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# REALTIME MONITORING & CONTROLLING CHICKEN HATCHERY PROCESS

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***Abstract:***

This thesis demonstrates real time monitoring and controlling system for Chicken hatchery using embedded system.The Room temperature and Humidity level are prominent parameters which are responsible for the sustained growth of chicken. The humidity is a key parameter that has to be maintained between 65% and 75%. Temperature is in turn another important parameter which affects the health of Chicken growth as well as the Humidity range. The proposed system monitors and controls the above said parameters. The simulation has been done in the Proteus professional software.

***Keyword: component; formatting; style;***

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## Introduction

Embedded & Real-time systems could be standalone or connected. A real time system is often composed from a number of periodic (time triggered) and sporadic (event triggered) tasks which communicate their result by passing messages. In distributed real-time systems these messages are sometimes sent between processors across a communication device. To guarantee that the timing requirements of all tasks are met, the communications delay between a sending task and a receiving task being able to access that message must be bounded.Embedded Technology is now in its prime and the wealth of knowledge available is mind-blowing. However, most embedded systems engineers have a common complaint. There are no comprehensive resources available over the internet which deals with the various design and implementation issues of this technology. Intellectual property regulations of many corporations are partly to blame for this and also the tendency to keep technical know-how within a restricted group of researchers.

**1.**2OBJECTIVES OF THE THESIS

The objective of the thesis is listed below

1) To improve the probability of chicken hatching using embedded system (I2C).
2) To maintain Temperature and Humidity in predetermined level for good hatching.
3) To simulate system in Proteus Professional software.

LITERATURE REVIEW

Aji Joy (2011) proposed a Real Time Monitoring and Controlling System for Fish Hatchery. The proposed system monitors and controls pH and temperature of the system. A real time video streaming unit is also incorporated into the system in order to have round the clock surveillance of the farm. Web server is designed to host a portal and help the person in charge to monitor the farm remotely.

Debasmit Banerjee and Subir Biswas (2011) proposed Design and Implementation of a Machine Learning Based Activity Classification Mechanism for Hens Using a Wearable Sensor System. In the study, laying hens were fitted with a lightweight (10g) wireless body-mounted sensor to remotely sample activity data. Specific machine learning mechanisms are used on the features extracted from activity data to identify a target set of activities of the hens. The paper establishes technological feasibility of using such body-mounted sensor systems for accurate hen activity monitoring in a non-cage housing system.

Drishti Kanjilal, Divyata Singh, Rakhi Reddy, Prof Jimmy Mathew proposed a A proposal for implementing automatic lighting system, auto-sprinkler system, in-house temperature control and security for farm houses. As temperature and motion sensitive devices will only work when required, such a system conserves energy effectively. The paper also presents features to enhance the security of the farm. Energy efficient farm automation is the need of the hour in an agro-based economy.

Wenjing Huang, Fumihito Arai, and Tomohiro Kawahara (2014) proposed a Novel biomedical platform of a cubic (artificial) eggshell containing a chick embryo. The use of this proposed platform can eliminate the use of large animals as experimental models, making it more ethically accepted. It also has the advantages of low cost and a small size. The specific design and fabrication method of the cubic eggshell uses polydimethylsiloxane (PDMS) and polycarbonate, which were shown to achieve the required specifications of the proposed platform. The viability of the chick embryo in the cubic eggshell was confirmed through basic experiments. Finally, surgical tools were inserted into the cubic shell and the internal organs were operated on to confirm the use of the developed cubic shell as an appropriate platform for microsurgical training.

BLOCK DIAGRAM OF EXISTING SYSTEM

The figure 3.1 shows the block diagram of the existing system which has controlled manually by human.

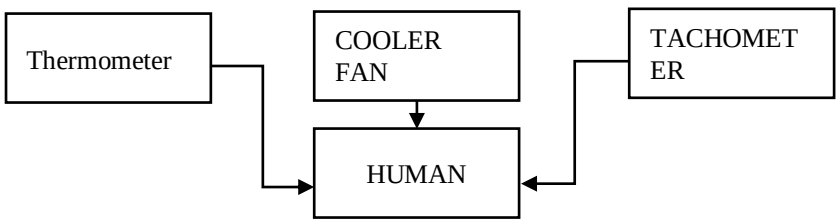


Figure 3.1 Block diagram of existing system.

The existing system involves hatching process has been done by manually with help of man power. Here one man monitoring each and every parameters during hatchery process. According to that parameter cooling fan has been on and off manually.

BLOCK DIAGRAM OF PROPOSED SYSTEM

The figure 3.2 shows the block diagram of the proposed system which implements a real-time system for monitoring and controlling hatching process.

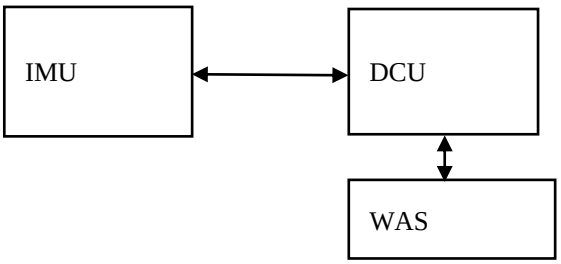


Fig. 3.2 Block Diagram of Proposed System

The main objective of proposed system is to provide a technology oriented, low-cost,System for monitoring Incubator. The developed system consists of three key components/modules,
(a) Incubator Monitoring Unit (IMU)
(b) Display and Control Unit (DCU) and
(c) Warning Alert System (WAS).

IMU monitoring the parameters like temperature, humidity and RPM. These parameters can be send to DCUthrough IC bus.DU display all the parameters inside the incubator. Warning alert system alerts when threshold Value for all parameter decreases as well as increase at any critical situation.
These 3 modules are integrated into an embedded system and are tested to satisfy the functionality. The prototype developed is ready for real-time monitoring and controlling chicken hatchery process.

3.3.1 Incubator Monitoring Unit Block Diagram

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