INTELLIGENT CARGO MANAGEMENT SYSTEM USING IOT

Introduction

Overview:

Due to increasing public awareness on product safety and quality, the cold chain is developed to maintain a designated range of environmental conditions using certain refrigeration and dehumidification systems.1The cold chain also refers to the handling and traceability of various environmentally sensitive products (ESPs), such as agricultural, frozen, and pharmaceutical products.2–4In real- life situations, ESPs are typically handled in three different storage regions, namely temperature controlled, chilling and freezing sections, so as to meet their distinctive storage requirements. In addition, customers who own the ESPs will frequently monitor the storage conditions, especially for ambient temperature and humidity, because fluctuation of storage conditions may lead to product quality or even obsolescence.

Purpose:

Things-based **Cargo Management System IOT** is designed to formulate effective storage guidance under a cold chain environment. The wireless sensor applications are built on **IOT** platform to achieve the goals of real-time monitoring and alert **management.**

Literature Survey

Existing problem:

In the case of normal trucks while transporting the food items to larger distances.If any damage has occurred to the food it is not possible all the time to a human to find out the damage .So in that case the whole food may get damage.

PROPOSED SYSTEM MODEL

The project architecture is based multiple monitoring nodes and making use of arduino, which gathers and processes the data generated by different sensors like temperature sensors and gas detectors. A cloud platform is used to visualize and analyse the data thus generated and also thereby enabling us to perform real time tracking and possibly implement a warning system, send notifications through the cloud or an audible alarm.

Theoretical Analysis

Block diagram:
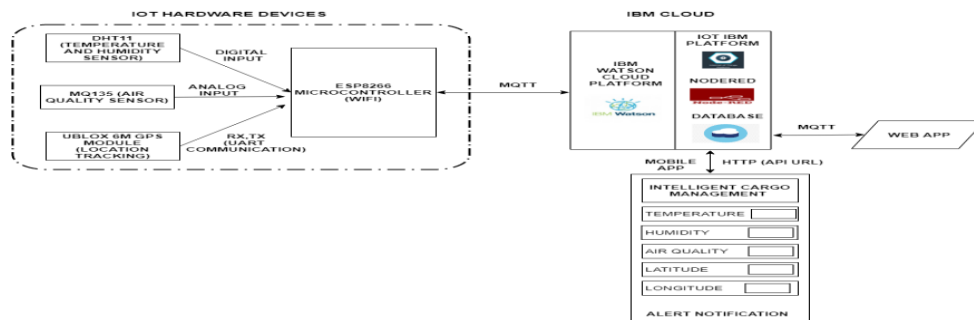
Hardware/Software designing:

- The hardware part of the project involves the arduino.

- The 3-sensors are connected to the arduino via the I2C interface.

- The sensor values are read by the   processed and then sent to the IBM Cloud services using the internet module.

- The data send to mobile application which was developed using MIT app inventor.

- Here we use IOT device similar for coding, Node - Red, software tools are used.

Experimental Investigations:

There are several IoT authentication challenges and issues that need to be understood before employing the right security solution that can dynamically vary with the situation Based on certain critical situations such as IOT area monitoring applications, frequent authorization and authentication are necessary and could dynamically vary, potentially resulting in changes to the authorization of IoT devices. To address these issues, automated mutual authentication without user intervention is required in supporting users from remembering passwords for a large number of devices.

Result:

7995953871:The temperatureis high.

7 min ago

7995953871:The humidityis low.

7 min ago

7995953871:The longitudeis high.

7 min ago

7995953871:The temperatureis low.

7 min ago

7995953871:The longitudeis high.

7 min ago

7995953871:The temperatureis low.

7 min ago

7995953871:The humidityis high.

7 min ago

Text message

temperature 98

humidity 72

air 98

latitude 62

longitutde 7

The operation lookup in pairs cannot accept the arguments: , ["temperature"], [502], ["not found"]

Advantages & Disadvantages of IOT in industries:

ADVANTAGES

- Security of Data.
- Greater efficiency.
- Better Service.
- User friendliness and interactive.
- Minimum time required.
- Easy to use.

Disadvantages:

- Internet connectivity is mandatory.

CONCLUSION

➢ In this paper we have implemented an intelligent cargo system for efficient transportation of goods from a given source to destination. The sensors are simulated using Cooja and also the route map is visualized. The most preferential route is taken in order to effectively maintain the state of the product in the desirable state. The machine learning algorithms like decision tree, K-Nearest Neighbors are used to learn from the past experiences and decide on the best possible route to maintain the freshness of the products. We use a training set to learn and the results obtained from them are used to decide future predictions.

➢ These predictions are applied to a test set. In addition to finding the optimized route, the vehicles are tracked based on the GPS trajectories. Simulation is used to generate the trajectories of a route. As future work real time situations like traffic, truck breakdown and catastrophic effects can be considered in order to improve the results. Real time sensor data could be obtained using various routing protocols over the wireless medium.

Future Scope:

➢ It increases more applications for more and different problems and it increases Chances and decreases the problems.