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IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE

ABSTRACT:

This will be an integrated method in the IIOT space created for perceptive agriculture that is moving forward with the arrangements using open source software and low-power hardware. The goal of this project is to produce a monitoring system for farm safety against animal assaults and environmental conditions.

Smart farming typically makes use of Industrial Internet of Things (IIoT) advancements to highlight the standard of agricultural. This project work includes many types of sensors, controllers, and positioners for WSN and ARM Cortex-A boards. The major aspect of the classification is 700mA or 3W power consumption.

The board is interfaced with a variety of sensors, including the DHT 11 Humidity & Temperature Sensor, PIR Sensor, LDR Sensor, HC-SR04 Ultrasonic Sensor, and cameras. IOT devices are able to adapt to any evidence found near agricultural areas.

The camera will turn on and begin to record an image as soon as the passive infrared sensors (PIR) detect motion within a 10-meter range.

The image will be stored onboard and in the Internet of Things (IoT) cloud, and immediately a message will be generated using a SIM900A module to inform the recorded quantity about the intrusion with the data of the temperature and humidity obtained by the device.

After analyzing the available data, if it is determined that the intruder is not human, the system raises a buzzer sound to alert people to the intrusion. Through systems that can be wired or communication networks, data gathered by the sensors will be provided to the ARM Cortex A processor.

The information in the Porter is validated and synchronized with exceptional data points such the temperature, humidity, and soil moisture readings.

An announcement is sent to the farmer's phone or the internet if there is a difference with the predetermined threshold rate. The farmer's mobile device's database will be set up to produce the desired outcome and perform the required action.

The Internet of Things (IoT) is a developing paradigm that aims to connect various intelligent physical elements in order to modernize various domains. Numerous IoT-based frameworks have been established to autonomously manage and track agricultural fields with the least amount of human involvement.

This paper provides a thorough examination of the major components, new technologies, security concerns, challenges, and future trends in the agriculture domain. This paper contains an in-depth report on recent advancements.

The purpose of this survey is to assist potential researchers in identifying relevant IoT problems and selecting appropriate technologies based on application requirements.

In addition, the importance of IoT and Data Analytics for smart agriculture has been emphasised.