Green House Monitoring and Detection of Plant Diseases using IOT

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Abstract: - *A greenhouse is a structure generally made of glass, designed to provide protection and controlled environment to raise plants indoors. In order to achieve high quality and quantity of produce, proper management and data collection of the greenhouse environment is required. Manual practice of plant monitoring is laborious and time consuming. The proposed greenhouse system is an application which demonstrates the concept of Internet of Things and involves ubiquitous monitoring and controlling of environmental parameters within the greenhouse, which directly or indirectly control the plant growth and so their production. There are many techniques available for the precision agriculture to monitor and control, environment for the growth of many crops. Due to unequal distribution of rain water, it is very difficult to requirement needed farmer to manage the water equally to all the crops in whole farm it requires some irrigation method that suitable for any weather condition, soil types and variety of crops. Green House is the best solution to Control and manage all this problem .It is more important to search a method that gives perfect analyzation and controlling to develop proper environment. Large areas covered by sensor network this can establish greenhouse with precision environment required for different crops. This environment builds up by using two technologies it and cloud computing. By using IOT (Internet on things), we control devices or any environmental needs anytime, anywhere.*

Keywords: - Green house, node MCU, wireless network, embedded system, Web CAM, Sensor network, Internet of things (IOT), Cloud computing.

I. INTRODUCTION

The agriculture is basic reason of production of food and stuff that eventually is reason of survival of the population. In Indian most of the population relies on agriculture. However, there's additionally have to be compelled to review and revitalize the mechanism for change the technology. Within the forthcoming years, agriculture can see major changes. In contrast to the sooner 'green revolution', that had a foundation of advanced pesticides and fertilizers, currently the agriculture is going to be revolutionized with the assistance of technology. Each developing economy has agriculture sector as irreplaceable pillar then will Republic of India. In India, the agriculture sector contributes near two hundredth of gross domestic product. Either directly or indirectly hrs of total population of Republic of India depends on agriculture. The overwhelming majority of Indian farmers, which has small-scale producers, area unit usually unable to access the knowledge and technological resources that might increase the yield and cause higher costs for his or her crops and merchandise. The wide unfold network of mobile phones can

be the sport changer during this drawback. It'll place agriculture led to its celestial point. The most purpose for such project is to develop a portable primarily based resolution that helps in farm management; results in agricultural yield improvement and helps in care/maintenance of the farms. Automaton is AN OS for mobile device and a platform to developed key application for the good Phone. Java artificial language is employed to develop automaton Application by victimization automaton SDK tools and API. Automaton good Phone is changing into additional in style owing to low worth and free applications. Good phone makes all our tasks quick, economical correct. Automaton Market permits automaton good Phone users to transfer application freely. Owing to this automaton options, in our analysis paper we've got combined the thought of agriculture and Agriculture sector to utilize the utmost advantage of automaton technology.

Agri App could be a revolutionary automaton primarily based mobile application. It provides complete data on Crop Production, Crop Protection and every one relevant agriculture allied services on your Smartphone! Additionally to being AN data portal, Agri App is additionally an internet market place conveyance farmers, agri inputs, and retail filament services on a typical digital platform. This call network are going to be helpful in Agriculture System to counsel Farmers to pick a crop for cultivation mapping victimization completely different ground parameters Soil sort, Average Weather, Water consumption, Temperature and soil hydrogen ion concentration. As this technique additional useful to extend productivity of crops and indirectly to extend gross domestic product of Republic of India, cut back economic condition.

II. RELATED WORK

Android mobile use in Agriculture is as the core components to more helpful to increase productivity of crops and indirectly to increase GDP of India reduce poverty. The main challenges for crop selection traditional methods. This is android application, which will be useful for farmer's agricultural institutes for cultivation of various kinds of crops in various type of atmosphere. This smart phone app is easy to use and in a fordable cost which will suggest most probable matching crops to people according to weather condition. By this farmers can cultivate more suited crop and increase production ratio .Here application needed basic inputs like water availability in mm , average temperature , average soil Ph of farm , locality of farm , soil type etc. so by certain calculation at back end this application will show most probable crops for that farm . It is one farmer's friend kind of application[1].

The agriculture is basic reason of production of food and raw material, which eventually is reason of survival of the population. In Indian most of the population is dependent on

agriculture. However, there is also need to review and revitalize the mechanism for updating the technology. In the upcoming years, agriculture will see major changes. In India, the agriculture sector contributes close to 20% of GDP. Either directly or indirectly, 60% of total population of India depends on agriculture. The vast majority of Indian farmers, which includes small-scale producers, are often unable to access the information and technological resources that could increase the yield and lead to better prices for their crops and products. The wide spread network of mobile phones could be the game changer in this problem. It will put agriculture eld to its zenith. The main purpose for such project is to develop a mobile phone based solution that helps in farm management, leads to agricultural yield improvement and helps in care/maintenance of the farms [2].

This Agriculture is the primary occupation of the larger part of Indian population. 65-70 % of Indian population is being depends on agriculture for their living. The challenging task for farmers is information management mainly in terms of the amount of data and the complexity of processes in precision farming. The data regarding farming are available from many sources like printed media, audio and visual aids, newspaper, TV, internet, mobile etc. Mobile apps in the arena of agriculture can be the best option to increase countries agriculture production. The inventions in technology in agriculture domain are not getting to the farmers; because of either most of them are illiterates or due to unawareness of the location from where they can have information [3].

There are many techniques available for the precision agriculture to monitor and control, environment for the growth of many crops. Due to unequal distribution of rain water, it is very difficult to requirement needed farmer to manage the water equally to all the crops in whole farm it requires some irrigation method that suitable for any weather condition, soil types and variety of crops. By using IOT (Internet on things), we control devices or any environmental needs anytime, anywhere and the cloud which provides storage and computing resources to implement a web page[4].

IN This paper, in recent year greenhouse technology in agriculture is to automation, information technology direction with the IOT technology rapid development and wide application. This paper takes CC2530 chip as the core, present the design and implementation of Agriculture Greenhouse Environment Monitoring system based On IOT Technology [5].

III. PROPOSED SYSTEM

From the current problem section, it can be seen that the existing systems are insouciant to handle the problems of the greenhouse monitoring and control. To solve these problems we propose the monitoring and control of greenhouse using IOT and WSN. It mainly consists of the sensing part, controlling part, monitoring part and a message sending and receiving part. In the monitoring part, the sensors included are temperature sensor, soil moisture sensor, gas sensor, colour sensor and are sensor. These sensors will sense the various parameters of the environment. Green House Monitoring and Controlling is complete system designed to monitor and control the humidity inside a green house. This software uses an Android mobile phone, connected using Wi-Fi to a central server, which connects via serial communication to a microcontroller and humidity sensor. The result shows that the condition species in sensor's datasheet and system in reality is appropriate. The achieved test result concludes that the system is working properly.
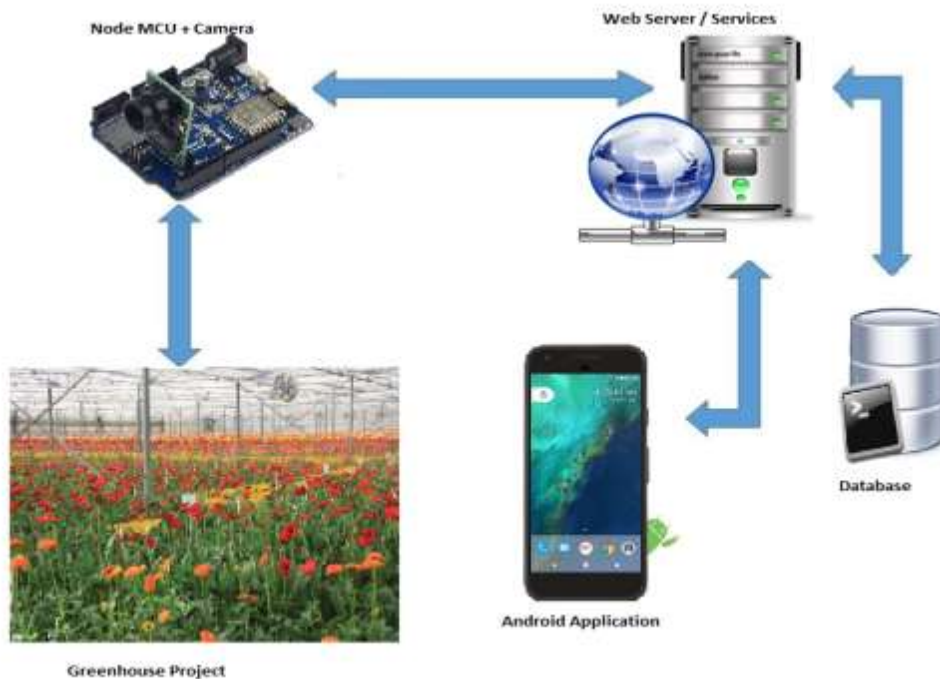

Figure 1: Architecture Diagram

The Smart Greenhouse can be further upgraded in many ways and can be used in wide agricultural applications. It can be placed and operated in any of the environmental conditions to grow any kind of vegetation. Non-conventional energy sources such as solar panels, windmills are used to supply power to the automatic greenhouse equipment's and pettier effect for cooling purpose. Soil-less farming can be performed to further improve the nutritional value. Integration of farming with IOT can make it much more efficient and profitable activity. Smart Greenhouse has a bright scope of future in agriculture eld and it will create a revolution in the way the agriculture is carried out in India.

IV. CONCLUSION

This idea describes the design of a greenhouse monitoring system based on IOT. Agriculture projects even in urban areas are on a rise in recent times, in unique forms. Technological progress makes the agricultural sector grow high, which here is made by the IOT. The IOT will dramatically change way we live our daily lives and what information is stored about us. These monitoring system percepts different parameters inside the greenhouse using sensors and GSM to provide the updates. The developed system can be proved profitable, as it will optimize the resources in the greenhouse. The complete module is of low cost, low power operation hence, easily available to everyone. This paper is a basic idea of the research regarding greenhouse but still there is a lot more to be explored technologically..

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