Cold Chain Management System using IOT

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By Mahdi Mirzahosseinian - S5436927

Introduction to Cold Chain Management

- Definition: Cold chain management is storing and transporting temperature-sensitive products within specific temperature ranges.
- Importance: Essential for the safety and effectiveness of food, pharmaceuticals, and chemicals.
- Challenges:
Temperature changes can cause spoilage, reduced effectiveness, and significant financial losses.

IoT in Cold Chain Management

Purpose

Integration of IoT technologies to monitoring environmental conditions (temperature and humidity).

Benefits:

- Real-time monitoring
- Automated alerts and notifications
- Data logging for analyzing

Technologies and Components of the System

ESP32

- Main microcontroller; reads sensor data, connects to Wi-Fi, publishes data to Ubidots, controls buzzer, handles keypad input.

DHT22 Sensor

- Provides temperature and humidity readings.

Buzzer

- Make Sound alert when temperature/humidity is out of range.

4x4 Matrix Keypad

- Inputs commands to set temperature/humidity ranges

MQTT(Message Queuing Telemetry Transport)

- Enables the transfer of sensor data to the Ubidots platform.

Ubidots

- A platform for collecting, visualizing, and storing the data sent by the ESP32

Let’s Run and Monitor the System

Run

Monitoring

Q&A

Thank you for your time and attention.
Questions?