IOT Based Crop Selection in Corresponding Lands

B. Susmitha, V Padmanabha Reddy

Abstract: ***Since from long ages the principal occupation in India is agriculture and 70% of the population in India depend upon faming. India earns one third of the national capital income from agriculture only. But due to the climatic problems in agriculture many farmers are migrating from rural to urban and in order to overcome this problem a smart agriculture module using IoT is introduced. To face many challenges in this field of agriculture by the farmers in a wide range, Internet of things (IoT) is remodeled for precision and sustainable agriculture. IoT interconnects various thing-things, thing-human and human-human by comprising sensors that sense the field parameters like temperature, humidity, moisture and water fertility in agriculture field.The sense value are validated and later send to the WI-FI module and from WI-FI module the validated data are sent to the farmer's mobile or laptop using cloud. The farmers are also notified by SMS if the field needs a care. An algorithm is urbanized with threshold values of temperature, humidity, moisture and fertility that are programmed into a node MCU to manage water quantity. Farmer can automate the motor from anywhere in the world using IoT.***

Keywords: IoT, Arduino, Raspberry pi, W-Fi Module, Sensors

I. INTRODUCTION

Agriculture assumes key part in the improvement of agricultural organizations in the nation in India. It keeps on being those sit tight of existence to the lion's share of the Indian populaces. Issues concerning Agriculture need were continuously upsetting that advancement of the particular nation. The main answer for this issue may be keen farming toward modernizing those current accepted techniques of farming. Consequently the suggested system expects during making farming worker keen utilizing mechanization and IoT innovations. Web for things (IoT) empowers Different requisitions crop Growth following And selection, watering system choice support, and so on. A raspberry pi based programmed watering system IOT framework will be recommended to modernization Also enhances gainfulness of the crop.

In day to day world internet plays a basic part in all domains. In the agricultural domains, those recommended strategy will be used to screen those Agriculture fields for those assistance about IoT. Sensors would utilize for analysing those Different parameters to agricultural space in view of the remote sensor system engineering. Done that, the suggested framework is used to gather information those soil properties and it will have a chance to be put away in the cloud database

II. EXITING METHOD

In the existing framework the soil might be tried simply with look at the fruitfulness and the dampness level. It needs to be given of the lab to trying the soil. Farmers would torment significantly with get those ranch grounds study reports rapidly.

III. PROPOSED SYSTEM

To provide that soil trying benefits in those farmers' doorstep by deciding every last one of soil parameters for example, pH, moisture, temperature, stickiness substance to that soil. Carry on with upgrading for website aides those farmers on get will realize that present status from claiming soil. We need aid suggesting those products of the farmer's dependent upon those soil fruitfulness and climatic states.

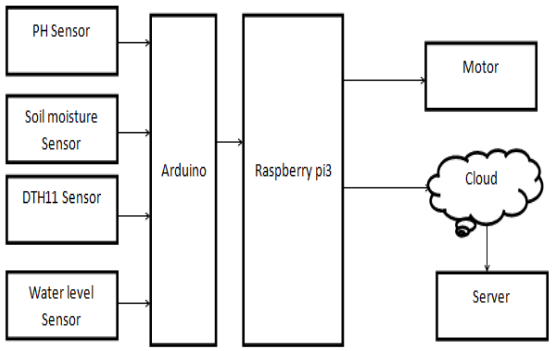

Figure.1 System Block Diagram

Smart agriculture otherwise called precision farming worker permits farmers should expand yields utilizing insignificant assets for example, such that water, compost and seeds. Toward deploying sensors also mapping fields farmers could start will see all the yields during a micro scale, conserver sources and decrease impact in the atmosphere. Advances in sensor technology have also proven beneficial to the agricultural industry through its application for infield soil analysis.

Implementation

The **moisture sensor** can make used to test the dampness about soil, when those soil may be hosting water lack those module yield is during large amount and else those yield is in low level. Toward utilizing the sensor person might mechanization call water the bloom plant, or whatever viable plants requiring programmed watering system?

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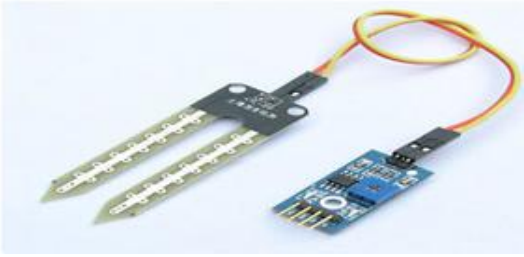

Figure.2. Soil Sensor

Ph sensor

The practically basic system for measuring ph is to operate an electrochemical ph sensor. Blending ph sensors are a category about electrochemical ph sensor to facilitate characteristic both a measuring cathode Furthermore a reference cathode. The measuring cathode detects progressions in the ph worth same time the reference gives a stable indicator for examination.

Figure.3. pH Sensor

PH monitoring is a crucial component of horticulture maintenance for crop health. The best PH for plants is typically between 5.5 and 6.5, though some plants may thrive in more acidic or more alkaline soils.

DHT 11 sensor:

This DHT11 heat Also stickiness sensor offers an in tuned to highly developed sign yield for the heat Also stickiness sensor proficiency. It will be synchronized circuit with a high-octane 8-bit microcontroller. Its engineering ensures the fidelity also phenomenal high power. This sensor incorporates a resistive component and sensor to wet the NTC temperature measuring gadget.

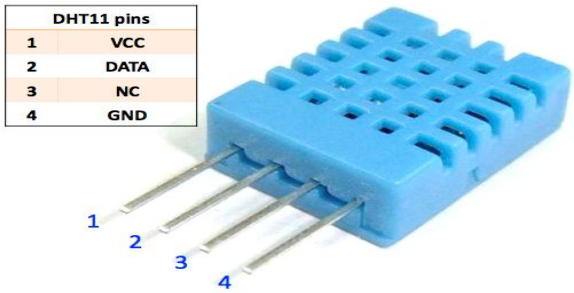

Figure.4. DHT 11 Sensor

LCD Display

Fig.5. 16*2 LCD Display

LCD draws its definition from its name itself. It is combination of two states of matter, the solid and the liquid. LCD uses a liquid crystal to produce a visible image. Liquid crystal displays are super-thin technology display screen that are generally used in laptop computer screen, TVs, cell phones and portable video games. LCD's technologies allow displays to be much thinner when compared to cathode ray tube (CRT) technology.

Relay

The major use of the **Relay** was seen in the record for transmit and receiving the information, that was called as Morse code where the input signals used to be either 1 or 0, these modify in signal were automatically noted in terms of ON and OFF of a light bulb or a beep sound, it means those pulses of 1s and 0s are converted as mechanical ON and OFF using electromagnets

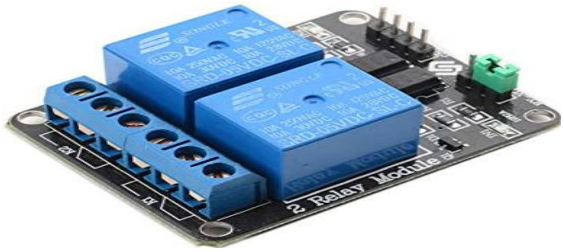

Fig.6.Relay

IV. RESULTS & DISCUSSIONS

The below figure depicts the output of the moisture sensor when there is moisture in the soil/field and Temperature, Humidity,pH values. It shows the water level in the crop and suggest the crop prediction.

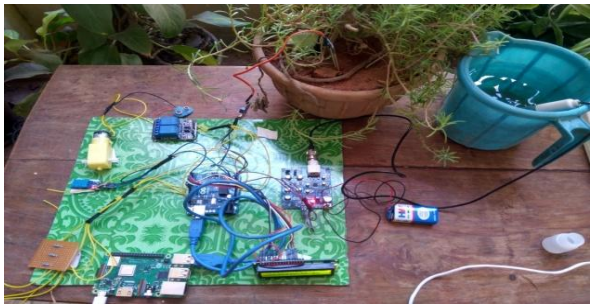

Fig .7 Hardware Results

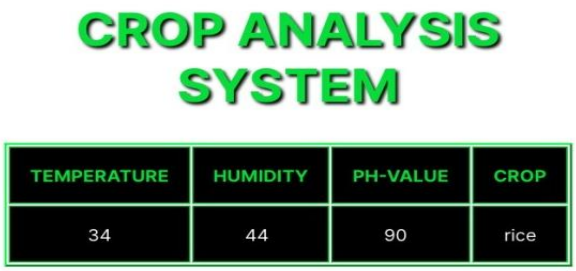

Fig.8 crop analysis

V. CONCLUSION

Agriculture are gradually being replaced and enhanced by more sophisticated and accurate digital and electronic device. A high percentage of agriculture revenue is lost to power loss, incorrect methods of practicing. This is reduced by the use of smart sensors. The proposal is to perform the agriculture in smartand more efficient way. In addition, this method advocates for the use of the Internet of Things. Internet of things need enabled the farming worker crop checking not difficult Also proficient should improve those benefit of the crop and henceforth benefits to the rancher. Sensors for distinctive sorts are used to gather information the majority of the data of crop states and Ecological transforms and this data will be transmitted through organize of the farmer/devices that initiate restorative activities. Farmers are associated and mindful of the states of the agriculture field in anytime and anyplace in the world.

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