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A Review on Iot Based Irrigation System

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ABSTRACT

Agriculture plays important role in the development of agriculture country. Difficulty regarding agriculture have been always hamper, slow down the development of the country. The only solution to this difficulty is advance agriculture by modernizing the present traditional system of agriculture. The underline feature of this project incorporate advance IOT module based controlled to perform function like moisture sensing, spraying, and irrigation. It incorporate advance irrigation with advance command, control intelligent and alert decision making based accurate real time area information. Even with the advance made in the application of IOT based agriculture having important opposition to control this condition incorporate; first is combination of current IOT solution by IOT based architecture, platform and standards. Second is up scaling the usage of correspondence IOT technologies afar early adapt mainly the simplification of current solution and make it reasonably for end users.

Keywords: ATmega328p, IOT module ESP8266, dry/wet sensor.

I. INTRODUCTION

Agriculture is the major pillar of Indian economy. Bulk of the obtainable fresh water agency are use in agriculture. In India most of the irrigation arrangement are handled physically which is not automated. In the recent year automated and semi-automated system been developed for irrigating the area which has replaced the traditional agriculture mechanism. The current irrigation methodology choose employ constant water handling which is not optimal. So properly technologies being put in towards agricultural observing which is required by farmers. In addition to employing technology in observing the agriculture for automating the irrigation structure there is need for some intelligence which permits machines to put in some intelligence in understanding agricultural information expressed and properly and study information towards predicting the output rather than following traditional command based algorithm. So it is clear that wireless base system and machine learning have been employed in agricultural monitoring pertaining to crop selection and yield, crop disease prediction.

India is agriculture oriented country. In this different tools and techniques are available for

development of farming. As we know that the population is increasing day by day so there will be more requirement of food on earth. To meet this demand farmers and agricultures are turning towards internet of things for greater production capabilities. Internet of things can play a big role in increasing productivity, obtaining huge global market idea about the trends of crops. Internet of things is a network which can be used without human involvement.

Today many agricultural industries are turned to internet of things based for smart farming to enhance the productivity, global market and other features like less human efforts ,time and cost.

As we know traditional farming will damage the production and less grains are taken out by the use of traditional farming. So, we cannot reach the demand up to that level. That's why industries are moving towards IOT base technology to have a smart farming and to get a more production. Focusing on encouraging innovation in agriculture, smart farming is the answer to the problems that this industry is currently facing all this can be done with the help of smart phones and IOT devices. By the use of this farmers can get any data and information and can monitor his agriculture sector.

II. PROPOSED SYSTEM

India is agriculture oriented country. In this different tools and techniques are available for development of farming. As we know that the population is increasing day by day so there will be more requirement of food on earth. To meet this demand farmers and agricultures are turning towards internet of things for greater production capabilities. Internet of things can play a big role in increasing productivity, obtaining huge global market idea about the trends of crops. Internet of things is a network which can be used without human involvement.

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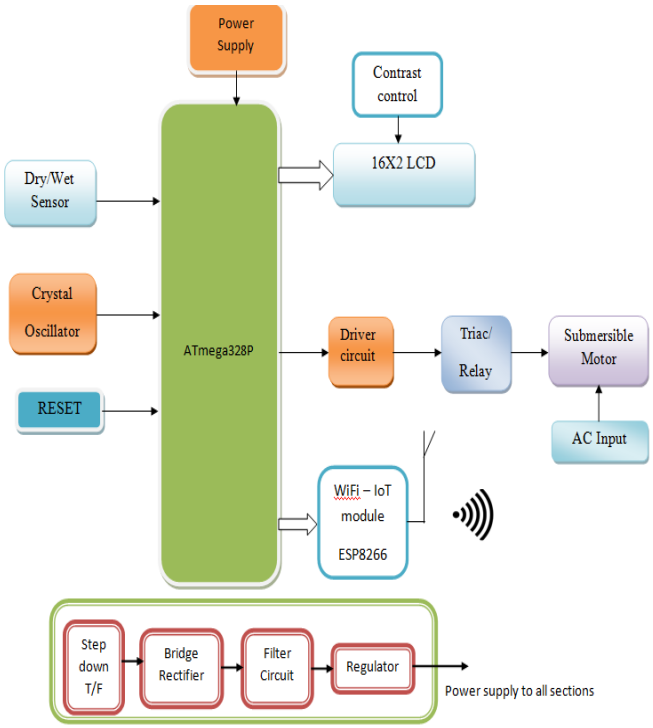

Figure 1. Proposed Iot Based Irrigation System.

Figure 1.1 the irrigation switch using atmega328p is plan to tackle the difficulty of agricultural section respecting irrigation system with available water resource. Prolonged periods of dry climatic problems due to variation in annual precipitation, may considerably reduce the supply of the cultivation. The outgoing in establishing many of this crops and their relative intolerance to shortage of water make an effective irrigation system a necessity for profitable enterprises. In this project we are using ATMEGA328p, Moisture sensor, AC submersible pump. A submersible motor will get switched ON/OFF depending on the volumetric water content soil moisture condition and status of motor can be displayed on 16x2LCD. An IOT module is interfaced to the controller to update the information in the web server about the condition of the area.

III. OBJECTIVE

a) To improve the implementation of the IOT switches with the help of atmega328p processor
b) To design and implement the WIFI system with help of sensor and display LCD 16*2
c) This design and implementation of IOT which helps to maintain the water management with the help of sensor.

The main objective to perform this IOT based advance farming to get a good amount of production with less human effort and climatic distortion.

IV. RELATED WORK

The sensors and devices which are interconnected to each other with one central server via wireless communication [1].The IOT combines the ideas internet and things and can therefore semantically be defined as a world-wide network of interconnected object uniquely addressable, found on standard communication protocol. For agriculture in usual several papers focus on accurate agriculture or sensing and monitoring the production environment[‘2].The main responsibility of sensing layer is to achieve automatic and real time conversion of the physical amount of real-world agriculture production into digital information that can be processed in virtual word through various means[3]. Sensor based paddy growth monitoring system [4] been developed by researchers kit toward improving the rise productivity. The structure has been considered to be cost effective as well as long-lasting at outdoor operation.

V. METHODOLOGY

a) Hardware

1. To propose overall architecture for irrigation.
2. To design printed Circuit Board (PCB) Layout for irrigation.
3. Hardware implementation of Microcontroller (ATMega328P), Wi-Fi module (ESP8266) on PCB.

b) Software

1. To develop a C++ code for SPI communication between sensor node and Microcontroller in arduino IDE.
2. Log the sensor data onto Thing Speak (Open source data platform and API for the Internet of Things). Continuous monitoring of real time data.

VI. CONCLUSION

Lot of structure been developed employing wireless sensor in monitoring and predicting the soil condition for irrigation the area. In addition machine learning techniques been employed

towards yield supply and crop disease prediction only. Now with the advent of Machine to Machine Communication (M2M) which involves devices to communicate among themselves in taking action, we here have developed an intelligent IOT based Automated Irrigation system. By the system, the farmer will get more advantages in their production and they will get less difficulty while performing this structure, with the help this system they will get much closer to the advance farming.

VII. FUTURE SCOPE

1. IOT will derive the future technology, with various innovation and creative product.
2. The IOT can be used different section, the IOT based smart home will save power consumption up to 10%.
3. Following subscription show three example of the IOT trend will matter;
    a) Low power sensing unit.
    b) High efficiency in connectivity.
    c) Reliable communication.

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