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Automated Irrigation System

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Abstract *- Automated Irrigation uses automation for starting and stopping of supply outlets like water pump, pipelines it helps in utilizing resources efficiently.*

Will help water drought regions to take up small scale farming for necessary crops eventually that can lead for proper agricultural use.

Keywords: Arduino, Soil moisture sensor, DTH11 Sensor, breadboard, motor, Driver motor, water pump.

1. INTRODUCTION

Agriculture in the agricultural area relies on the monsoons for water purposes, or else there is very less water source. In the field of agriculture the irrigation system is used to overcome this problem. In this method the water will be supplied to the agricultural field depending on the soil type. By using the Automatic Irrigation System principle we can discharge the water by motor in the agricultural area, where the farmer is absent. It can save up to 50 per cent water. The new technique introduced in the irrigation techniques is, by which small amounts of water apply to the areas of a plant's root zone. The stress of moisture in the plant soil is avoided by regularly or often daily supplying the necessary amount of water supplies by which the soil's moisture state can maintain fine. You can provide much more specific quantities of water for plants.

2. LITERATURE SURVEY

The new research areas for the man's need that remotely controlled all the electrical devices, anything from home like a security system, air conditioner, lamp, set top and so on. The case of the possibility of remote control and the ability to achieve it at a reasonably low cost has prompted the need to explore it not only for industrial use, but also for domestic or home use. It is an essential home wireless security systems nowadays and is becoming increasingly popular. The capacity of It is a simple project that is more useful in automatically watering plants without human interference. We know that when they go on holiday or sometimes forget to water plants, people don't dump the water on the plants in their garden. There is a risk that the plants will get damaged as a result. This project is an excellent solution for problems of this type. Many irrigation systems are exiting such as rice crop monitoring using GPRS and wireless sensors to use water and electricity efficiently. Wireless sensor Based Remote Agriculture Monitoring System Using ZigBee and GPS. Project for Embedded Drip Irrigation Automation System. A study of GSM-based Automatic Irrigation System. Agriculture Wireless Sensor Networks: For Potato cultivation. GSM based irrigation system design and implementation Using ARM7. Automated irrigation system, using a network of wireless sensors and a GPRS module. Automated device for irrigation , using solar power. Study of field monitoring system based on ARM. Automated regulation of irrigation, using wireless sensor networks. Remote sensing and monitoring of an irrigation system using a network of distributed wireless sensors.

3. METHODOLOGY

It is a simple project that is more useful in automatically watering plants, without any human interference. We know that when they go on holiday or sometimes forget to water plants, people don't dump the water on the plants in their garden. There is a risk that the plants will get damaged as a result. This project is an excellent solution for problems of this type. Most irrigation systems are exiting such as rice crop monitoring using GPRS and wireless sensors to use water and electricity efficiently. Wireless sensor Powered Remote Agriculture Monitoring System Using ZigBee and GPS. Project for Embedded Drip Irrigation Automation System. A study of GSM-based Automatic Irrigation System. Agriculture Wireless Sensor Networks: Potato Farming for GSM based irrigation

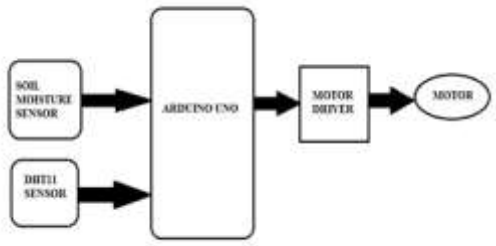
Automated irrigation system, using a network system design and implementation Using ARM7.ofWireless sensors and a GPRS module. Automated device for irrigation using solar power.

4. DESIGN AND IMPLEMENTATION

It is a simple project that is more useful in automatically watering plants, without any human interference. We know that when they go on holiday or often forget to water plants, people don't dump the water on the plants in their backyard. There is a risk that the plants will get damaged as a result. This project is an excellent solution for problems of this type. Most irrigation systems are exiting such as rice crop monitoring using GPRS and wireless sensors to use water and electricity efficiently. Wireless sensor Powered Remote Agriculture

Monitoring System Using ZigBee and GPS. Project for Integrated Drip Irrigation Automation System. A study of GSM-based Automatic Irrigation System. Agriculture Wireless Sensor Networks: For Potato cultivation. GSM based irrigation system design and implementation Using ARM7. Automated irrigation system, using a network of wireless sensors and a GPRS module.

Block Diagram:



4.1 COMPONENTS UESD

1. SOIL MOISTURE SENSOR;-Soil moisture sensor tests the soil containing volumetric soil.

2. ARDUINO;- The Arduino UNO is a Microcontroller open source and developed by Arduino cc.

3. DTH 11 SENOR;- DHT11 sensor for sensing the temperature and humidity.

4. MOTOR: Because of very low current requirement, these motors can easily operate with small batteries and solar panels.

5. WATER PUMP: is used for providing water.

4.2 APPLICATION

1. Efficient resource utilisation.

2. Salt, abrasives, seeds

3. There's no need for full time human attendance.

4. Plants and crops sensitive to moisture and immune to temperature are made healthier.

5. Carbon wastage negligible.

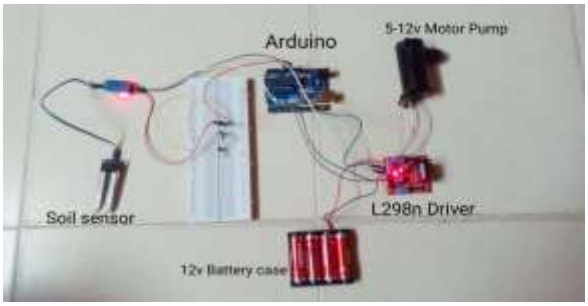
5. LIMITATION

I. Can be implanted only for small farming purpose.
II. Fully depends on hardware devices. Powerful classification measures with an extensive module for report generation.

6. RESULT AND WORKING

We used engine, motor and soil moisture sensor Arduino, DHT11.If the soil moisture sensor senses that there is less moisture in the soil then it sends input to Arduino then this input is sent to the motor driver and then the motor begins to supply the soil water. As the soil moisture sensor senses that there is enough moisture in the soil it will send the input to Arduino and the motor driver will receive this input and then the motor will stop. DHT11 sensor is used for sensing the temperature and humidity.When the temperature rises above 30o C the input is sent to Arduino and then this input is sent to the motor driver and the motor driver starts and then the soil moisture detects enough moisture in the soil then the motor starts.

7. WORKING DIAGRAM:



8. CONCLUSION

For this initiative, the primary applications are for farmers and gardeners who do not have enough time to water their crops / plants. It also includes all farmers who waste water during irrigation. As sources of water become scarce and contaminated, More effective irrigation is required to mitigate water use and chemical leaching. Recent advances in soil water sensing are enabling commercial use of this development. Study, however, indicates that different types of sensors work under all conditions with no negative impact on crop yields, with water usage range reductions as high as 70 percent compared to traditional practices.

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