Spontaneous Exposure of Aquatic smooth on Turfs via IOT

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Abstract: In Agriculture area where farmers won't keep on watch their fields are filled with water all the time. They start the pump to fill water to the fields and leave until with a calculation of hour basis. But, in short time the fields are full and the crops are ready to get excess of water. Too much of water make the crops sick and fall soon. Our proposed work, designing a IOT based board to control the water level on the field with the help of water level sensor and automatic walls which block water as well as drop water when it exceeds level. Motor pump connected to the board where it senses level of water sensor and send a message back to the motor to turn off. It doesn't need any manual operation to switch off your motor when fields are filled. Once motor is ON, the water started to flow on fields and walls will block if water is enough for the fields. These lead us to avoid unwanted crop damage on an aquatic area with spontaneous discovery of smooth over fields.

Keywords: Agriculture, farmers, crops, water level sensor, IoT.

1. Introduction

Agriculture is a blooming nature of India where every state manages some sort of variety in farming with different food items. State wise survey takes every crop like wheat, paddy, sugarcane etc., are cultivating for a set of periods where it moves on to cut after crops grown efficiently. Not all the time same crop going to cultivate, each set of seasons wise the crops are cultivated with difference on state wise [1]. Tamil Nadu will not provide the same way of Kerala farming like tea, coffee leaves on large scale. Rice production is also differing from one state to another where the size and quality will not be the same on market [2].

When it comes to farming, the crop level management is necessary to take care of each crop on a right time season with correct feed of materials to grow and on time watering is also necessary for managing different variety of crops [3]. Water management is difficult to split the works, where farmers cultivate different crops on different fields. Watering crops on the same time cause sick where some crop need little amount of water and other needs more. But, managing manually takes lot of time to be spend to check the level of water on each field and managing it with cutting some space on fields to take out some water [4].

Now days, technology emerged on market on different areas even in agriculture. So, this management and all going to be done automatically with variety of sensors where it checks the soil status using soil sensor whether it is dry or moisture. Even with vibration sensor, the theft detection on motor room is monitored and alternate solution of intimation is passed to owner of farm. So, it will be helpful for entire agriculture field without any manual progressing on watering and making some authentication [5].

2. Literature Survey

The study's goal was to create a programmable microcontroller chip that would autonomously manage watering depending on soil moisture sensed by a household soil moisture sensor. This instrument determines whether or not the soil is dry. Farmers no longer need to water by hand. The gadget, in addition to assisting farmers, may be deployed on plantation, soil and crop nurseries, urban parks, hotels, workplaces, and in residences with parks or plants that require frequent watering [6].The experiment approach was employed in the investigation of Automatic Drip Irrigation system in The Plants Mansion - Employing Arduino Microcontroller. Some of the phases that must be addressed include the conceptual design, the development/manufacturing level, and the implementation stage. Following that, the product is tested by putting certain previously stated variables to the test [7].

Usually, the trees should be irrigated couple of times a day, in the dawn and dusk. As just a result, the controller must be programmed to water the yard or farms approximately twice each day. People appreciate plants, their advantages, and the satisfaction that comes from caring for them. Nevertheless, most individuals find it difficult to stay healthy and living. To meet this problem, we created a prototype that allows a plant to become more self-sufficient by watering itself from a big water tank and feeding itself with artificial sunshine. The pro-To type reports its present state and urges the client to fill the storage tank [8].The procedure begins with the sensor detecting soil moisture. If the soil moisture value is between 30% and 35%, the gadget initiates the watering function by opening the solenoid valve valve to drain water to the pipe. When the soil moisture level exceeds 35%, the gadget turns off the irrigation function. ThingSpeak IoT platform is used to visually present humidity content statistics [9].

The suggested system in [10] monitors and maintains main gardening quantities: moisture in the soil content and illuminance. This is accomplished through the use of moisture in the soil sensors and intensity of light sensors. The monitored data is continually transmitted to the Thingspeak web IoT cloud. The data collected from the system is processed in the cloud, and when a specified threshold of soil moisture is achieved, an action is sent through the server to the garden's autonomous sprinkler system to irrigation the garden [11].

In this study, a system is created that detects the soil moisture content of the plant and turns on the motor to water it when necessary. By watering itself, this technique makes the plant more self-sufficient [12]. Temperature, humidity, soil moisture, and light intensity are all monitored by the system. An infrared sensor is installed to detect any exterior object entering the

field; if an intruder is detected, a buzzer will sound for a few seconds. The motor installed in the field functions both manually and automatically based on the results of the moisture sensor in the soil. The motor changes between the on and off stages of pumping action automatically. The outcomes may be seen in both the web app and the monitor [13]. A Solar Powered Electric Motor is utilized to power the water pump, and an Embedded Controller is employed to provide automated watering of the plants. The moisture in the soil is detected, and the motor operates as a result [14].

3. Methodology

Our implementation, designing a senor-based automation watering system to control flow of water on various fields and checking the level of sensors whether this field is enough. When the motor is ON to fill the water on fields, the senor inserted in fields check the level of water. If the water level reaches its limit, automatically a wall will close the field and drops water on to another fields, when it reaches all fields with enough water. Automatically intimation is passed to the motor switch with a signal of ON or OFF helps better farming on a smart way without any manual monitoring of work during watering fields [15].
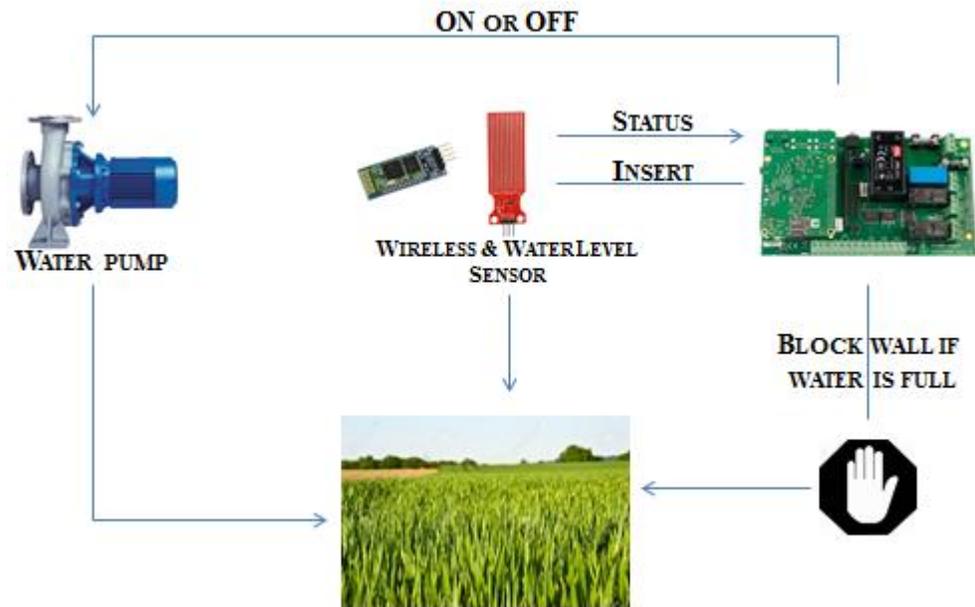
Figure 1: Architecture of the system

In Figure 1, the detailed view our implementation is explained. Here, first the water pump is on to fill water on to the fields. Second, kit is inserted with water level sensor and wireless sensor to send intimation back to the kit. Then, the sensor checks level of water on each field and send a

message back to kit. Where kit receives signal and process action whether to turn off motor or block water for that filled. Each time a field is checked whether it is enough water or need to pass water from that field to another with status action. Sensor analyzes each level and keeps on forwarding the information back to the main board to further proceeding.

With the help of IOT board the process is completely automatic, there is no need of manual monitoring of water proceeding to the filed by calculating hour basis. Just turn on the motor as well as main board to keep on check the status of files simultaneously without any interference. Vehicle water pumps manage the flow of water through a vehicle's cooling system; when the seal on one of these fails, the entire pump must be replaced. Pressure water pumps, which are located within the house or company, manage the water pressure year-round, managing water flow to various regions of the place.

4. **Result and Discussion**

This approach consists of building a sensor-based automated watering system to manage the flow of water on various fields while also checking the level of sensors to see if this field is sufficient. When the engine is turned on to fill the fields with water, the senor implanted in the fields checks the level of water. If the water level exceeds its maximum, an automated wall closes the field and dumps water on neighboring fields until all fields have enough water.

In this methodology we compare the old days of watering standards and current technology update on the domain to initialize a legal way for future work. Manual standards with automatic board functionality increase the standard of improvisation on agriculture areas as shown in Figure 2.
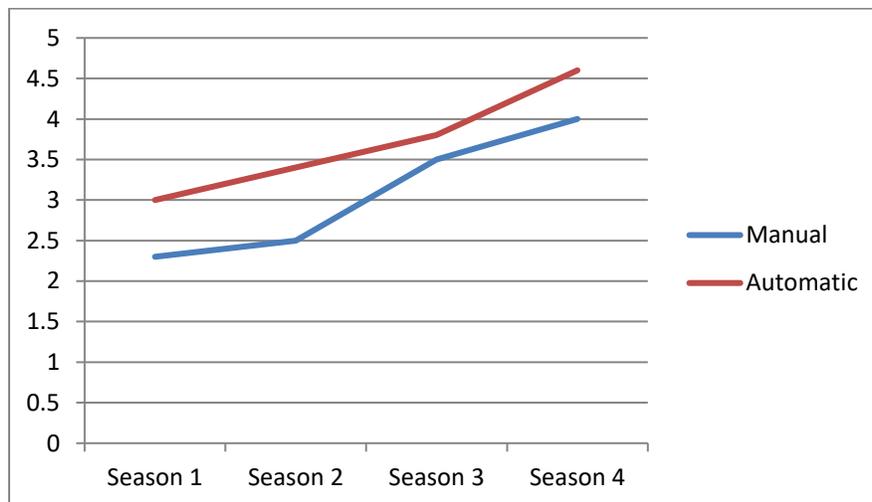
Figure 2: Comparison of Manual and Automatic

As a result, the microcontroller is set to water plants twice a day. The system is created in such a manner that it reports its present condition and reminds the user to fill the tank with water. All of these notifications are sent via a smartphone application. We think that by using this prototype, we may all enjoy keeping plants without worrying about being absent or forgetful. The procedure is totally automatic with the aid of the IOT board; there is no need for human monitoring of water flowing to the field on an hourly basis. Simply switch on the motor as well as the main board to keep track on the status of files without interfering.

5. Conclusion

Once motor is ON, the water started to flow on fields and walls will block if water is enough for the fields. These lead us to avoid unwanted crop damage on an aquatic area with spontaneous discovery of smooth over fields. Finally, manual operations are kept on monitoring with a human being to complete functionalities. IOT based automation watering of crop fields proven with better functionalities without any damage to crops on water level high basis. Improvised method with excess amount of water is blocked and moved on to other fields increased ability to discovering areas. The procedure is totally automatic with the aid of the IOT board; there is no need for human monitoring of water flowing to the field on an hourly basis. Simply switch on the motor as well as the main board to keep track on the status of files without interfering. Automatically intimation is passed to the motor switch with a signal of ON or OFF helps better farming on a smart way without any manual monitoring of work during watering fields.

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