AUTOMATIC PLANT IRRIGATION SYSTEM BY USING ARDUINO WITH MESSAGE ALERT

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Abstract-

Because of the current population explosion, there is a food and water crisis in the current era. So, to avoid this headache, we should sell the agricultural zone. However, water waste occurs in this zone in the form of water logging while irrigation is used to water agricultural farms. As a result, an automated plant irrigation device must be created to ensure proper water delivery inside the fields. This paper presents an automated plant irrigation device that routinely senses the moisture content material of the soil and determines whether or not irrigation is required or no longer, as well as the type of water required for soil. Water currently serves an important function not only for humans, but also for flora and fauna. The world is currently dealing with an all-too-common problem of water scarcity. The agricultural zone is experiencing increased water loss as a result of water depletion caused by additional irrigation. We therefore want to create an automatic irrigation system that can monitor the soil's moisture level and regularly irrigate the plants. Utilizing an LCD monitor, an Arduino, a motor pump, and a soil moisture sensor will enable this. If the soil's moisture content is low, the LCD screen may show the percentage of moisture content material, and water may be applied to the soil at the predetermined level. The ability to apply this technology to efficiently cut water loss and save time in all significant areas of agriculture is its most significant advantage.

I. INTRODUCTION

Arduino is a free and open-source digital electronics platform that uses only basic hardware and software. Inputs like a light sensor, a user pressing a button, or a tweet may be evaluated by Arduino forums and transformed into outputs like starting a motor, turning on an LED, or publishing anything online. Over the years, Arduino has been the brain behind hundreds of projects, from straightforward home goods to intricate medical equipment. Around this open-supply platform, a global network of markers has developed, and their contributions have increased the wealth of knowledge that is now readily accessible and helpful to both novices and professionals.

The Lvrea Interaction Design Institute developed Arduino as a straightforward tool for quick prototyping, geared for students with no prior knowledge of electronics or programming. The Arduino board evolved as its network grew, moving from basic 8-bit forums to products for Internet of Things (IoT) applications, wearables, 3-D printing, and embedded settings. Since every Arduino forum is entirely open-source, users may construct them independently and then modify them to suit their requirements. Additionally open-source, the programme is still in its infancy.

A computer device that completes a particular task might be referred to as an embedded device. Embedded systems can be found in many products, such as air conditioners, VCD and DVD, printers, fax machines, mobile phones, and more. An open-source electrical platform called Arduino runs on basic hardware and software.

II. RESEARCH ELABORATIONS

The soil's moisture content, temperature, and mildew could all be supplied by the first iteration of the plant communicator. Farmers might be able to find out about the soil. Overall, an additional feature like self-irrigation is added after the prototype is complete. The pump is automatically switched ON/OFF using the relay circuit, which is connected to the drive circuit, when the sensed charge exceeds the edge values set in the programme. This allows the voltage to be altered. Due of its low cost and ease of use, this gadget may be useful for farmers, agriculturists, and nurseries. While traditional or manual irrigation devices require more time and water to operate, this device will help the user by enabling self-irrigation, which will save time.

III. Algorithm

Step 1: Start

**Step 2 :**Give connections to all of the required additives carefully.

Step 3 : Giving energy to Arduino via way of means of Adapter(12v).

Step 4 :we upload GSM Module to present Message Alert.

Step 5 : Dump the code to Arduino as of given instructions.

Step 6 :area the moisture sensor withinside the soil , it's going to discover the moisture stage and pumps the motor On whilst soil is dry and offers the Message Alert to mobile.
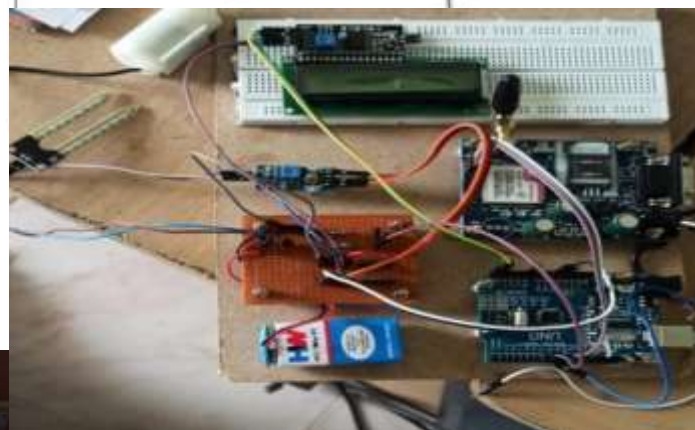
IV. FLOW CHART
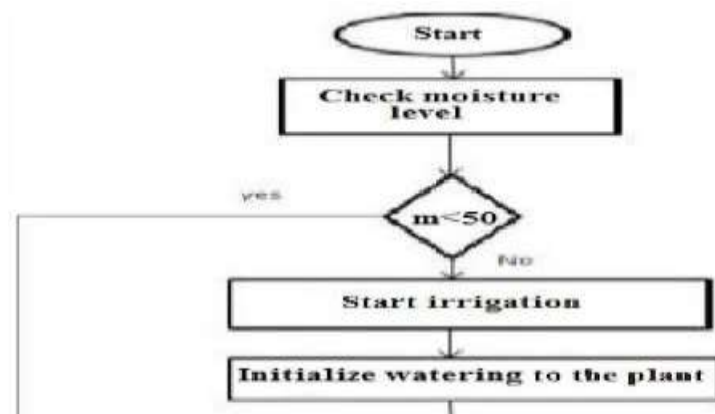
RESULTS OR

V. FINDINGS

(i)project Setup

LCD Display When pump is ON

Soil is dry so motor is on. Sensor value is given.

Sensor value when soil is wet

Message alert in   **mobile**

VI. CONCLUSION

In these days, farmers, in particular, are having major difficulties watering their agricultural fields, owing to a lack of a proper notion of when no energy is available a decent technique to pump water. Even after that, they wish to attend the sphere is well hydrated, which prevents them from conducting various activities. Here is an idea that is now not only for farmers but also for watering gardens, which senses soil moisture and switches the pump mechanically while the energy is turned on. This project advanced an automated watering machine using Arduino. The prototype of the version performed admirably when tested on special soils. The additives we utilise within the machine are easily accessible and simple to use. As a result, this machine serves as a green irrigation solution. This is significantly greater than the labor-intensive and time-consuming guide watering approach. This task is typically intended for farmers and gardeners who no longer have time to water their plants. It also applies to farmers who use irrigation to generate wastewater. The assignment could be expanded to greenhouses, where guide supervision is minimal. This principle may be difficult to implement in order to create completely computerised gardens and farmland.

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