AI based Smart Polyhouse Controlling

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Abstract - The Internet of Things (IOT's) may be defined as connecting ordinary objects like a smart phones, Internet TVs, sensors and actuators to the internet in which the gadgets are intelligently connected collectively enabling new types of communications among things and peoples and among matters themselves. This is a low fee and flexible tracking controlling system the usage of an ATMEGA 328 microcontroller. Greenhouse Automation System is the technical method wherein the farmers withinside the rural regions might be benefitted via way of means of automatic tracking and control of greenhouse/polyresidence environment. It replaces the direct supervision of the human. In this paper the exceptional papers had been reviewed and developed the proposed gadget based at the problem in the gift monitoring gadget. All system operation will be monitored and managed using Android Mobile App. Different kinds of sensors such as soil moisture sensor, humidity sensor, mild sensor and temperature sensor might be used to display the performance of the field. According to the output of sensors, controller will control the load on the output side.

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

I.INTRODUCTION

The predominant goal in the back of our undertaking is to offer the farmer friendly automated system to avoid the mistakes through the farmer. In this system we are able to offer the extraordinary type of sensors to monitors temperature, humidity, soil moisture, intensity of light and water stage withinside the well. And system extra focuses on detecting the suspicious motion and notify to farmer. The predominant concept in the back of this project is to the make an internet software for controlling all of the farming sports in limited guy power. And break all limitations that faces the farmers.

MOTIVATION OF THE PROJECT
The improvement of the Internet of Things will revolutionize some of sector, shape automation, transportation, energy, healthcare, financial offerings to nanotechnology.

IOT is the modern-day technology in an effort to make our existence very easy. Earlier farmers want 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 timeorientated work may be effortlessly and remotely managed the usage of IOT.

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

Lack of know-how and skill: Literacy is also one of the most essential elements affecting in all of the sectors. Literacy fee in rural vicinity is pretty low and it receives even decrease if we specifically talk about farmers of India. Lack of literacy consequences in Farmers being ignorant of adjustments going on in the farming sector. IOT (net of things) and plenty of other technology have eased many of our lives.

II. LITERATURE SURVEY

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 project aims at providing smart solutions to the farming community. The farmer needs to travel here and there for all the different and integral work of farming. The model emphasizes the use of technology for efficient and feasible solutions.
Dependence on weather and exploitation by commission agents will be things of the past. This one-stop proposed solution model will result in increased efficiency and revenue as well 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.

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

Green House Automation Using IoT, 2017 International Research Journal of Engineering and Technology (IRJET): In this research paper, authors proposed an advanced solution for monitoring the weather conditions in greenhouse and make the information visible anywhere in the world. The technology behind this 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. Here things might be whatever like electronic gadgets, 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.

IOT Based Smart Greenhouse Automation Using Arduino, 2017 International Journal of Innovative Research in Computer Science Technology (IJIRCST): The project describes the design of a greenhouse monitoring controlling system based on IOT using Arduino. Some of the previous systems used android phone to monitor the green house but

lacked to control it using android from remote locations. . Plants in green house are grown under controlled environment. The temperature differences can cause harm to plants. Sometimes the farmers cannot predict which action needs to be taken so to control the environment and may take wrong decisions thus causing more harm to the plants in the green house. This system will allow him to take proper decisions by providing the status of the sensors to the farmer with accurate information through the IOT web server. Thus, this system helps farmer to control green house from remote locations.

III.SYSTEM ARCHITECTURE
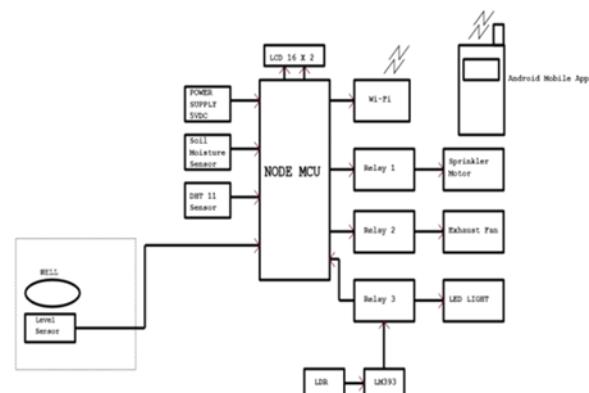
Fig - 1 : system architecture

Above is the proposed system architecture of our project system where we have shown all of the connected devices with each other. whole proposed system will be monitored using one mobile app which is 80-90% accurate, structure of the app can be changed according to users choice the data that is the history of the on-off feature of the system that data can be stored on cloud to take view when our system was working at what time. We have added one depth level sensor which will measure the depth of the water to avoid the burning of motor as our system is fully automated there are lots of probability about the corruption of various devices to we have taken precautions about that.

Farming is the time period associated with the agriculture sector, that's taken into consideration one of the maximum crucial sectors for the staying power of mankind. Farmers are those who're on this livelihood of farming. In early days, polyresidence /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 ends in better control costs, and additionally brings a hard and fast of problems, which include low manufacturing efficiency, waste of assets and environmental pollution. The to be had control is inadequate to that of requirement. Thus to dispose 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 prototyping platform primarily based totally on 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 enter sign from a whole lot of sensors and might have an effect on its surroundings through controlling fans, Water pump, and different actuators through interfacing itself with Node MCU microcontroller. Node MCU is the modern-day microcontroller within constructed Wi-Fi technology.

IV.RESULTS

Fig - 2: Hardware System of Project

Fig - 3: Welcome Screen of Project System

Fig - 4: Motor ON result
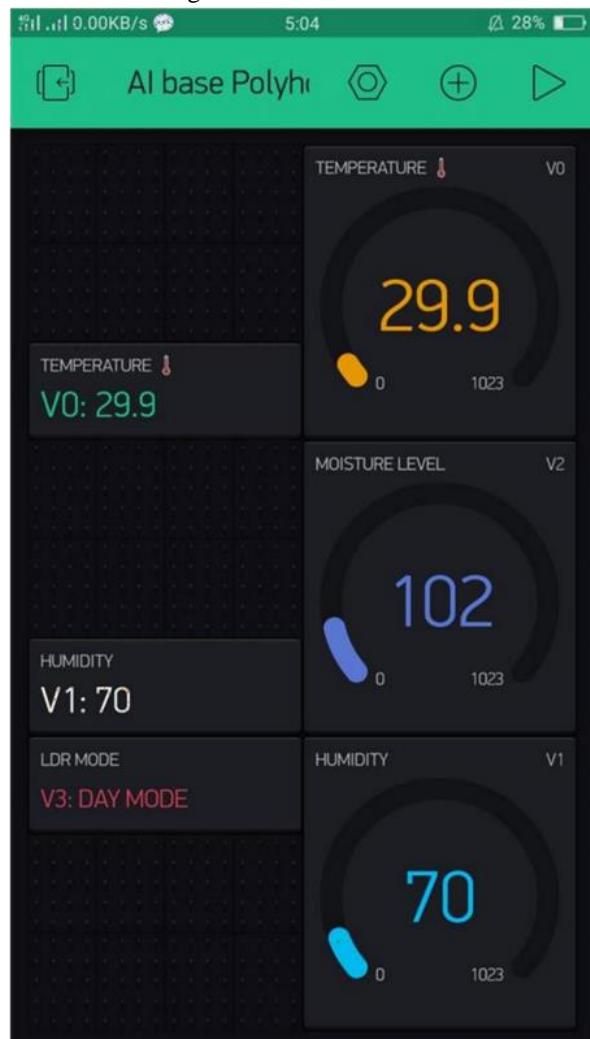
Fig - 5: result on Blynk App

V.CONCLUSION

We have efficiently studied tracking and controlling of area parameter supplying higher surroundings for crop boom which in the long run reasons in product improvement. 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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