DESCRIPTION:

The purpose of this project is to design and develop a Smart Egg Incubator System (SEIS). The SEIS will fill with the temperature and humidity sensor. In this project, lamps are used as a heater to give suitable heat temperatures for the eggs. The health of the egg is very important for the development of embryos within the eggs. By using water and controlling the fan, it is can make sure the humidity and ventilation are in good condition. The status condition in the SIES will appear on the IoT Cloud.

OBJECTIVE:

The SEIS is one of the inventions that provide opportunity, especially for those who want to be successful farmers. The SEIS will automatically control the temperature and humidity. SEIS is a technology that provides an opportunity for farmers to produce chicks from eggs without the consent of the mother hen, it is also one of the ways of transforming eggs into chicks. The most important difference between natural and artificial incubation is the fact that the natural parent provides warmth by contact rather than surrounding the egg with warm air [2]. Table 1 below shows the different aspects of natural (hens) and SEIS

PROBLEM STATEMENT:

The egg-incubating process has been a significant issue in the field of farming particularly in the little poultry rush. New measurement shows that this issue is one of the principal factors that cause significant misfortune to ranchers. The utilization of handcrafted hatchery isn't so successful to defeat this issue. Reproducing chickens is a decent method for making a supportable herd; it ought to be learned by each chicken rancher.

Outside dangers, for instance, wild animals like monkeys or reptiles might hurt the eggs which may cause a significant misfortune for the rancher. This danger not exclusively can harm the eggs; however, the rearing system is likewise hindered

As expressed in the issue articulation, it is hard for the hens to lay eggs again assuming that they are in the reproducing system. Ranchers can defeat this issue by taking the eggs and putting them in the Smart egg hatchery, which carries out a modernized framework to control the climate to imitate the typical reproducing process. This framework is furnished with sensors that screen the temperature and dampness of the incubator.

The incubator in the market must be worked physically. The rancher might neglect to get things done at the ideal timings. To beat this, incubators are worked utilizing IoT

ABSTRACT:

For the chicken farmers, hatching the eggs in a big number is a problem to producing the chicks which incubate by hens manually. In this paper, we develop the system of an egg smart incubator. The incubator system based on Arduino Uno can control the temperature, humidity, and rotate the eggs automatically. In addition, the Internet of Things (IoT) system can help farmers to monitor the smart incubator from anywhere in the world. The egg smart incubator is applied to hatching the eggs at the Farm show the best result to hatching the quail eggs. The quail eggs successfully hatched 88.55%, 0.41% defective, 1.84% hatch but dead, and 9.20% does not hatch by 490 eggs in 21st days of incubating period

METHODOLOGY

In this system, we are using Arduino as our main controller. It has 2 sensors input and 2 setpoint inputs. All these inputs are Analog inputs. It has a total of 6 Analog inputs 14 Digital input/output pins. Out of these 6 inputs we are using 4 inputs only. we are using LM35 as our temperature sensor and HS220 has humidity sensors. The microcontroller compares sensor values with their respective set-points. If the temperature is less than its set-point then the heater is turned ON and if it's above the setpoint it will turn OFF the heater. The operation of the humidity sensor is the opposite. The humidity sensor is above the setpoint then Fan will be ON, and the humidity sensor is the below-set point then Fan will be OFF. There will be a dead band of 2% for humidity set points. Turning ON/OFF heater and exhaust fan is controlled by relays. As the relay turns on/off the heater/fan gets on/off. Relays are controlled by the microcontroller. There is also a stepper motor that will rotate a tray at 45 degrees. We need the stepper motor drive which rotates the stepper motor.

ADVANTAGES:

1. Easy maintenance, installation, and cost-effective.
2. Work without manpower.
3. It increases the production of poultry.
4. It increases the income of the former.
5. Availability in the locality

APPLICATIONS:

This system provides continuous monitoring of the eggs. It is not always possible for one to monitor the egg for whole days and control the entire factor all the time. So, this proposed method helps in providing a complete solution to develop remote monitoring and controlling of temperature and humidity by the sensor via wireless communication in the IoT platform.

This system can be used in

- Small scale poultry farm
- Homes

CLAIMS

- The design is made up of plastic
- The sensors are mounted inside the egg incubator, which is the get the information.
- The electrical and electronic components inside and outside of the egg incubator.
- The power consumption is much lesser than the normal conventional method.
- From the above claims the smart egg incubator can have used for domestic and industrial standards.

BRIEF DESCRIPTION ABOUT THE DRAWING

The working of the present invention can be better understood by referring to the following drawing,

Figure 1: Back view of egg incubator.

Figure 2: Isometric view of egg incubator.

Figure 3: Side view of egg incubator.

Figure 4: Top view of egg incubator.

Figure 5: Inner top side view of egg incubator.

Figure 6: Inner bottom view of egg incubator.

Figure 1: Back view of egg incubator.

JEEVANA S

SANJAI B

JANARTHANAM T

KAVIARASI S

SATHIYA PRIYA S

SRI HARANI P A

SANGAVI D

KAVIYA S

SWATHI G

Figure 2: Isometric view of egg incubator.

JEEVANA S

SANJAI B

JANARTHANAM T

KAVIARASI S

SATHIYA PRIYA S

SRI HARANI P A

SANGAVI D

KAVIYA S

SWATHI G

Figure 3: Side view of egg incubator.

JEEVANA S

SANJAI B

JANARTHANAM T

KAVIARASI S

SATHIYA PRIYA S

SRI HARANI P A

SANGAVI D

KAVIYA S

SWATHI G

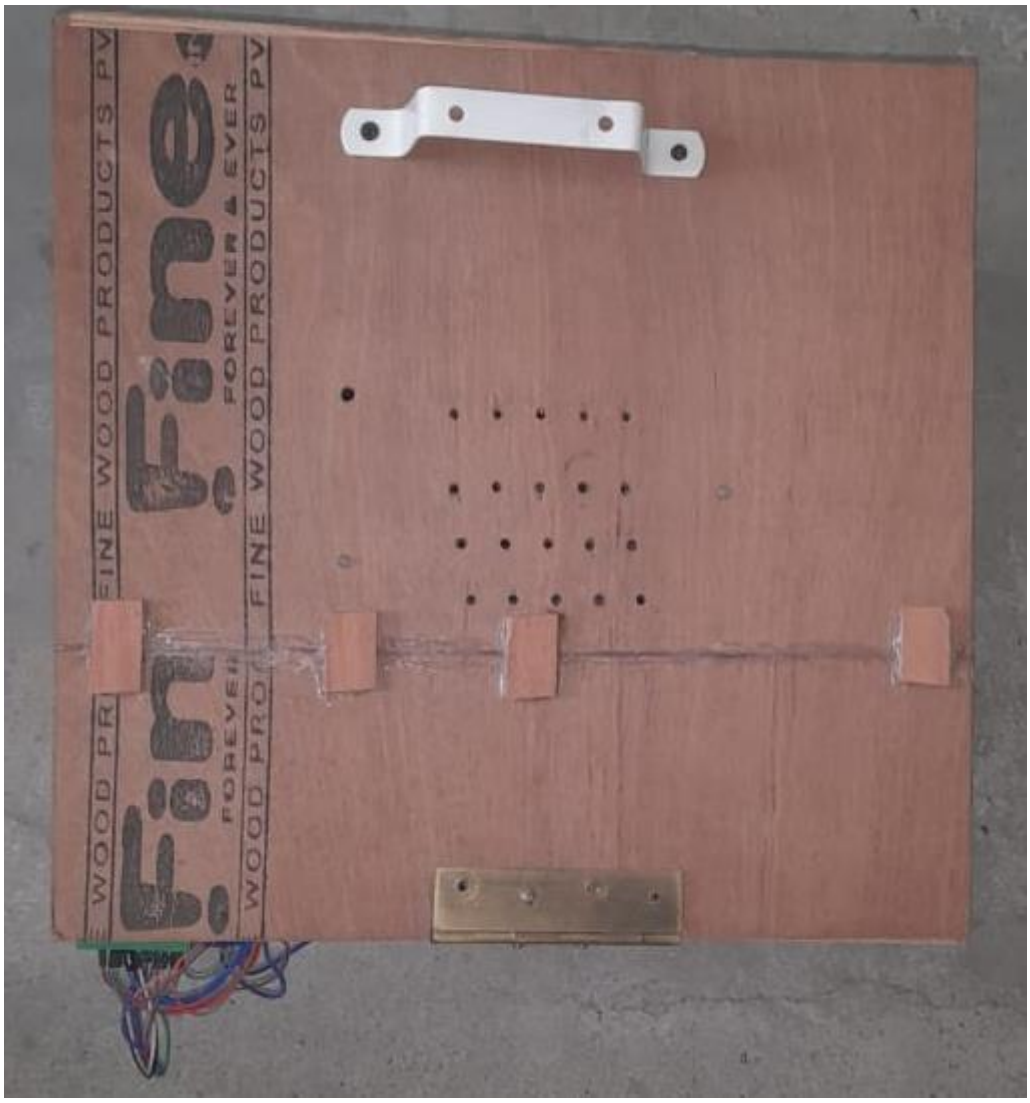

Figure 4: Top view of egg incubator.

JEEVANA S

SANJAI B

JANARTHANAM T

KAVIARASI S

SATHIYA PRIYA S

SRI HARANI P A

SANGAVI D

KAVIYA S

SWATHI G

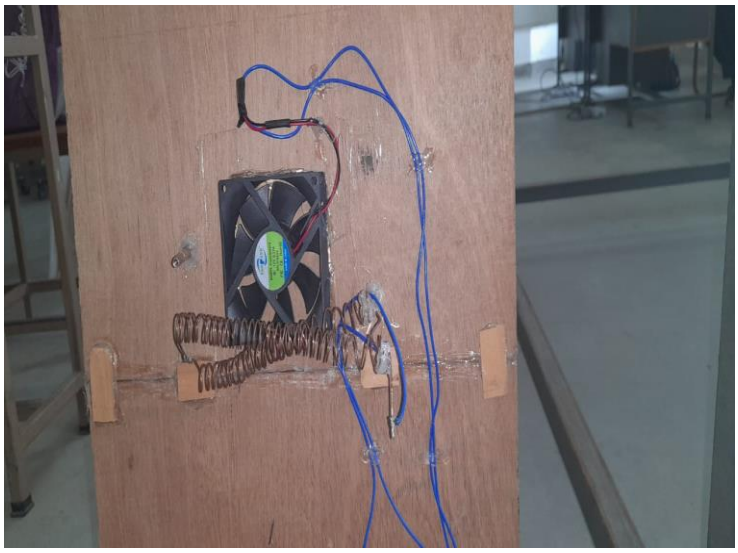

Figure 5: Inner top view of egg incubator.

JEEVANA S

SANJAI B

JANARTHANAM T

KAVIARASI S

SATHIYA PRIYA S

SRI HARANI P A

SANGAVI D

KAVIYA S

SWATHI G

FIGURE 6: Inner bottom view of egg incubator.

JEEVANA S

SANJAI B

JANARTHANAM T

KAVIARASI S

SATHIYA PRIYA S

SRI HARANI P A

SANGAVI D

KAVIYA S

SWATHI G