

Miniature Cold Storage Based On IOT

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Students^{1, 2, 3, 4} Guide⁵

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Abstract

If we think about the Climatic Condition, Environment is not same every time. So, it is the biggest need that system must be designed according to automatic maintain the inner parameters of the cold storage with outer environment. The main idea of this concept is to overcome time complexity and lack of automation which is faced in preserving the food products or agricultural yields for a longer period. In this proposal we implement a framework for cold storage based on IOT (Internet Of Things) technology by using Micro-controllers and Sensors. System innovates some technique to safely preserve various food products i.e. Radio frequency identification for secure door, Real time database for storing requirements for food parameters, various kind of sensors to monitoring of cold storage/ Environment of cold storage/Real time food monitoring, odour less cold storage for this system has Disinfectant Spray on particular time, Alert system which gives all abnormal condition alerts of the system. So, the cold storage can be enhancing the better and fresh food storing farmers' efforts.

Keywords: *internet of things (IOT), sensors, microcontroller, ESP8266, cloud computing with thing Speak, Arduino.*

INTRODUCTION

Oman is a Sanskrit word, Oman means farm helper. In our Miniature Cold Storage

Based On IOT, it will tries to overcomes the time complexity and lack of detailed automation which is faced in preserving

the crop yields using cold storage system to stock up the food products or agricultural yields for a longer period. In this proposal we implement a framework for cold storage based on IOT (Internet of Things) technology by using Micro-controllers and Sensors. System innovates some technique to safely preserve various food products i.e. Radio frequency identification for secure door, Real time database for storing requirements for food parameters, various kind of sensors to monitoring of cold storage/Environment of cold storage/Real time food monitoring (DHT11: Temperature and Humidity), odour less cold storage for this system has Disinfectant Spray on particular time,

Alert system which gives all abnormal condition alerts of the system. So, the cold storage can be enhancing the better and fresh food storing farmers efforts.

Components

- Arduino software
- Cloud computing with thing Speak
- Android application with MIT app Inventor 2
- ESP 8266
- EM 18 RFID Module
- DHT11
- DC Fan
- Water pump
- Cold Storage Box.

MODELING AND ANALYSIS

Block Diagram

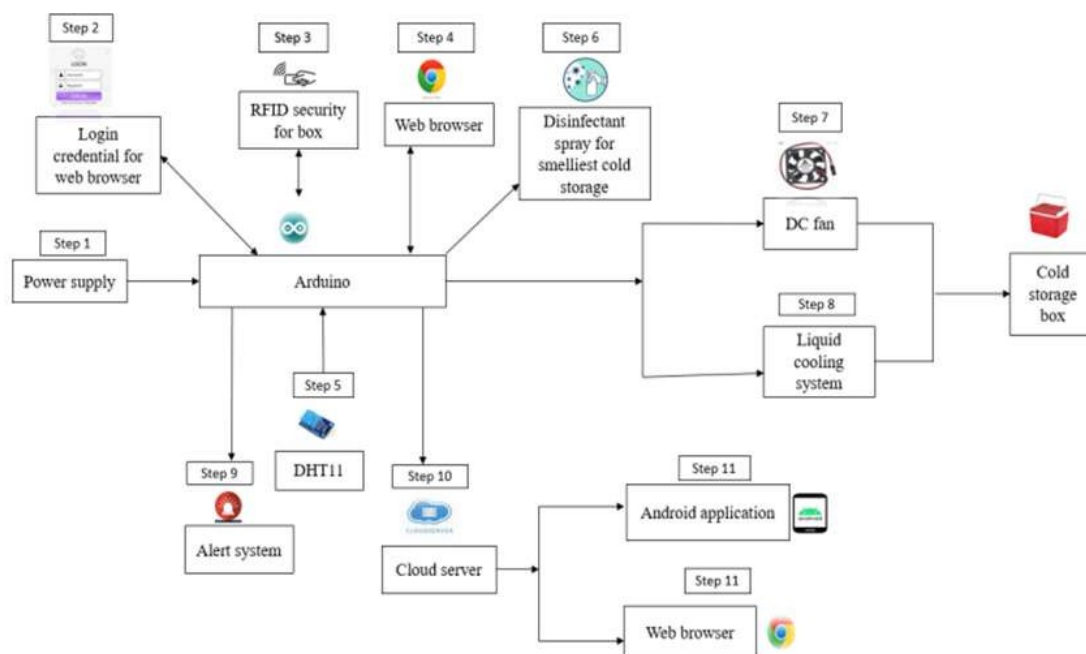


Figure 1

Step 1: It provides supply to your system.

Arduino: It is a brain of the system. It works or gives input / output instructions to respected hardware and software.

Step 2: Login to web browser.

Authorized person will login to the web browser with login credential.

Step 3: RFID security for box.

Authorized person will be open the box with authorized RFID key for storage of box.

Step 4: Selection of food.

Authorized person will select the food from web browser which will be stored in the cold storage.

Step 5: DHT11.

Temperature and humidity will be monitor via system and visualize on cloud base system android application.

Step 6: Oder system.

Disinfectant will be spread at the time of box opening for smell less storage system.

Step 7 & 8: DC fan and liquid cooling system.

The DC fans and liquid cooling systems will be activate according to the parameters of the selected food.

Step 9: Alert system.

In case of DHT failure (High/Low) alert system will provide the alert to respected person.

Step 10: Cloud server.

Arduino stores the data of humidity and temperature in the cloud computing service.

Step 11:Android application or web browser.

User can monitor the data of the temperature and humidity via android application and web browser.

CONCLUSION

This project describes information about miniature cold storage based on IOT and Cloud Computing. It helps to the farmers, chemical firms and healthcare industry as well as restaurants for preserves the goods. This technology is used to store food or any products for long period of time.

Applications

- 1) It can be use for different foods and various kinds of applications.
- 2) It can be used for vaccine storage center.
- 3) It can be used in blood banks for blood storage.
- 4) It can be used as organs storage center.

- 5) It can be used in chemical lab
- 6) It can be used in restaurants.

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Future scope

Our System will control the accidents and it will save the person's life. Better scheduling or route planning is needed. So, in the coming year, it is going to play a major role in our day-to-day life. This device invention is useful for those accident which occurred in deserted places, ghat places as well as in midnights where people are not seen more. This vehicle tracking and accident alert features play a more important role in present as well as in future.

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