

# A Study On IOT Applications In Multi Domains

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**Abstract :** Now a days Internet of Things is most important role in smart agriculture. This applications to provide various types of services to farmers for smart farming. Mainly study on four models in this technology there are, first one is monitoring temperature in agricultural field through sensors using CC3200 to capture images and send that photos to farmers mobile through internet, second one is controlling the room temperature by using remote smart device, the operations performed by sensors and zigee modules, camera and actuators with raspberry pi, third one is light controlling system for smart agriculture, fourth one is motion detectors, it's protected from damage crops by PIR sensors.

**IndexTerms - Sensors, Controlling, Smart Agriculture, Automation.**

## I. INTRODUCTION

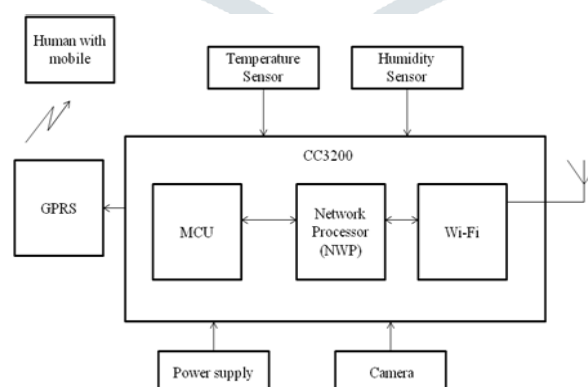
The Things Internet (IoT) is widely used in connectivity devices and data collection. Things use IOT plans to maintain and interact with Internet data and information. System users can register their sensors, stream data and process information. IOT applies to different methods of agriculture. IOT Applications Smart Cities, Smart Environment, Smart Water, Smart Metering, Security and Emergency, Industrial Control, Smart Agriculture, Home Automation, e-Health etc. Depends on the 'Internet of Things' device. Information and send it to the customer.

### 1.1 Why do we need IOT in agriculture?

From the United Nations Survey - Food and Agriculture Organizations, by 2050 global food production should be increased by 70%. Food is the main source of agriculture for human species and plays an important role in the country's economy. This will provide a large amount of job opportunities to the public. Farmers are still using traditional methods of agriculture that reduce yields of crops and fruits. Therefore, crop yield can be improved by automatic machines. In order to increase yields, agriculture requires modern science and technology implementation. We can expect low-cost production by monitoring iodine, monitoring of soil, temperature and humidity monitoring, rainfall, efficiency of fertilizers, monitoring of storage capacity of water tanks and identifying theft in agricultural areas.

## II. MONITORING TEMPERATURE

Internet of Things (IoT) plays a key role in smart farming. Smart farming is an emerging concept due to IOT sensors capable of providing information about their farming fields. Utilizing technology using IoT and Smart Agriculture Automation using the consequences. Environmental factors monitoring is a major factor in the improvement of efficient crop yields. The CC3200 uses a single chip to monitor the temperature and humidity of the farm through sensors. Camera interface with CC3200 has been designed to capture photos and send photos via MMS to the riders mobile using Wi-Fi[1].

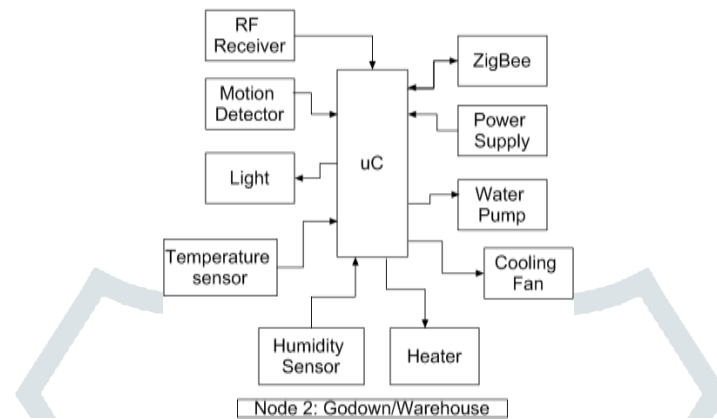


**Figure 1: Block diagram of monitoring temperature**

CC3200 The main part of this proposed system includes the microcontroller, network processor and Wi-Fi units in the same dai. It is portable, low power for battery-operated, secure and fast connection. Environmental conditions variations affect the overall yield of the crop. Proper growth and proper health conditions are required. Sensors are used so that it is important to monitor the condition of the crop field. It is used to send current images to the farm by GPRS.

### III. ROOM TEMPERATURE MONITORING

Agriculture plays a key role in the development of agriculture. 70% of India's population is based on agriculture and about one-third of the national capital comes from agriculture[2]. The problems related to agriculture have always disrupted the development of the country. The only solution to this problem is smart agriculture by modernizing the traditional methods of agriculture. Hence, the project uses automation and ioty technologies to make farming smart. The Smart GPS-based remote controlled robot is the highlighting feature of this project to handle operations such as weeding, spraying, humidity sensing, bird and animal killing, surveillance, etc. The second is the proper irrigation time field data with smart control and clever decision. Thirdly, smart warehouse management such as temperature management, humidity management and theft identification in the warehouse. Controlling these operations is by any remote smart device or computer connected to the Internet, and works with interfacing sensors, Wi-Fi or ZigBee modules, camera and micro controller and accessors.



**Figure 2: shows the block diagram of room temperature monitoring**

It has motion detector, light sensor, moist sensor, temperature sensor, room heater, cooling fan fully connected to AVR microcontroller. The motion detector detects movement in the room when safety mode is turned on and detects motion, which sends a warning signal to the user via the raspberry pie and thus provides theft identification. If the temperature sensor and humidity sensor crosses the temperature and humidity and value to the maximum, then the room heater or cooling fan will automatically switch to the temperature and moisture management on / off. Controls water pump based on soil moisture data.

### IV. LIGHT AUTOMATION

India's agricultural growth does not meet its needs and demands and is due to the lack of inefficient methods and the lack of technology that we are currently experiencing. So our thinking is to solve this problem using the Internet's Things, so that the farmer can work on his particular work, which reduces the additional burden[3]. There are some objectives to reduce the human resources in the field of agriculture to improve the data recording processes, improve crop yields, reduce the area of harvest and improve efficiency. If the crop is dry or moist, agriculture is suitable for wet or dry crops, assessing the water level, automation of irrigation system based on soil moisture and water level, Automation for intensifying humidity, temperature and dew point measurement, automation, intruder alarm Using infrared radiation and ultimately finally ri Raitiyr report of the sensor output from the area or agricultural bhumulanundi Notification System.



**Figure 3: shows the block diagram of light automation**

A Light Dependant Resistance (LDR) or a photo resistor is a device whose resistance is the work of the electromagnetic radiation of the event. Hence they have light sensitive devices. These are also called photo conductors, photo conductors or photocells. These are made of semiconductor material with high resistance. A Light Dependent Resistor (LDR) or a photo resistor incident is a function of electromagnetic radiation. So they are light sensitive devices. These are called photo conductors, photo conductors or photocells. High-resistant semiconductor material is made.

The function of the photodynamic conductivity that increases the conductivity of LDR material by physical matter. LDRs have light-dependent devices, whose resistance is reduced, so the light falls on them and grows in the dark. When a light-dependent zone is placed in the dark, its resistance is very high. In our project, in fact night, the lights are automatically switched off and will be turned off during the day.

## Advantages

- Avoids excess energy consumption as the lights are automated
- No human intervention is required

## V. MOTION DETECTION

Damage to crops Animals usually enter the field and destroy crops. Farmers are alerted about infiltrators by PIR sensors. A passive infrared sensor (PIR sensor) is an electronic sensor that measures the infrared (IR) light from the objects in its range. They are often called motion detectors[4].

All objects above the extreme zero release thermal energy in the form of radiation. In this case, the passive term PR devices indicate that no power can be generated or transmitted for purposes. Along with a buzzer, it is used as a pirate alarm, helping to identify any physical intrusion into agriculture. They work fully by identifying the power given by other objects. Thus the sensor does not use the power of the IR rather than the proximity sensor.



Figure 4: shows the block diagram of motion detection

## VI. CONCLUSION AND FUTURE WORK

To suppress Indian targets to build model cities and digital India initiative as a major program across our entire idea of digital rural agriculture in India. With agriculture automation, the farmer will focus only on his specified role and the remaining things are taken care of through the Internet of Things. We believe that by using advanced technologies for modern farming practices, they can help them to generate higher yields for acre and fix common problems faced by our farmers and reduce human resources and produce economically high yields. Limited area. The future plans analyze the fertilizer content of the soil and leverage it to the maximum product for better productivity. In urban farming, geo-spatial satellite also has a huge impact on agriculture.

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