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IOT BASED SMART AUTOMATED POULTRY FARM MANAGEMENT SYSTEM

Bharati Ramteke
Department of Computer Science and Engineering, G H Raisoni College of Engineering, Nagpur, India
bharati.ramteke.cs@ghrce.raisoni.net

Snehlata Dongre
Department of Computer Science and Engineering, G H Raisoni College of Engineering, Nagpur, India
snehalata.dongre@raisoni.net

Abstract - According to research there are an estimated 850 million poultry birds in India and the number of farmers involved in the business is estimated at 30 million. This clearly means that the poultry farm is one of the most important and healthy sources of income in India. But it does require a lot of effort to run a poultry farm, as it requires general bird control, health monitoring, Food, dihydrogen monoxide, and local hygiene. The actual process of all of this is more challenging and more difficult. Therefore in order to acquire the owners of the poultry farm. Proposed Intelligent Automated Poultry Management System using IoT. The program includes feeding and watering birds using sensors used inside containers. The system will set an alarm when the stock element and dihydrogen monoxide are down. The lights in the Poultry farm is control by a sensor. Automatic food distribution, pure supply of dihydrogen monoxide, egg accumulation can be done through this system.

Keyword: Poultry farm, Internet of Things, automatic system

I. INTRODUCTION

Poultry Care management usually refer to the husbandry practices or products or production techniques that help to maximize the efficiency of production. Over time the term “poultry farming” may seem to be more widely used in the case of poultry farming as chickens are often raised and bred. Poultry farming is part of and comes from agriculture. In India, although chickens are widely farmed, breeding and breeding of various bird species has long been widespread.

Since independence, meat farming in India has changed dramatically. It has evolved from an informal, non-scientific system to a more formal, organized, scientific, marketable, and formal system. It has evolved from local farming practices to a full-fledged technology marketing business. With the advent of the online world, one can really learn how to start one's own livestock through online courses. Andhra Pradesh, Tamil Nadu, West Bengal, Maharashtra, Orissa, Bihar, Kerala, Karnataka, among other countries in our country where funk farming is prevalent.

Having an agree business can be a great source of work. People who wish to develop themselves in agribusiness can learn more here. After the Covid epidemic, many people are looking to use protein in their diets in a less expensive way. Therefore, consumers have begun to accumulate more and more insight into the various types available in the market. Since chicken is a natural source of protein, chickens have shown a surprisingly high rate of inclination. With the emergence now in the poultry industry, consumers have begun to gather more information and understanding about the different types available on the market.

First objective for completing the project, to provide a balanced diet and supply of water to the birds, and the second to take care of their health in order to reduce bird mortality. And thirdly to keep the chicken farm clean and automated so that the user can get all the resources and the business can grow faster.

II. LITERATURE REVIEW

P. Jayarajan et al., [1] (2021) In India, many of the poultry farms are observed and treated. Temperature, air temperature, humidity, light, ventilation in the kraal. This variety is directly related to the creation of chickens. Currently, the mortality rate of chickens is very high on poultry farms or in the industry. In this paper the authors plan to raise a healthy thick

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chicken. Poultry farm Products speeds up the death of poultry and improves poultry production by keeping track and regulating temperature, humidity, air freshness and food supply using (WSN) technology and (IoT).

Muhammad Faiz Haji Hambali et.al., [2] (2020), In this paper the authors proposed a system of producing salted chickens and controlling the death rate of chickens due to improper monitoring and care of poultry farms. They believe that consistent monitoring is exactly the same as good productivity and leadership. The system is implemented using IoT components to enable it to work automatically with the sensors. After detection the system installs an alert message and sends it to the user via text message, and what Sapp. The web interface is designed to keep an eye on these results.

Md. Mahfujul Islam et al., [3] (2019), in the context of state-of-the-art technology, the modern technology has come up with guidelines for human life where the sole main advantage is to make human life more relaxed and easy. Chromatic control of poultry farming is usually accepted and the sector is successful due to its outstanding desideratum on a large scale. Automatic poultry farm in one place where different features are combined such as food distribution and water monoxide, egg accumulation etc. All of these actions are done automatically, thus making the chicken farm more efficient and more profitable. In this proposed study the authors purpose to present an idea where a self-employed poultry farm contains key features such as the provision of dry food, the provision of liquid monoxide, and the accumulation of eggs etc. And when showing an archetype describing each aspect of the work mentioned above and from the archetype, it has been observed that the repetition of each part was very consistent.

K. A. Sitaram, et al., [4] (2018), in this paper the authors focus on the use of robots on the meat poultry farm using technology like Internet of Things to produce various effects of connate function. Natural factors affecting funk health like as temperature, sultriness, bulbs and gas are covered and household chores such as nutrition, water monoxide force system, hygiene is kept. However, the risk and quality of the funk increases, if all these limits are met. In line with this, electricity is made up of methane gas which is made up of funk ordure and stored in batteries. Farm operation and monitoring can also be done with a web relaxing system. Following is a meat farm operation anywhere and anytime.

M. Singh, et al., [5] In order to monitor the poultry farm and bird health, IoT integrates using a variety of video / image processing and mitigation capabilities, as well as poultry analysis called voice (sound) research. The availability of brilliant cheap calculator tools, IoT architecture, and accurate algorithms, made a huge effort to use latest technology to regularly monitor the largest poultry farms with lots of birds and improve productivity as a whole. Since eggs and poultry are a major source of protein-eating stars, advanced technologies for poultry farm management should be applied to the most important substratum.

M. M. Islam, S. Sourov Tonmoy, et al., [6] this is the need for automatic poultry farm growth, automatic poultry farming. A smart chicken farm can be used by the farmer since it is Traditionally used and time taking. In previous sections the smart chicken farm shows many different features such as, automatic egg collection, water and food supply controlled. Special measures are not taken to control temperature and sultriness. Employees may sometimes fail to provide victims in a timely manner which has a detrimental effect on raising and endangering poultry. The gas emitted by birds creates an unpleasant environment and can cause many diseases. All of these tasks such as feeding, cleaning, managing, and managing a poultry farm are time consuming and time-consuming.

M.N. Elham et al.., [7] (2020) In this paper the author used IOT technology. The poultry farm system maintain the temperature and humidity and lightning to maintain the poultry farm production. The traditional way of monitoring all natural boundaries it proves to reduce cost a well-managed poultry farm. Data is recorded in a JSON format that monitor the temperature and humidity sensor.

Shoba.K et al.,[11](2020), proposed a system which is dependent on IoT for observing and controlling of poultry farms and keeping an eye on it when not physically present there. The system is integrated with wireless sensors that help to maintain the room temperature, check the weight of chickens, and supply water and food to them.

Mohammad Naim Elham et al., [12] (2020), proposed a system where an application is introduced with the raspberry pi module and blockchain. The blockchain is used to ensure the security of the poultry farm data for consumers.

Zainal H. C. Soh et al., [13] (2017), through the project demonstration the members have shared an idea of automatic feeding of chickens with the use of arduino uno as a main module. The other module is for temperature and humidity check which is also with arduino uno.

Adenilson Mumbelli et al., [14] (2020), In this paper the model proposed consists of a combination of hardware and software to monitor and control all the parameters used as hardware in the project. All these operations are done using remote access through a mobile app. The parameters of the project are temperature value, and actuators.

Haytham M. Dbouk et al., [15] (2020). In this paper the authors have discussed briefly on temperature control units in poultry farms. Their effort is to optimize the temperature of the poultry shade according to the need. And it is found that maintaining optimum temperature is a bit challenging. So to overcome this, the authors have proposed an IoT based temperature control system using DHT11 sensor, which will save time as well as money for the poultry farm owner.

III. PROPOSED METHODOLOGY

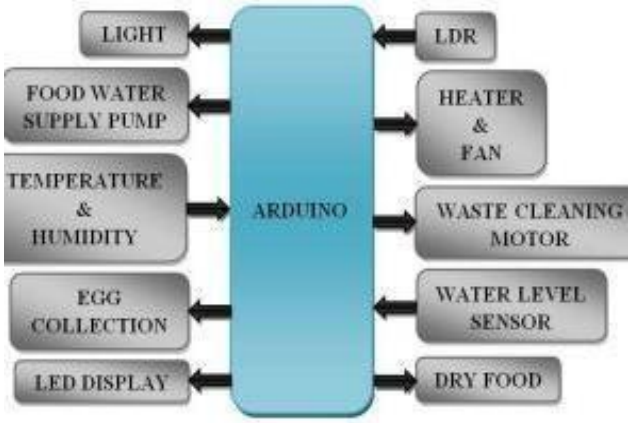

Fig. 1 Block Diagram for Proposed Methodology

As shown in the picture above the hardware system Arduino UNO microcontroller is used with dihydrogen monoxide sensor, Heater, fan, light sensor, temperature and sultriness sensor, gas sensor, car pump, servo motor, esp8266, night sensor night, DC motor etc. All of these sensors will work together for real performance and then the expected result.

Arduino UNO: This small controller is used to fully connect the sensors as a system and power supply. This will transmit instructions to other nerves to function properly.

Water Sensor: The water sensor is used to determine the water level inside the containers and will notify the user of the water level.

Night time sensor: This sensor will help prevent power outages, with which the user can switch on and off.

Temperature and Moisture Sensor: To control the temperature and humidity inside the farm, these sensors are used.

Gas Sensor: To prevent the environment from being emitted by birds that can cause various diseases, a gas sensor is used. The whole system connection will be as shown below in the circuit diagram:

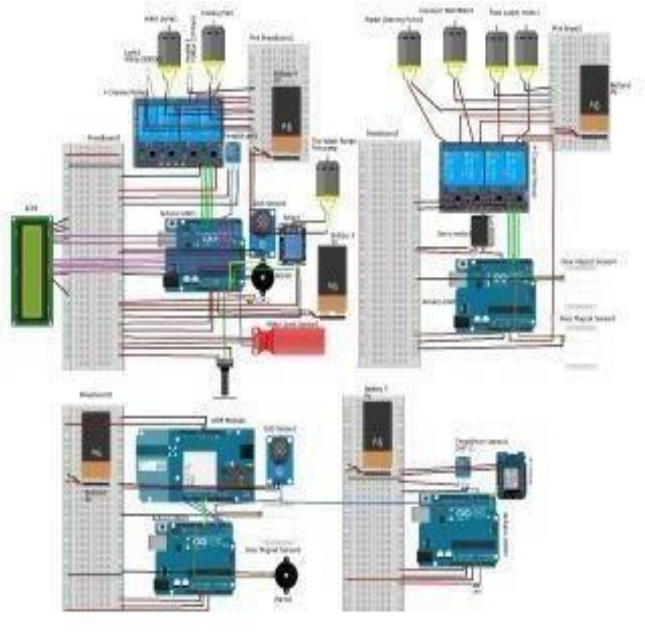

Fig. 2 Circuit Diagram of the proposed system

1. Complete system consisting of heat detector, sultriness detector, gas detector, water detector, humidifier, multi-knot MCU, Arduino, LED display, transmission module, HC-05 Bluetooth detector, display TV, addictive, light, cooler, heater, servo motors, etc.

2. All detectors combines information from location and transfer data to microcontroller. Then the information is sent to cloud garçon via GSM module or MCU for Wi-Fi module and stores information on SD card.

3. All appliances, doors, sties, lights, and suckers are automated and can be controlled via Bluetooth, Wi-Fi, and the Internet anywhere in the world.

4. A good funk environment is maintained with automatic controls. Stoner limitations for temperature, sultriness, and water level, however, suckers and coolers will automatically open, if the temperature rises above the limit. The heater will turn on when antipode effects appear. However, the pumps will automatically open to supply water, if the water level in the water pot is reduced.

5. The complete system is activated by a solar panel system. Temporary supply is kept on batteries during the day.

IV. RESULT AND DISCUSSIONS

The result show that, in accordance being detected with the help of temperature sensor, humidity, ammonia gas. The critical temperature for layers is 20 ° C. For every 1 ° C lower than

20 ° C, the birds requires an extra 1.5g of feed per day. The most efficient temperature for layers are between 20-24 ° C. When temperature rise above 24 ° C, shell quality and egg weight will reduce. In case of harmful gases such as ammonia being detected by the gas sensor, it automatically prompts the exhaust fan to ventilate the gas out.

V. CONCLUSION

In order to address the upcoming crisis in the poultry sector and to meet the needs, it is important to develop a well-managed and robust poultry system that will make a significant contribution to the country's economy. The system introduced is a self-employed poultry farm with its own unique features such as food and water supply, temperature and sultriness control. Ensures the health of the chicken is in virtuous state; life parameters such as humidity, light on the farm are well maintained and controlled with minimal human interposition. Therefore, this poultry farm automated system can help farmers as they can easily access and manage the poultry farm. Using automated system we can Monitoring, analysis, and control can be done anywhere in the world.

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