
7. LED

Block Diagram:



PCB Design:



Cost Estimation:

Equipments	Quantity	Cost
Soil Moisture Sensor	1 piece	150/-
Mini Submersible DC motor(5V)	1 piece	150/-
7805 Voltage Regulator	1 piece	10/-
BC557 pnp Transistor	1 piece	5/-
D880 npn Transistor	1 piece	5/-
LED	2 piece	5/-
Resistor(10K)	2 piece	5/-
Diode	2 piece	5/-
Capacitor (1000uf)	1 piece	5/-
PCB Board	1 piece	50/-
Center Tap Transformer	1 piece	80/-

Total Cost=470/-

Discussion:

An adequate water supply is important for plant growth. When rainfall is not sufficient, the plants need additional water. We know that people do not pour the water on to the plants in their gardens when they go to vacation or often forget to water plants. As a result, there is a chance to get the plants damaged. The project that we have undertaken is "Automatic Plant Watering System". By implementing this project we can reduce the human effort. As well as tree or plants get water according the moisture of the soil. It is an efficient project for dry season as well as the heavy rainy season.