AUTOMAITIC FIELD IRRIGATION SYSTEM SENSING OF SOIL MOISTUR

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ABSTRACT- The main aim of this project to provide automaitic irrigation in the

field which helps in saving water and maney. irrigation is the artificial application of water to the land or soil .it is used to assist in the growing of agricultural crops maintaenance of landscapes ,and re-vegetation of disturbe soil in dry areas and during periods of inadiquate rainfall ,irrigation system uses sprinkler for water supply to the field the entire system is controlled using aurdino- uno which is programed bywhatever the interrupt signal is generated by sensor , it sendes the signal to the sprinkler to turn ON/OFF temperature sensor and humidity sensor are connected to internal partes of aurdino-uno comprater . whenever there is a change in temperature and humidity of the surrounding there sensor sense change in temperature and humidity and gives as interrupt signal to the aurdino-uno and thus sprinkler is activated . these sprinkler can be easily automated by using controller , in addition , farmers using automatic equipment are able to reduce runoff from over watering saturated soil ,avoid irrigation at the wrong time of day , which will improve crop performance by ensure adequate water and nutrienes when needed the aurdino-uno based on automated irrigation system consist of moisture sensor , analog to digital converter , aurdino-uno, relay driver and power supply . the system is eco friendly .

Keywords- aurodino-uno, water pump , water Pump, Temperature sensor , humidity sensor , relay , LCD.

1 Introduction

The continuouse increasing demand of food requires the rapid improvement in food production technology .in a country like india where the economy is mainly based on agriculture and the climatic condition is isotropic , still we are not able to take full use of agricultural resources . the main reason is the lack of rain & scarcity land resevoir water The continuous extracted of water from earth is reducing the water level due to unplanned use of water due to which a significant amount of water goes to wasts

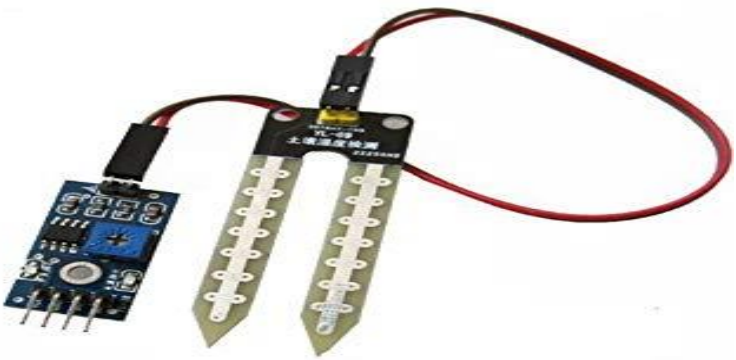
In morden drip irrigation system , the most significant advantage is that water is supplid near the root zone of the plants drip by drip due to which a large quality of water is saved . at the present area , the former have been using irrigation technique in india through manual control in which farmer irrigate the land at the regular intervals . this process sometime consumes more water or sometime the water reaches last due to which crops get dried . water deficiency can be determine to the plants before visible wilting occure . slowed growth rate , lighter weight fruit follows slight water deficiency . this problem can be perfectly rectified if we use automatic aurodino-based drip irrigation system in which the irrigate will take place only when there will be acute requirement of water.

Irrigation system use valves to turn irrigation ON and OFF . these valves may be easily automated by using controller . automating farm or nursery irrigation allows farmer to apply the right amount of water at the right time , regardless of the availability of labor to turn valves on and off . in addition , former using automation equipment are able to reduce runoff from over watering saturated soil, avoid irrigating at the wrong time of day , which will improve crop performance by ensuring adequate water nutrients when when needed . automatic drip irrigation is a valuable tool for accurate soil moisture control in highly specialized greenhouse vegetable production and and it is a simple , precise method for irrigation and . it also helps in time saving , removal of human error in adjusting available soil moisture levels and maximize treir net profile.

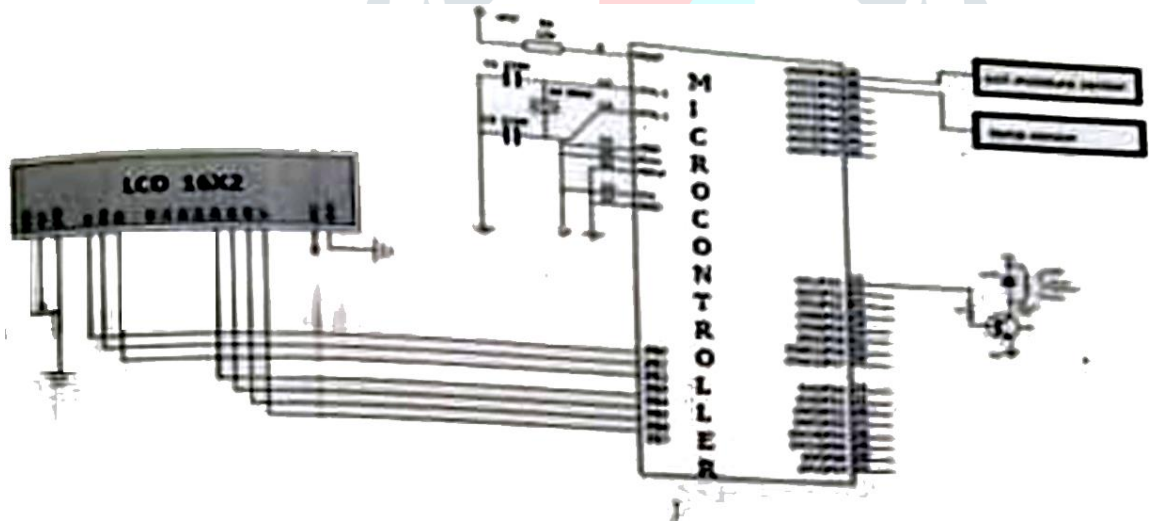
1.1 sensors

The soil moisture sensor as shoen in fig. below , plays a crucial facter here . there are several way to measure the moisture of the soil . we are going to moist soil . we all know that the moist soil conduct electricity better than the dry one . and the impedance level of the dry soil is higher than the moist one .

another one is water level sensor for checking whether the water is sufficient or not. this sensor automatically generates a signal and give to the aurdino-uno for proper water to the land



METHODOLOGY AND BLOCK DIAGRAM



CONCLSION

This Work is Implemented and tasted successfully.it is sensing moistur and temperature and accordingly switching ON/OFF water pump through relay .This project can be successfully in the agricultural fields for automatic irrigation and will be proved a great help to the farmer.