MINI PROJECT – II
(2021-22)

Smart Irrigation System
(IOT)

SYNOPSIS

Institute of Engineering & Technology

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CONTENT:

About the Project:

In the agriculture field, sensors are used like soil moisture. The information received from the sensors is sent to the Database folder through the Android device. In the control section, the system is activated using the application, this is finished using the ON/OFF buttons in the application. Also, this system is automatically activated when the soil moisture is low, the pump is switched ON based on the moisture content.

The application has a feature like taking some time from the user and water the agriculture field when the time comes. In this system, there is a switch used to turn off the water supply if the system fails. Other parameters such as the moisture sensor demonstrate the threshold price and the level of water in the soil.

Motivation:

For continuously increasing demand and decrease in supply of food necessities, it's important to rapid improvement in production of food technology. Agriculture is only the source to provide this. This is the important factor human societies to growing and dynamic demand in food production . Agriculture plays the important role in the economy and development, like India . Due to lack of water and scarcity of land water result the decreasing volume of water on earth , the farmer using irrigation.

Future Scope:

Our project can be improvised by adding a Webscaper which can predict the weather and water the plants/crops accordingly. If rain is forecasted, less water is let out for the plants. Also, a GSM module can be included so that the user can control the system via smart phone. A water meter can be installed to estimate the amount of water used for irrigation and thus giving a cost estimation. A solenoid valve can be used for varying the volume of water flow. Furthermore, Wireless sensors can also be used.

Technology Used:

a) Hardware:

- Soil Moisture Sensor
- Temperature Sensor
- Relay
- Servo Motor and Rotating Platform

b) Software:

- Arduino
- Blynk app

c) Language Used:

- Python programming language

Advantages Of The System:

This technology is recommended for efficient automated irrigation systems and it may provide a valuable tool for conserving water planning and irrigation scheduling which is extendable to other similar agricultural crops. Maximum absorption of the water by the plant is ensured by spreading the water uniformly using a servo motor. So there is minimal wastage of water. This system also allows controlling the amount of water delivered to the plants when it is needed based on types of plants by monitoring soil moisture and temperature.This project can be used in large agricultural area where human effort needs to be minimized. Many aspects of the system can be customized and fine tuned through software for a plant requirement.

Conclusion:

In the present era, the farmers use irrigation technique through the manual control, in which the farmers irrigate the land at regular intervals [5].This process seems to consume more water and results in water wastage. Smart Irrigation System DOI: 10.9790/2834-10323236 www.iosrjournals.org 36 | Page Moreover in dry areas where there is inadequate rainfall, irrigation becomes difficult. Hence we require an automatic system that will precisely monitor and control the water requirements in the field. Installing Smart irrigation system saves time and ensures judicious usage of water. Moreover this architecture uses microcontroller which promises an increase in system life by reducing power consumption.

Reference:

www.goggle.com
www.tutorialspoint.com