

An automated low-cost IOT-based fertilizer notification system for smart agriculture

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Abstract - In India, the agricultural sector accounts for 10% of export revenue and 16% of GDP. Along with industry and the services sector, the agriculture sector is the main driver of the Indian economy's growth and sustainability. The agricultural sector provides employment and a means of subsistence for about 65% of the population. In several regions of the nation, science and technology are being used to agriculture. This project uses IOT technology to create smart agriculture. It has an IOT (Internet of Things) system that may be used to control and monitor tasks like temperature monitoring, soil moisture detection, lighting, motor on/off, and spraying. Smart irrigation with intelligent control and decision-making may also be a part of it. There have been attempts to use IOT to increase agricultural productivity, monitor environmental factors including soil moisture, humidity,

Key Words: smart agri solution. IOT (internet of things), Transformer, Ultrasonic Sensor. Audino software.

1.INTRODUCTION

Identification, remote sensing, actuation, and remote monitoring capabilities are all possible with an IoT device. Additionally, IoT resources are software elements used to access, process, and store sensor data, as well as manage actuators attached to the device. To monitor the crop field, a sensor-based arrangement is created. Water must be delivered to the crop in an appropriate amount. To achieve precise results, it is critical to regulate the water services. The crop should be permitted to use it only if it needs the water. Because too much water can drown a crop and too little water will prevent plants from growing. Sensor data can provide the best estimate of the amount of water needed. Only with knowledge of the pH value, soil type, soil density, and water requirements can irrigation be carried out successfully.

11. SMART FARMING

Smart farming is a management concept focused on providing the agricultural industry with the infrastructure to leverage advanced technology-including big data, the cloud and the internet of things (IOT) -for tracking , monitoring ,automating and analyzing operations. Also known as precision agriculture,smart farming is software managed and sensor-monitored. Smart farming is growing in importance due to the combination of the expanding global population, the increasing demand for higher crop yield.

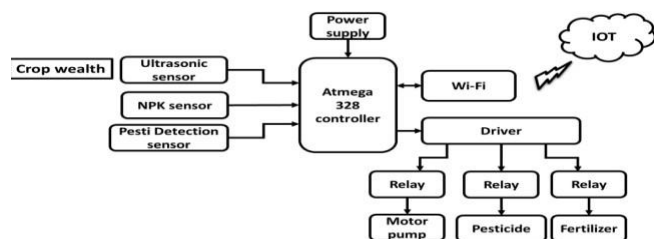
1.2 WAREHOUSE

To Trace all the farm area under control. A warehouse is a commercial space vital in the supply chain that is used to store finished goods and raw materials and is widely used in industries such as manufacturing and distribution. Information is needed to move finished goods down the chain of distribution to the customers,and technology can increase how effectively this is achieved.

2. WATER REQUIREMENT SOIL MOISTURE MONNITORING AND IRRIGATION QUALITY

Crop water requirements are defined as the depth of water needed to meet the water consumed through evapotranspiration by a disease free crop,growing in large fields under non restricting soil conditions,including soil water and fertility,and achieving full production potential under the given growing environment..

Soil moisture sensors aid good irrigation management. Good irrigation management gives better crops, uses fewer inputs, and increases profitability. Soil moisture sensors help irrigators to understand what is happening in the root zone of a crop. The soil monitoring sensor uses capacitance to measure dielectric permittivity of the surrounding medium.



Block Diagram in IOT Based Smart Agriculture

Irrigation water quality refers mainly to the chemical composition of the water, or more specifically, to the mineral composition of water. Some physical and biological properties, such as turbidity and presence of algae, bacteria, or viruses, also determine the suitability of the water for irrigation. The quality criteria for irrigation water are entirely different than the criteria for drinking water.



Fig -1: Result

The software that is used to program the microcontroller, is open-source software and can be downloaded for free on www.arduino.cc. With this "Arduino software" you can write little programs with which the microcontroller should perform.

The Internet of Things (IoT) is the network of physical objects or "things" embedded with electronics, software, sensors, and network connectivity, which

enables these objects to collect and exchange data. Internet of Things is not the result of a single novel technology; instead, several complementary technical developments provide capabilities that taken together help to bridge the gap between the virtual and physical world.

3. CONCLUSIONS

Based on the above result, IoT based method of farming can give efficient output than conventional farming. Gathering real time data is possible due to IoT based applications. Both experienced and inexperienced farmers can utilize the above system give benefits. The IoT (Internet of things) as a tool can be adopted in many fields and positively increase the existing outcome. AGRIoT can help farmers to get a solution for some critical challenges they face in farming.

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