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# Agriculture Field Motor Control System Based on IOT

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***Abstract:*** ***Now a day's many real time applications are connected to internet. This is very useful and helpful for customers to see application from anywhere in the world. These web connected applications are belongs to server client relation. TCP, UDP and HTTP protocols are used in this concept. Data transfer to web server is done through GPRS .we can transfer large data through this GPRS. At present many Embedded Networking applications are coming under this model only. Villages are the backbone of our nation. The farmers strive hard day and night to yield very good results in their farm. This paper discusses how Internet of Things (IOT) can be used to achieve optimal irrigation by continuously monitoring the water level by using mobile or pc.***
***Keywords: IOT, Water level sensor, fire sensor, field (dry/wet) sensor and Over Flow water sensor***

## I. INTRODUCTION

They know the entire process how to produce a farm and when to provide water to the farms etc. When it is the time to water the farms, they just stop their current works then and they will go to the farms to start the pump sets to water the farms.
This venture gives a fabulous answer for this procedure. The agriculturist require not go to the homestead to water his field. He can sit at his present place and begin the engine ON to water his field.
No cabling or equipment associations are required.
This project is designed in such a way that a GSM modem is interfaced to the controller through serial port along with a motor. The GSM modem performs the task of receiving the message from the server and sending the messages to the server from the controlling unit. If the farmer wishes to water his field, he needs to switch on the motor. Thus, he has to send a signal to the modem from server.
The GSM modem receives this message and intimates the same to the microcontroller. Now it is the job of the controller to switch ON/OFF the motor in accordance with the received message.

### *A. Need of Automatic Irrigation*

Simple and easy to install and configure.

1) By Saving energy and resources, so that it can be utilized in proper way
2) Farmers would be able to damage the amount of water at the right time by using this irrigation
3) Avoiding irrigation at the wrong time of day, protecting from overwatering saturated soils will improve crop performance.
4) Automated irrigation system uses valves to turn motor ON and OFF. Motors can be automatically controlled by using controllers and there is no need of labour to turn motor ON and OFF.

## II. LITERATURE SURVEY

The new vision of decreasing water tables, drying up of rivers and tanks, unpredictable environment present an urgent need of proper utilization of water. The temperature and moisture sensor are used for monitoring of crops.
After the exploration in the horticultural field, scientists found that the yield of agribusiness is decreasing day by day. By increasing the production as well as in reducing the extra man power efficiently the field of agriculture plays an important role
Some of the research attempts are done for betterment of farmers to increasing the agricultural yield .The system described details about the design and instrumentation of variable rate irrigation. By using appropriate software wireless sensor network and real time in field sensing and control. The scenario provides low cost wireless solution as well as remote controlling for precision irrigation. Sensors were placed below the soil they communicates with relay nodes by the using of the communication protocol it providing very low duty cycle and hence increasing the life time of soil monitoring system. The drawbacks of the system were its cost and deployment of sensor under the soil which causes attenuation of radio frequency (RF) signals

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## III. PROPOSED ARCHITECTURE

The users can continuously monitor the water level in the tank, remotely on a mobile/pc through internet by allowing the proposed system. The mobile/pc can be used to shut the water supply automatically, irrespective of the any farmer at the farm because of user having internet connectivity.

Thus the task of switching off the motor manually has been automated. The smart irrigation system can be installed in farms to monitor the water level continuously. It would turn ON the motor automatically when water content of the soil goes below a certain level. The user can check if the farm is well irrigated remotely on the mobile/PC, without visiting the farm.

These systems would improve the livelihood of farmers extensively. Getting of high level information from sensors is one of the most important aspect of IOT. The microcontroller, is the main component of the system, it will store the code and controls the field monitoring.

LCD is used to display the water level. Sensors measure the water level inside the tank, water level at field, over flow of water in field and fire occurred condition .

### A. *Features*

1) The framework underpins water administration choice, utilized for checking the entire framework with GSM(RS-232) module
2) The system continuously monitors the water level (Water level Sensor) in the tank and provide accurate amount of water required to the crop.
3) The system checks the water level in tank and field, Also checks over flow condition and fire occurred conditions in the field.
4) Low cost and viable with less power utilization utilizing sensors for remote checking and controlling gadgets which are controlled by means of SMS utilizing a GSM utilizing android versatile

### B. *Block Diagram*

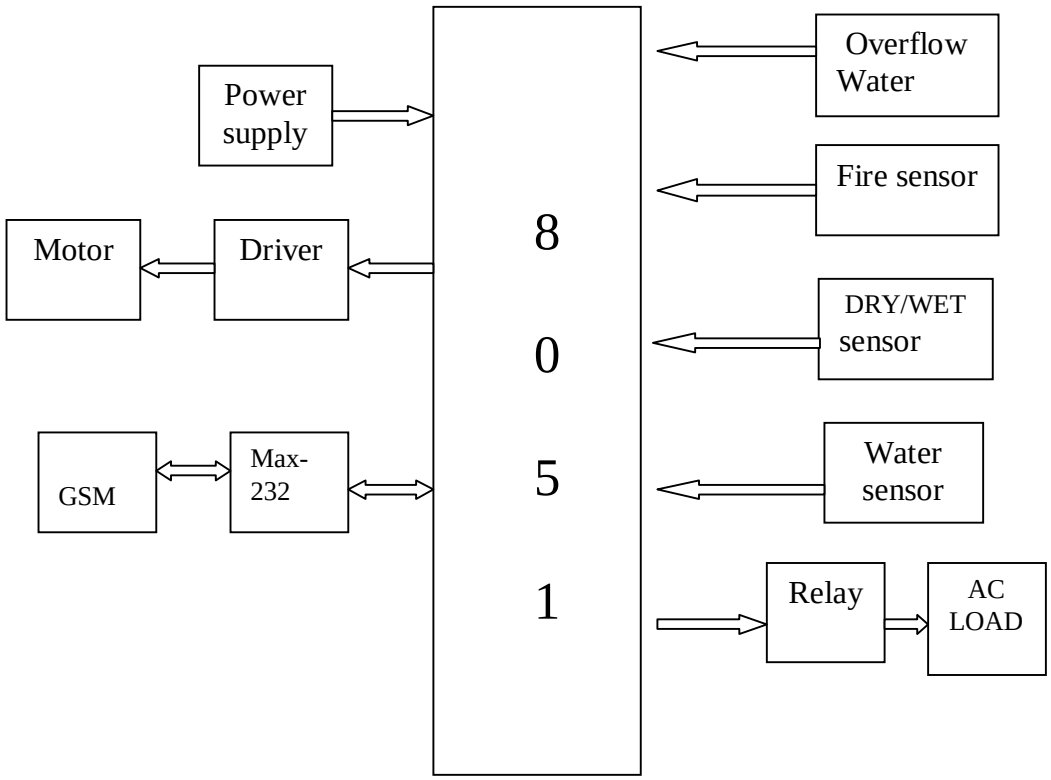


Fig: 3.21 Block diagram of agriculture field motor control system based on IOT

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## IV. EXPERIMENTAL RESULTS

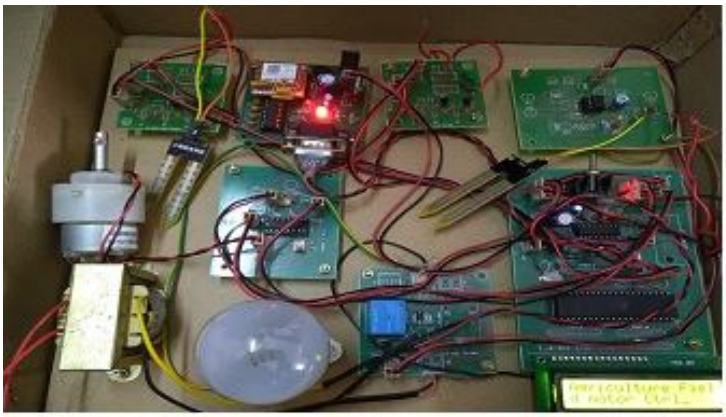

FIG (4.1)**:** circuit for agriculture field motor control system based on IOT


FIG (4.2): Displaying title in LCD


FIG (4.3): Ready to store number


FIG (4.4): Registered number

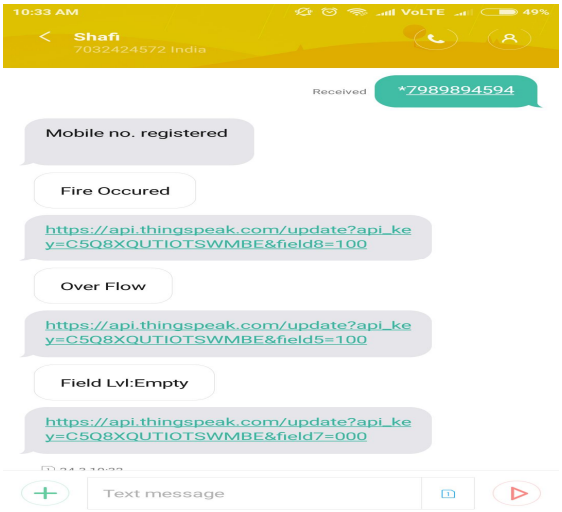


FIG (4.5): outputs & IOT link for fire,overflow,field empty in mobile phone

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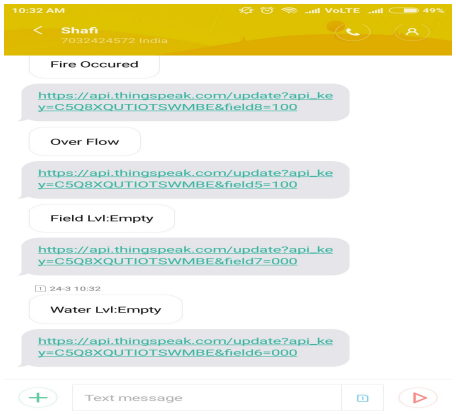


Fig (4.6): output for water level empty in mobile phone

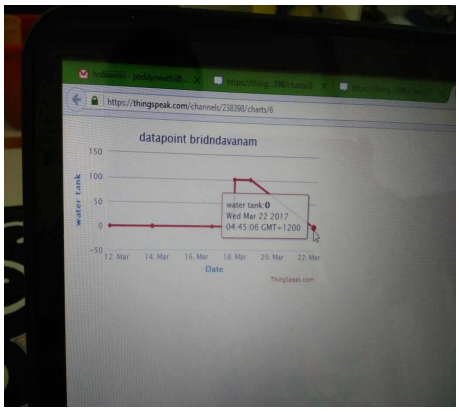


FIG (4.7): output for water tank in IOT

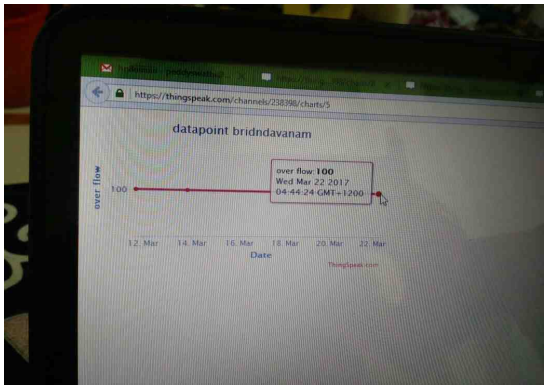


FIG (4.8): output for overflow in IOT

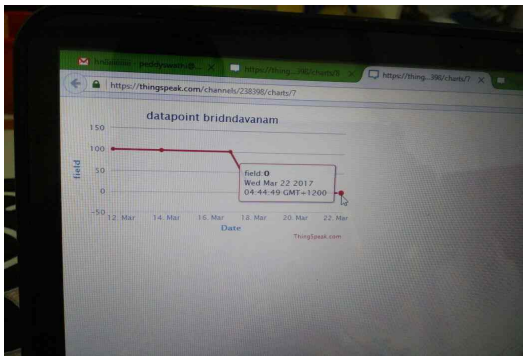


FIG (4.9): output for field in IOT

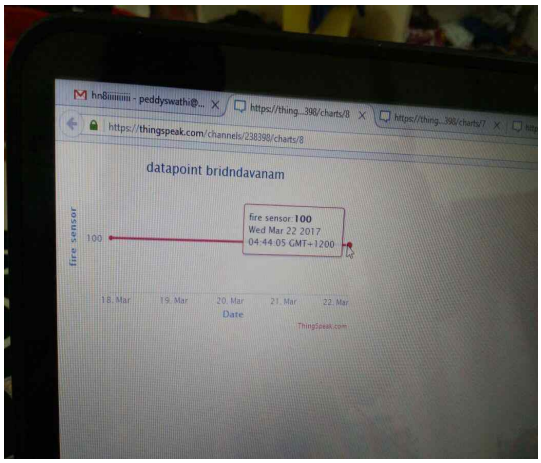


FIG (4.10): output for fire sensor in IOT

## V. CONCLUSION

Automatic water pump control system employs the use of different technologies in its design, development, and implementation. The system used microcontroller to automate the process of water pumping in an over-head tank storage system in fields and has the ability to detect the level of water in a tank, switch on/off the pump accordingly

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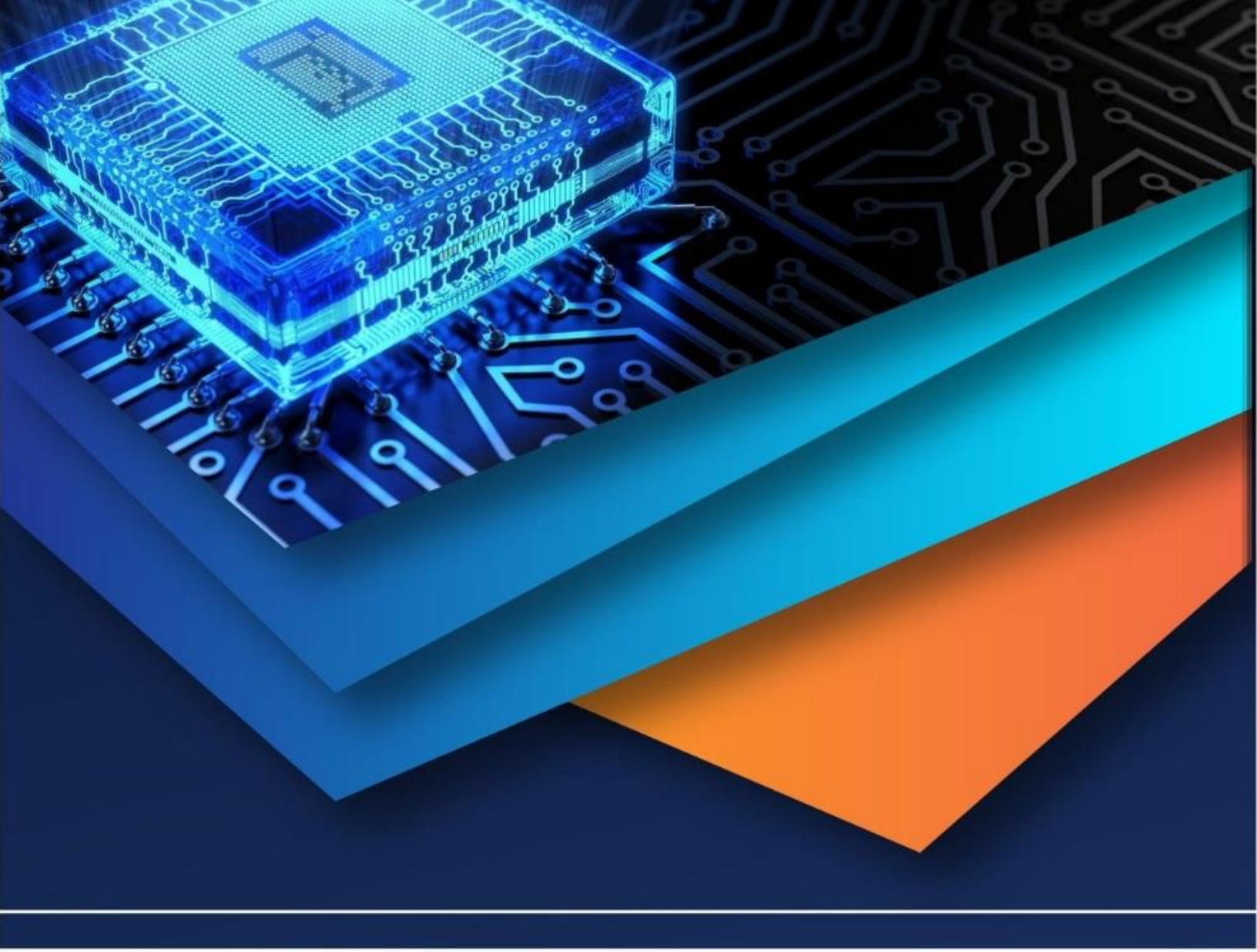

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