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Automatic agriculture irrigation system

smart irrigation system

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Abstract:- **This paper describes the automatic control of motor pumps by checking the level of well and bore well as a source for irrigation process. It prevents motor from dry running, single phasing and over loading. This paper describes the automatic controlling and monitoring the level in well and bore well using global system modeling network. Level sensor is used to check the level in well and bore well. after checking the level controller sends the information to the user, depends on the level in the both well and bore well the user sends the message to the controller to turn on and off the motor using global system modulation network.**

I. INTRODUCTION

Horticulture is a subsistence of dominant part Indians and has extraordinary impact on the economy of the nation. In nation like India, where climatic conditions change economically and water system offices are poor. The principle hotspot for water system process is ground water. These days, ground water level is diminished drastically in request to remunerate this issue agriculturists are utilizing both well and bore well to use ground water. This venture proposes a water level sensor joined to a remote gadget at each place where the water must be observed when the engine is exchanged on the sensors are initiated and the fields are inundated naturally. Once the water achieves a specific level which may even take hours, the framework finds a way to manage or even stops the water stream. The venture helps in valuable sparing of water and power.

II. RELATED WORK

In Rafael Munoz-carpena and Michael Dukes "Programmed water system in view of soil dampness for vegetable yields" favorable position of this undertaking this can be altered effectively setting and moving sprinkles isn't required. This framework secured misuse of water, Time and collect, if not introduced appropriately.

In Mansour "Effect The Automatic Control of Closed Circuits Rain weapon water system framework On yellow corn Growth and yield "This exploration paper arrangements of programmed control of shut circuits dribble water system framework on yellow corn harvest and salt filtering prerequisite and take more power.

In Purnima S R.N Reddy," Design of Remote Monitoring and Control System With programmed water System utilizing GSM Bluetooth", Proposed misleadingly providing water to arrive where crops are cultivated. traditionally hand pumps, waterway water and precipitation were a noteworthy wellspring of water supply for water system. This strategy has prompt extreme downsides like underground water supply for water system. This technique has prompted extreme downsides like under water system, over water system which thus causes filtering and loss of supplement substance of soil .changing natural conditions and deficiency of water have prompted the requirement for a framework

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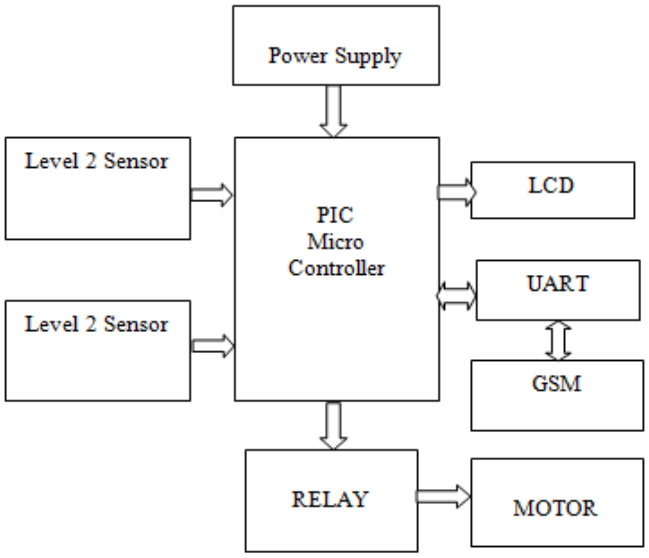
which productively oversees water system of fields. Mechanized water system framework is a machine based framework, which computerizes the water system of land by joining different programming and equipment or field water system framework. This paper manages a definite study of different GSM based computerized cultivate water system frameworks GSM fills in as a critical part since it is in charge of controlling the water system framework and send them to recipient through coded flag. Our examination is focused on correlation of different GSM approaches.

To defeat this disadvantage, the controlling and observing the level in well and bore well. In the wake of checking the level controller sends the data to the client, relies upon the level in the both well and bore well the client sends the message to the controller to kill on/the engine by utilizing GSM organize.

III. PROPOSED WORK

The project proposes a water level sensor joined to a remote gadget at each place where the water must be observed. At the point when the engine is exchanged on the sensors are actuated and the fields are inundated naturally. Once the water achieves a specific level which may even take hours, the framework takes proper strides to direct or even stop the water stream. The undertaking too houses a GSM modem where the client can without much of a stretch be told by any blame in the framework or if all fields are appropriately flooded or if there is no adequate water in the well. The same can be utilized to switch on the framework and off by basically sending a SMS. This proposed framework controlled by PIC16f877a microcontroller. The client can even timetable the time when the field must be flooded and this even levels when the client neglects to turn on the field precisely at the required time. This aides in valuable sparing of water and power and facilitates the activity of the individual. The task can be utilized as a part of expansive rural grounds, coconut manors and numerous different estates and even in home condition or enterprises and universities where there are substantial greenery enclosures to screen and water them consequently.



IV. COMPONENTS

A Microcontroller is an utilitarian PC framework on a chip. it contains a processor center, memory and programmable information yield peripherals. Microcontroller incorporate a coordinated CPU, memory and peripherals equipped for info and yield. Microcontrollers are utilized as a part of naturally controlled items and gadgets.

PIC Microcontroller

These microcontrollers are generally utilized microelectronics applications. A PIC controller incorporates all kind of cutting edge interfacing ports and memory

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modules. As like typical microcontroller, the PIC chip likewise joins a microchip unit called CPU and is incorporated with different kind of memory modules, input yield ports, clock/counter, correspondence ports, and so forth. All PIC microcontroller family utilizes Harvard design. This engineering has the program and information got to from isolated recollections so the gadget has a program memory transport and an information memory transport. This enhances the transfer speed over conventional von Neumann engineering where program and information are gotten from a similar memory. Isolating system and information memory additionally enables guidelines to be measured uniquely in contrast to the 8-bit wide information word.

A. Soil Moisture Sensor

This sensor is one of the fundamental parts of our project. It takes its contribution from soil. In the event that there is less dampness in soil, the sensor would give an Analog contribution to ADC which is a standout amongst the most critical inbuilt highlights of the MSP, tests this Analog info esteem given by the sensor into Digital yield and stores it into one of its registers. This sensor can be utilized to test the dampness of soil is having water stockpiling the module yield is at abnormal state, and else the yield is at low level. By utilizing this sensor one can naturally water bloom plant, or some other plants requiring programmed watering strategy. Module double yield mode, computerized yield is basic, simple yield more exact. Soil dampness sensors measure the volumetric water content in a roundabout way by utilizing some other property of the dirt, for example, electrical protection, dielectric consistent, or communication with neutrons, as an intermediary for the dampness content.

Soil dampness sensors measure the volumetric water content in soil. Since the direct gravimetric estimation of free soil dampness requires evacuating, drying and weighting of an example, soil dampness sensor measures the volumetric water content by implication by utilizing some other property of the dirt, for example, electrical protection, dielectric steady, or communication with neutrons, as an intermediary for the dampness content. The connection between the deliberate property and soil dampness must be aligned and may change contingent upon natural factors, for example, soil compose temperature or electrical conductivity. Reflected microwave radiation is influenced by soil dampness and is utilized for remote detecting in hydrology and farming. Versatile test instruments can be utilized by ranchers or plant specialists.

B. GSM Module

At introduce the GSM module is utilized for Remote Control Activities, for example, Gate control and so forth. GSM/GPRS modem gathered together with control supply circuit and correspondence interfaces for PC

C. UART

A Universal nonconcurrent collector transmitter is a PC equipment gadget for offbeat serial correspondence in which the information arrangement and transmission speeds are configurable. The electric flagging levels and techniques are taken care of by a driver circuit to outer to the UART.A UART is normally an individual incorporated circuit utilized for serial correspondence over a PC or fringe gadget serial port. UARTs are presently regularly utilized as a part of microcontrollers.

D. RELAY

A hand-off is a switch that opens and closes under control of another electrical circuit. In the first form, the switch is worked by an electromagnet to open or close one or

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Vol 3, Issue 4, April 2018

numerous arrangements of contacts. Since a hand-off can control a yield circuit of higher power than the information circuit, it can be considered, in a wide sense to be a type of electrical speaker.

E. Voltage Regulator

A voltage controller is an electric controller intended to consequently keep up a steady voltage level it might utilize an electromechanical mechanism, or aloof or dynamic electric components. depending on the plan it might be utilized to manage at least one AC or DC voltages.

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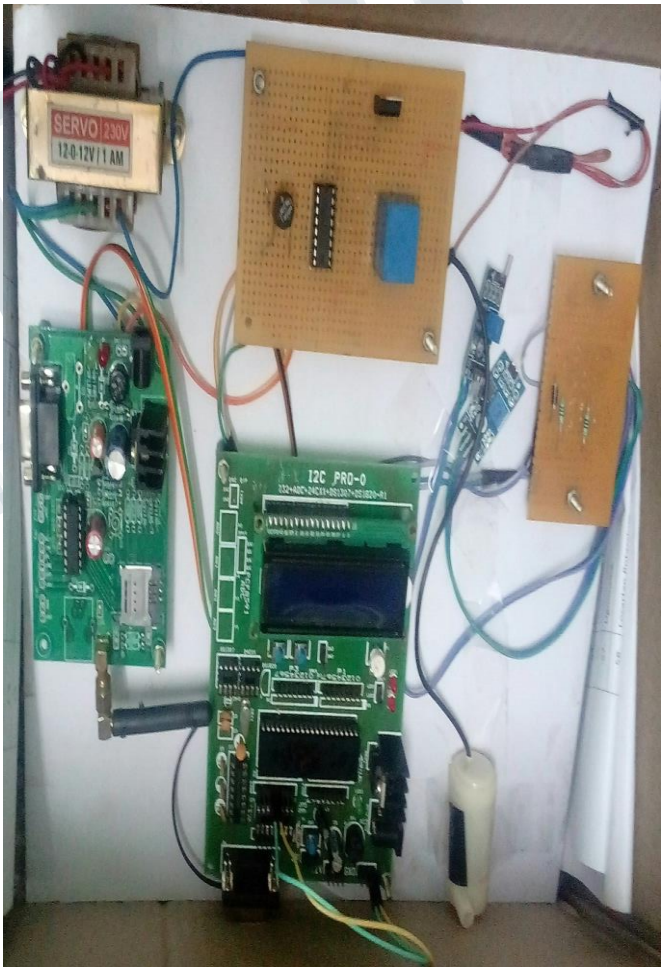
V. RESULTS

In this project it has two sensors these two sensors have three state low, medium, high. if the water is low the motor will ON automatically .if the water cross the medium level then the sensor will sense and automatically OFF .This process can also be controlled by GSM by sending message LON and LOFF .All the components are connected to microcontroller.

LEVEL	**STATE**
LOW	ON
MEDIUM	_
HIGH	OFF



VI. CONCLUSION

The Microcontroller based water system framework turns out to be an ongoing criticism control framework which screens and controls every one of the exercises of water system framework proficiently. The present proposition is a model to modernize the horticulture businesses at a mass scale with ideal use. Utilizing this framework, one can spare labor, water to enhance creation and at last benefit.

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