Smart Polyhouse Controlling Using AI

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Abstract - **The Internet of Things (IOT's) can be termed as connecting ordinary objects like a smart phones, Internet TVs, sensors and actuators to the internet in which the gadgets are intelligently connected together enabling new types of communications among things. This is a low cost and flexible tracking controlling system which uses ATMEGA 328 microcontroller. Greenhouse Automation System is the practical method where the farmers from the rural regions might be benefitted through a means of automatic tracking and control of greenhouse/polyhouse environment. It alternates the direct supervision of the human. In this paper the exceptional papers had been reviewed and developed the proposed gadget based on the problem in the gift monitoring system. All the system operation will be monitored and controlled using Android Mobile App. Sensors such as soil moisture sensor, humidity sensor, mild sensor and temperature sensor might be used to display the performance of the field. Depending upon the output of sensors, controller will control the load on the output side.**

Index Terms - **IOT, Sensor, Polyhouse Automation, Communication.**

I.INTRODUCTION

The main objective behind our undertaking is to offer the farmer friendly automated system to avoid the mistakes done by normal farmers. In this system we can offer the extraordinary type of sensors to monitors temperature, humidity, and soil moisture, intensity of light and water stage within the well. The system mainly focuses on detecting the suspicious motion and notify the farmer. The prevailing concept behind this project is to the make
All of the farming sports internet software based in limited power and reduces all the problems that farmer faces.

II. MOTIVATION

The applicability of the Internet of Things will subvert some of sector, shape automation, transportation, energy, healthcare, financial matter to nanotechnology.

IOT is the modern technology to make Existing system very easy. Before this system farmers have to do all of the work through themselves now through the usage of this generation lots of their paintings may be automated and may be display well with the assist of sensors and cameras which will assist them to control records and boom in their crop as well. Many tough works and time orientated works may be effortlessly and manage the use of IOT remotely.

Weather: Farming mainly depends on climate conditions. Farmers face extremely good threat in growing crops, as deficient rainfall and excess water deliver can destroy the crop or cause a lower in farm produce.

Lack of knowledge and skill: Literacy is also one of the most important elements affecting in all of the sectors. Literacy fee in rural locality is pretty low and it receives even decrease, if we generally talk about farmers of India. Lack of literacy issue in farmers being ignorant of adjustments going on in the farming sector. IOT (Internet of things) and lot of other technology have eased many of our lives.

III. LITERATURE SURVEY

1) Development and Analysis of Smart Digifarming Robust Model for Production Optimization in Agriculture, 2019 6TH International Conference on Computing for Sustainable Global Development (INDIACom): This paper focuses on providing smart solutions to the farming community.
to and fro for all the various and integral work of farming. The model punctuates the use of technology for economic and feasible solutions.
Previously it was dependent upon weather and exploitation by commission agents. This one- stop projected solution model and will result in enhanced efficiency and revenue as well as the model would

equip farmers with weather information, using IoT to optimize yield, learning new techniques in farming, direct connection with customers and online banking. The mobile application can be integrated with this model to give all the information at fingertips ensuring earning growth.

2) Polyhouse Automation using PLC, 2018 International Conference on Advances in Communication and Computing Technology (ICACCT): This research paper focuses on the several accessories which helps for the plant growth, environmental parameters which are supervised and controlled. Monitoring of the inner environment is done with sunlight, temperature and humidity. Plants which are cultivated in polyhouse is subjective to different variables, for example, water in soil, and climatic conditions (temperature, dampness and so on.). In this paper, authors have been concentrated around outline and execution for observed atmosphere conditions and to control the classifiable gadgets on yield. Monitoring and controlling of field parameter provides better environment for crop growth which finally causes product improvement. Using PLC, the system was more affordable to common people. This system simplifies the task of wiring, reduces the cost .This system provides an effective and agile wireless network solutions.

3) GreenHouse Automation Using IoT, 2017 International Research Journal of Engineering and Technology (IRJET): In this research paper, authors proposed a precocious solution for monitoring the weather conditions in greenhouse and made the information visible to the world. The terminology is Internet of Things (IoT), which is an advanced and efficient solution for connecting the things to the internet and to connect the entire world of things in a network. Things might be like electronic devices, sensors and automotive electronic equipment. The system deals with monitoring and controlling the environmental conditions like temperature, relative humidity, with sensors and sends the information to the web page and then plot the sensor data as graphical statistics.

4) IOT Based Smart Greenhouse Automation Using Arduino, 2017 International Journal of Innovative Research in Computer Science Technology (IJIRCST): The main objective of the paper is to design greenhouse monitoring controlling system based on IOT using Arduino. Android phones were used in some of the previous system to monitor the green house but lacked to control it using android from remote locations. . Plants in green house are mature under controlled environment. The differences between temperatures can harm the plants. Sometimes the farmers cannot predict which action needs to be taken to control the environment and may take wrong decisions which causes more harm to the plants in the green house. This will allow farmers to take proper decisions by providing the status of the sensors with accurate information through the IOT web server. Thus, remote location access is available to farmers.
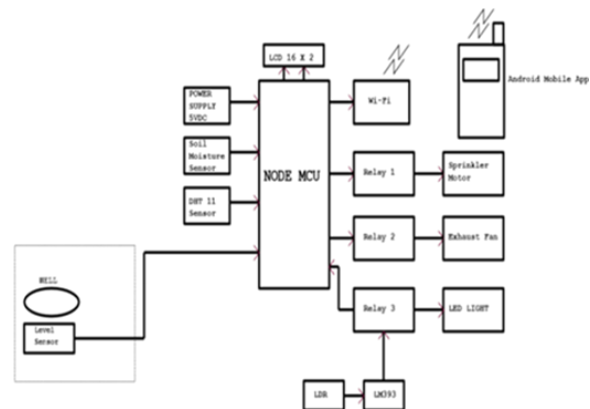
IV. SYSTEM ARCHITECTURE

Fig - 1: System Architecture

The figure shows the proposed system architecture of our project, where all the devices are connected to each other. The whole proposed system will be supervised using mobile application which is having 80-90% accuracy, the structure of the app can be altered according to user's choice. The history of the on-off feature of the system can be stored on cloud to take the sight when system was working at what time. One depth level sensor is used which will measure the depth of the water to avoid the damage of motor as the system is fully automated, there are many chances of damage of various devices so we have taken precautions about such devices.

Farming is timely related with the agriculture sector that has to be taken into consideration which is one of the maximum critical sectors for the edict power of mankind. In earlier days, greenhouse control broadly speaking makes use of a Conventional mode of control that's constructed at the enjoy to manually modify the light, temperature, humidity and additionally irrigation and fertilization.

This technique is better for costs control, which include low manufacturing efficiency, waste of assets and environmental pollution. Hence for the disposal of those hazards of gift agricultural poly-residence control, we proposed Feedback manage gadget of Polyresidence /greenhouse pertaining farming to growth manufacturing and best to attain export stage best of crops. The crop agriculture in greenhouse is better stricken by the encompassing conditions. The tremendous environmental elements for the best and higher productiveness of the flora boom are temperature, relative humidity, Lighting, moisture soil, and the CO2 quantity in greenhouse. Continuous tracking of those elements offers applicable data concerning the character outcomes of the different factors closer to acquiring most crop manufacturing. Arduino is open-supply electronics platform which has flexible easy-to use hardware and software. It's supposed for artists, designers, hobbyists, and everybody inquisitive about growing interactive gadgets or environments. Arduino can experience the environment through receiving the information to enter sign from a whole lot of sensors and might have an effect on its surroundings through controlling fans, Water pump, actuators are connected through interfacing to itself with Node MCU microcontroller. Node MCU is the modern-day microcontroller constructed using Wi-Fi technology.

V. RESULTS

Fig - 2: Hardware System

Fig - 3: Welcome Screen

Fig - 4: Motor Status

Fig - 5: Display on Blynk Application

VI. CONCLUSION

We have proficiently studied tracking and controlling of parameter supplying higher surroundings for crop boom which in term improve the product I long term support. Here, proposed layout is applied with Node MCU platform for greenhouse tracking, controlling temperature and soil moisture with the assist of Web server Using IOT.

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