MICROCONTROLLER BASED AUTOMATIC REAL TIME WATER IRRIGATION MANAGEMENT SYSTEM

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ABSTRACT:

This project is used to control the irrigation of lands automatically. The entire system can be controlled using the microcontroller unit. The microcontroller unit gives the signals to the devices connected to it. The system consists of different types of sensors like soil moisture sensor, pH sensor and temperature sensors. The sensors senses its relevant data and gives it to the microcontroller unit. The MCU checks the received data with the predetermined data and gives the signals to the motor or sprinkler. Thus we can reduce the wastage and unwanted usage of water.

I.NTRODUCTION

Nowadays in this world, the most important requirement is water. A survey tells that India and China may face the huge drought of fresh water (i.e.) drinking water. So it is necessary to save the water and prevent the unwanted usage of water. Even in agriculture field, large amount of water is wasted. Irrigation of enormous amount of water to the agriculture field may even damage the crops. So it is important to maintain the irrigation of water to the fields. India is one of the major agricultural country and it is important to preserve water. So by using some of the efficient and important method, we can preserve the water. At the same time we want to produce a cost efficient model to implement in the irrigation lands. The technology used must also be in intermediate level so that only all the people in the country can use it without any difficulty.

II.EXISTING SYSTEM DESIGN

The Current Framework configuration comprises of transmitter and additionally collector. The Proposed Piece outline of transmitter and collector. Transmitter segment Comprises of various kind of detecting unit, for example, temperature, mugginess, gas and additionally the water level of well. Microcontroller for time space multiplexing information acquired from various sort of Sensor and also to convert the simple information into computerized one.

Moistness Sensor

Moistness is a declaration of the measure of water vapors in air. It is an imperceptible gas that differs between 1-4% of our climate by volume. SY-HS-220 sensor module changes over relative stickiness (30-90 % RH) to voltage and can be utilized as a part of climate observing application. This sensor is utilized to screen moistness i.e. dampness display in the encompassing.

Zigbee Module

The XBee RF Modules are intended to work inside the zigbee convention and bolster the interesting needs of minimal effort, low power remote sensor arrange. The modules require negligible power and give solid conveyance of information between remote gadgets. The modules work inside the ISM 2.4 GHz recurrence band. It works over a scope of 100-200 meters.

The recipient module comprises of a Xbee RF module which is associated with PC framework through MAX232. Along these lines the observing information got by Zigbee module is specifically exchanged to PC framework.

III.PROPOSED FRAMEWORK

In the proposed, soil dampness sensor is utilized to gauge the dampness level of the dirt and it sends the flag to the microcontroller. Where it is changed over to the computerized flag and taken for process. At that point the pH sensor is utilized to quantify the pHlevel of the dirt and this can be come back to the smaller scale controller.

By utilizing pH sensor we can quantify the corrosive or base substance in the dirt. LM 35 temperature sensor is utilized to gauge the encompassing

temperature of the product field. Indeed, even we can quantify the temperature in cooling season too. Since, a few products are develop some specific temperature as it were.

The fundamental rule of this sensor is, the point at which the dirt is over the particular level or edge esteem then the water is provided to the dirt. In the event that the dampness level of the dirt is not as much as the edge esteem then water is provided to the dirt.
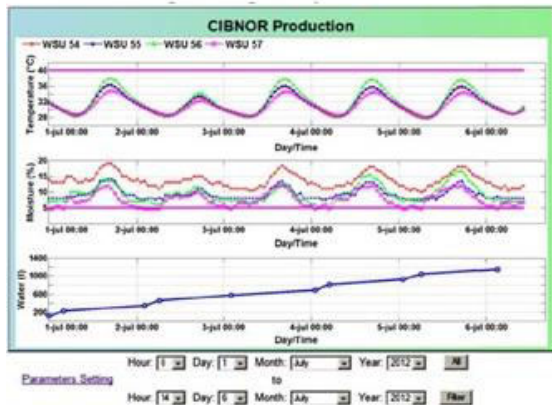

In the event that there is any rain then we send a flag to switch of the engine by this we can keep the water for sometime later. This should be possible by utilizing soil dampness sensor and this will have uncommon conductor for measure the dirt parameter. What's more, fundamental reason for this one will be utilized to spare the water from the current of higher water in the field. What's more, this dirt dampness sensor is faculties the dirt and its parameter then it will send the oblige perusing to the microcontroller. What's more, the microcontroller is having hand-off driver. Also, it will be control the electromagnetic transfer for water pump control.

By utilizing this we can undoubtedly sprinkle the water at whatever point necessity of soil dampness sensor. Since overabundance of water is given to the fields will ruin the plants. Information gathered by the base station, for example, pH, turbidity, conductivity, and so on. Information gathered at the remote site can be shown in visual organization on a server PC with the assistance of hyper terminal.

A transfer is an electro-attractive switch which is helpful on the off chance that you need to utilize a low voltage circuit to turn on and off a light associated with the 220v fundamental supply. The outline beneath demonstrates a normal transfer. The current expected to work the transfer loop is more than the 220v.
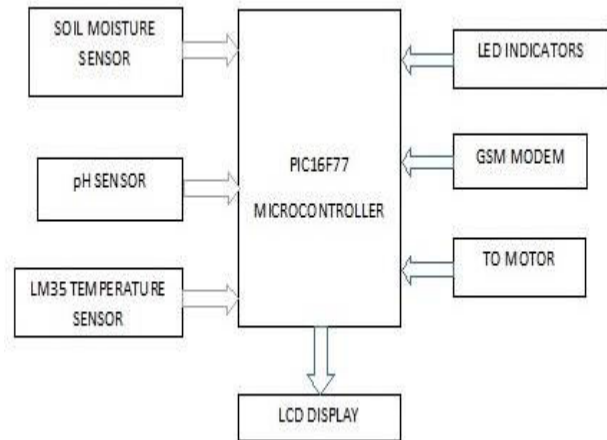
IV.RESULT

Thus by using the proposed method we can save large amount of water. And at the same time we can increase the yield of the crops. By supplying only the sufficient amount of water we can preserve the water wastage. By using this model we can reduce the normal water consumption to (60-70) %.

V.CONCLUSION

Nowadays water shortage becomes one of the major issues in this world. So everyone has their own responsibility to preserve the water. At the same time agriculture is not possible without the water. So in that field we want to find how we can preserve the water. And at the same time we also want to find

how we can increase the yield with those sufficient water.

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