ATOMIZATION ON AGRICULTURAL – MODEL DESIGN FOR SMART AND EFFECTIVE PROCESS

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ABSTRACT: To bring modern technology for making agriculture more effective and better productive, this research work focused mostly on smart automation with renewable source utilization. Considering the primary parameter deals with ongoing agriculture process, authors presently look into soil moisture, temperature, and humidity to have better control over the production process with technology based monitoring system. Arduino micro controller execute all internal operation for a required decision to take care over the parameter consider will perform its operation internally. The required power supply is wisely connected to solar panels in this units in build. Based on present soil moisture sensor output, the required water pump be activated till the desire value of moisture to help the crops grow. In similar way any variation of temperature sensor associated with it also support the Arduino to take decision for continual of water pump activation so as to keep the plant growing unaffected.

KEYWORDS: Micro controller, moisture and temperature sensor, , output devise motor drive and buzzer.

I.INTRODUCTION

Agricultures has a great role in India on developing of nation. Since there is a large variation of soil and weather all around the country, the contribution of modern technology is highly necessary it is observed that even many more available technology can be consider effect utilization on upgrading agro tech. Hope bringing technology closer to agriculture use can help the farmers from bad effect of weather or the soil for the crops need[1] Since water monitoring is one of the important factures on successful crops, this work mostly focused on this only which save the misutilization of water along with keeping the crops better without shortage of water. This propose devise monitor the irrigation based to the moisture of soil and temperature surrounding and more useful to the farmers.in perfect monitoring water over thr crops may deuterated the production and bring many more losses to agriculture Hence necessity of proper technology for providing required water at require time with quantity is need of day on developing agratulter process. [2]. On this connection a programmable water control system is best possible solution, since it can provide water based to moisture of soil and temperature of surrounding. A programmable drip water irrigation system is recommended as it monitor irrigation abs to plant need and also save from waste water. This system has on of system by seloinod valve which operate as per program instruction by controller associated to device used. To make the available system more effective, the controller is connected to many possible sensors use to provide valuable information to the controller helping to take decision by controller. [3].the computerized water harvesting and irrigation is fulfilling most of the need as agriculture need to sustain but it needs skill operator , which is not possible in agriculture at any point of time. It is observed the programmed Drip irrigation technology checked the soil status along the need as per present weather, but this system is more effective to specific cropper

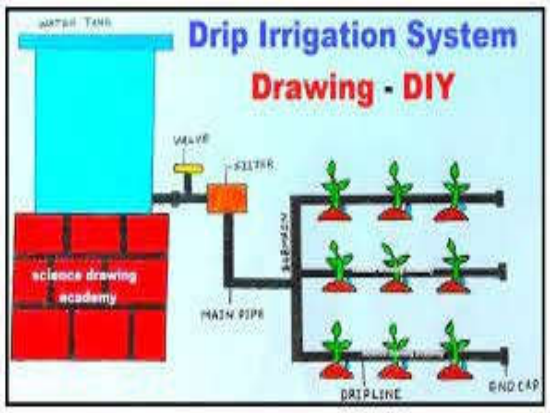
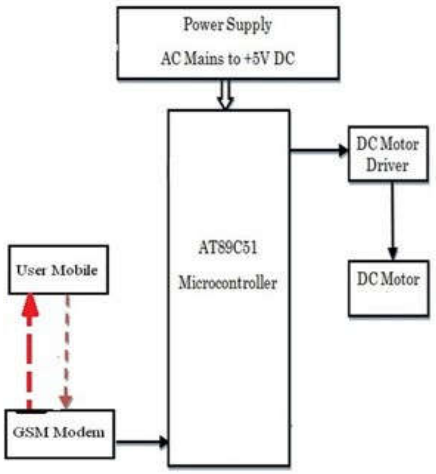


Fig 1. Drip irrigation system

The traditional 8051 micro controller fulfil the basic need on all automation system and since its operation efficiency is tested and output provides a better as need, it presently a universal accepted micro controller. When we talk about the application of with respected to soil moisture observation and corresponding work for support to drip irrigation is a good step towards modernization agriculture equipment's.



.fig 2, basic implementation of 8051icro controller

At present, work sparing and water-sparing innovation is a key issue in farming. There have not been any noteworthy innovative progressions being made in agrarian segment when contrasted with different parts. Agrarian framework should be observed all the time. The utilization of this paper is to diminish the wastage via robotizing the whole farming framework.

In the most recent years we've seen the development of an uncommon importance to the farming Information frameworks. This significance is reflected in the usage of frameworks for the preparing and treatment of rural land and items and the utilization of data frameworks to impact horticultural profitability [5]. It can take better choices with respect to arrive, work, domesticated animals, capital and the executives. Horticultural profitability can without a doubt be improved by pertinent, dependable and helpful information, data and learning. Henceforth, the making of rural data (by expansion administrations, look into, training designs and others) is presently frequently overseen by horticultural associations that make data frameworks to disperse data to agriculturists so ranchers can settle on better choices so as to exploit showcase openings and oversee constant changes in their creation frameworks.

RELATED WORK

The current development on remote sensing technology which contribute a closer and point to point focusing over the parameter of consideration. Its multi direction and multi technique baserd system presently one of the most useful system which too can be adopt in agraculter technology development .With proper organization of sensors ,execution over microcontrollee and complete the required activities by out put device with present data on board and necessary correction to optimize the operatrion

. Such systems are frequently conveyed in asset compelled situations, for example with battery worked hubs running underneath. These requirements direct that sensor arrange issues are best drawn closer in a threatening way, by mutually considering the physical, systems administration, and application layers and making real plan tradeoffs over the layers. Significance of computing water level in a ranch features the expanding requirement for trend setting innovations to help screen water and oversee water quality.

. What's more, present day remote innovation can especially improve the proficiency of information accumulation and horticulture systems, when contrasted with the customary tedious and work serious manual practices

. The examination on temperature remote checking and cautioning framework in nursery had effectively been done, which lead to the improvement of a solid and practical framework. The proposed framework uses remote sensor for temperature level identification just as GSM and SMS innovations for sending ready warning message to the ranchers.

The exploration could be reached out to incorporate progressively natural factors to be observed in the agrarian nursery which identify with the augmentation of leafy foods efficiency. For instance, other than temperature, the dirt and water sharpness level in the nursery additionally assume imperative job to the nature of organic products.

The Precision Farming is the combination of another administration point of view with the new and rising data and correspondences advances prompting higher yields and lower costs in the running of expansive scale business rural fields. Accuracy cultivating guarantees faster reaction times to unfriendly climatic conditions, better quality control of the produce but then a lower work cost. Rising remote advances with low power needs and low information rate abilities, which flawlessly suites accuracy. horticulture, have been created. The detecting and correspondence should now be possible consistently prompting better reaction times. The remote sensors are sufficiently shabby for wide spread sending as a work system and offers strong correspondence through repetitive engendering ways.

EXISTED SYSTEM

Michele Magno introduced agriculture monitoring system using wireless sensor network (WSN). The conditions can be monitored in real time are temperature, light intensity, and humidity. The experiment involves the hardware and software design of the built modules, network topology and network communication protocol with the challenges.

Design explains how the node can achieve agricultural condition information collection and transmission. The system is compact in frame work, light weight, good in performance and operation. This research deals with hardware and the software of the network coordinator node and the sensor nodes. The theoretical and practical results show that the system can efficiently capture greenhouse environmental parameters, including temperature, humidity, and carbon dioxide concentration between nodes and the network coordinator, good network stability. The implementation explored values used in the complex greenhouse environmental monitoring.

L. S. Kumar have introduced the transition from precision agriculture to modern agriculture in China. The agriculture intelligent system was based on IOT which is introduced for organic melons and fruits production and quality. Many of the technologies were used in the system, such as RFID, sensors and etc., The system contains three platforms to monitor agriculture and fruits. The intelligence agricultural system based on internet has been applied to the melon and fruit production, it plays a role which is not only that the farmers have lesser working hours, but also to improve the ability to save costs, improve the quality of fruits. But these are existed in past decades. To monitor the water level in agriculture system a new system is proposed which is discussed in below section

PROPOSED SYSTEM

The below figure (1) shows the block diagram of proposed system. In this soil moisture sensor, temperature sensor, Humidity sensor, LDR sensor, crystal oscillator, Arduino, solar panel, LCD display, water motor devices are used. Solar based water system is to be utilized for sparing enormous amount of water from going wastage

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. whenever there is change in temperature then temperature sensor activates and switches on the motor1. When the soil moisture level sensor will gets low then water content is constantly judged and a signal is sent by the system to motor to turn on. After reaching to the upper threshold level, the motor automatically stop its operation. whenever there is change in level of humidity then humidity sensor activates and switches on the motor 2

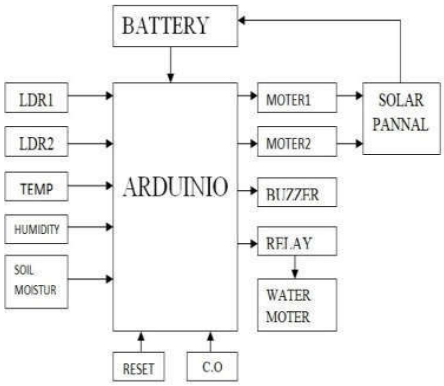


Fig. 3: Proposed System

Water Level sensors are used to detect the level of substances that can flow.Such

Structure can be modified and use for similar to liquid and semi liquid including slorry n recent times . in connection to available irrigation process this proposed model can regulate the pump by remote location and some time if required self regulated aslso. This model definitely fulfil need of farming and support to precision farming..this also modified in to farmers information shearing and warning facilities..self regulation and informating processing is a best solution to all existing irrigation automation processfarmers having different quality of land,corresponding nature of cropes, protection and prevention too can beavaible with.

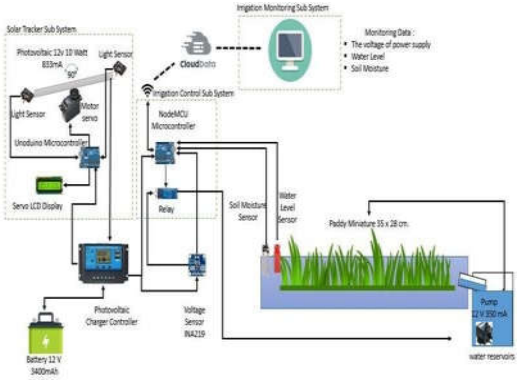


fig.4 physical structure of proposed model

This module is provide a greater solution for its has a text exchanging receiving capability.provisions.

RESULT

Fig. 2: output-1

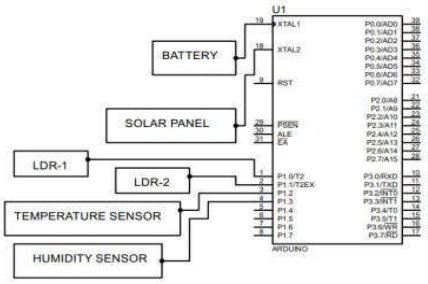


Fig. 3: output-2

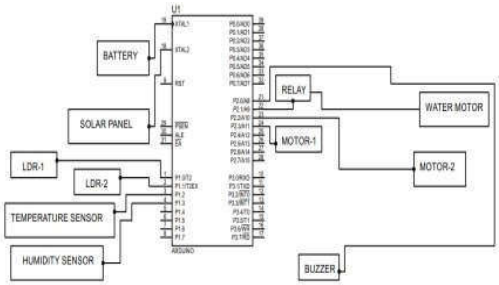
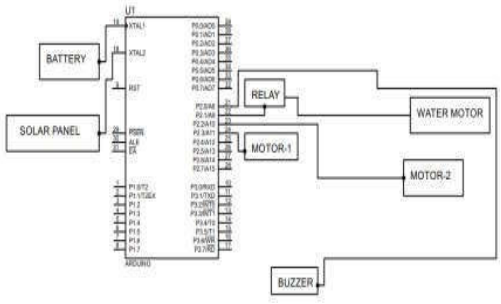


Fig. 4: output-3



CONCLUSION

In this project, the design and implementation of smart agriculture with efficient utilization of solar energy is presented that produces outcomes that are trustworthy and effective. When moisture levels fall below the recommended level, remedial action is initiated. The suggested method will provide correct modifications, and it forbids users from using less human power in the wireless sector.

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