International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 06 Issue: 05 | May 2019 www.irjet.net p-ISSN: 2395-0072

IOT Based Wireless Sensor Network for Prevention of Crop Yields from Animals and Smart Farming

YATHEESH GOWDA D

Electronics and Communication Engineering, *Bangalore Institute of Technology,* Bengaluru, India

---

Abstract - *Untamed life prerequisite covers human populace, making cost to occupants and developed field. Wild creatures regularly obliterate standing harvests, because of which yearly creation of harvests decreases making monetary misfortunes ranchers. In our locale, rancher suicide is huge issue because of low efficiency among homesteads. This low efficiency is a result of two primary reasons for example Yield decimated by wild creatures and Crop pulverized commonly object. This paper gives survey to complete specialized arrangement utilizing remote sensor organize (WSN) and Internet of Things (IOT) to the ranchers to avert their harvests from wild creatures. It incorporates every one of the sorts of sensors, controller, actuator required for WSN and raspberry pi as a heart of the framework.*

Key Words: IOT, Animal Intrusion, MQ7sensor,

1. INTRODUCTION

The conservation of gather field from the wild animal has been a rule purpose of this paper. The animals from the wild zone are reliably striking to alter from such a substantial number of quite a while and the protection of this gather field from wild animals is the serious issue. The wild animals face an inadequacy of water and sustenance due to which they move towards the cultivating region which makes phenomenal incident to the yields and yearly pay of farmers, when wild animals enter in a residence there is a necessity for a prepared system to keep crops from hurts from wild animal. The proposed paper is completely specific response for each farmer using remote sensor compose (WSN) and Internet of Things (IOT). This paper bases on estimation to perceive the proximity of animals near the yield field. Each Sensor center point requires four major units for instance recognizing unit, getting ready unit, handset unit and a control unit, every center point will have all of the sensors required to perceive regular life activity so as the essential movement will be taken by actuator with the objective that the wild animals will escape. The position of the animal once perceived is trailed by ir sensor then raspberry pi snap a photo of animal using camera.

1.1 EXISTING METHOD:

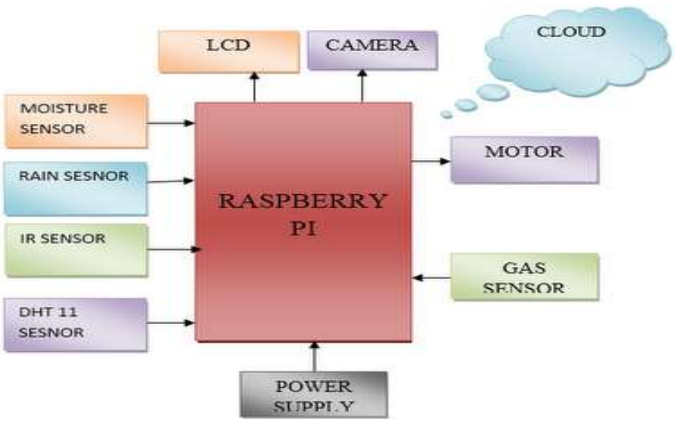
In existing technique electric wall used to ensure the harvests from the wild creatures. Because of high power creatures are hurt generally and it isn't just influences wild creatures it too risky to the pet creatures and even people. The electric wall is utilized for counteracting the harvests yet in existing strategy camera was utilized for identifying the creatures which is financially high cost. The sign is accessible in the framework yet it sends the message just to the backwoods officer not to the leaving individuals in the farmland.

2. PROPOSED METHOD

A framework is actualized to identify interruption of creatures in homesteads utilizing remote sensors and bells which distinguishes the creatures and produce acoustic sounds. At different areas around the ranch, movement sensors are set where certain separation is kept up among them and one of the movement sensors is made as the unified. The sensors which are available every now and again sense the development and pass it to the Coordinator. Creatures are being identified by the movement sensors in the rural territory. At the point when a creature or human is being identified by the sensors in the horticultural region the sensors are enacted and camera catches picture and framework produces sounds through the bell and will give a minor stun to the creature. This sound disturbs the creatures and they can't suit at that place and because of minor stun creatures will fall. Through Global System for Mobile module alert, messages are sent to the rancher. Along these lines, the pulverization brought about by the creatures in the rural fields can be maintained a strategic distance from. This can follow the interloper.

2.1 BLOCK DIAGRAM

The microcontroller and the sensors are initialized, the main aim of this project is prevent the intrusion of animal in the farm land and also making our land to smart farming. When IR sensor is detected camera will capture image and that image is processed by image processing by OPEN CV technology.



Then moisture level in the soil is monitored by soil moisture sensor when moisture content is low motor will turn on or else motor will be in off condition.

Rain sensor is used to detect rain is coming or not. Gas sensor is used to detect whether hazardous gases are present in environment or not. DHT11 sensor is used to monitor temperature and humidity in the environment. All the measured data from sensors are stored in cloud and later can be used for analytics.

2.2 OPEN CV

OpenCV-Python is a library of Python ties intended to take care of PC vision issues. OpenCV-Python utilizes Numpy, which is an exceedingly upgraded library for numerical tasks with a MATLAB-style punctuation. All the OpenCV cluster structures are changed over to and from Numpy exhibits.

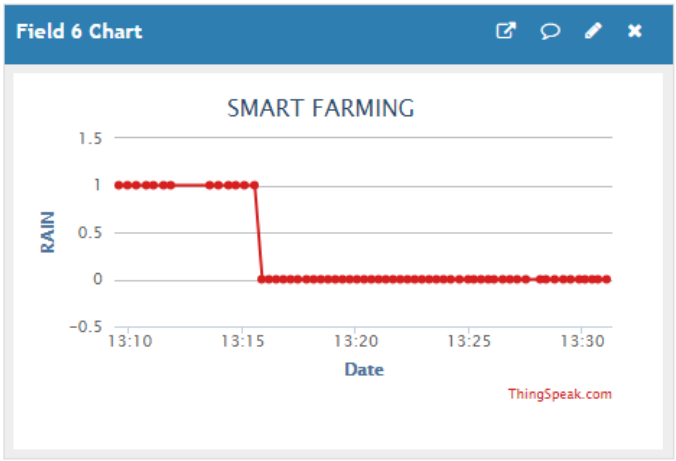
2.3 IOT:

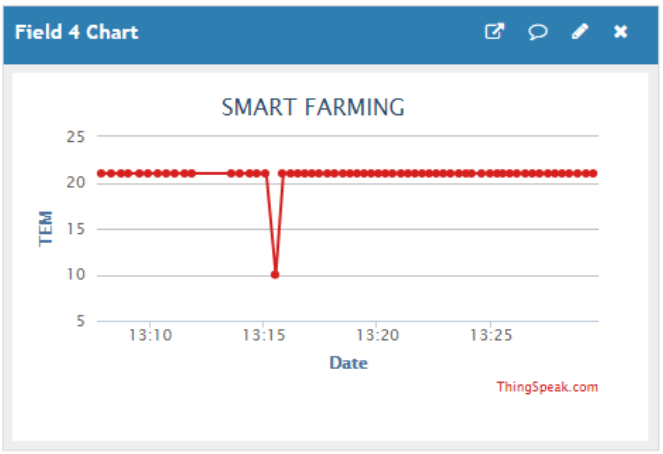
The Internet of Things (IoT), also once in a while insinuated as the Internet of Everything (IoE), contains all the web-enabled contraptions that accumulate, send and follow up on data they secure from their incorporating surroundings using embedded sensors, processors and correspondence gear.

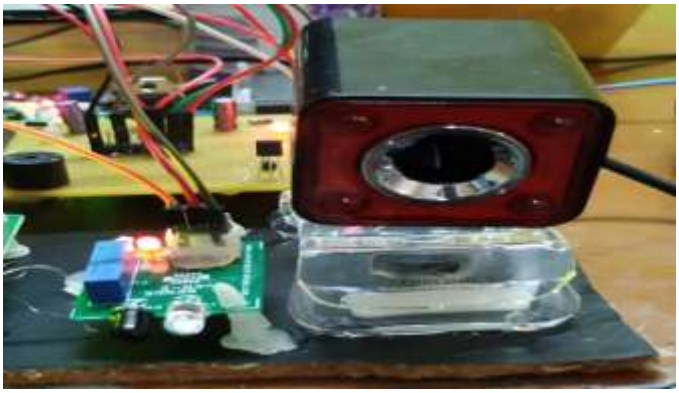
The Internet of Things is only "An arrangement of Internet related items prepared to accumulate and exchange data." It is commonly consolidated as IoT. In a clear way to put it, you have "things" that sense and assemble data and send it to the web.

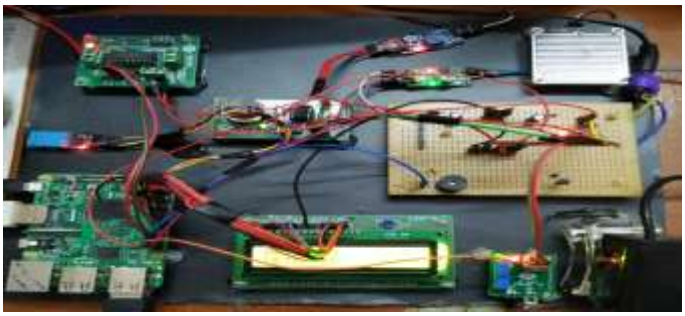
IoT is short for Internet of Things. The Internet of Things implies the reliably creating arrangement of physical articles that feature an IP address for web organize, and the correspondence that occurs between these things and other Internet-engaged devices and systems.

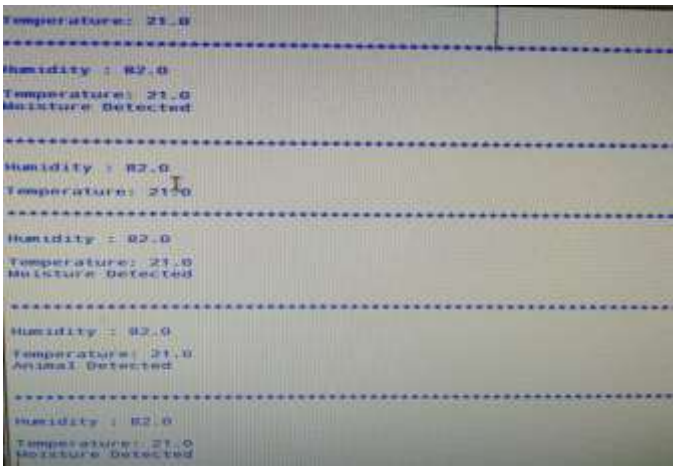
3. RESULT











4. CONCLUSION

The issue of yield pulverization by wild creatures has become a significant issue for the rancher. Powerful arrangement and pressing consideration is expected to unravel this significant issue. To tackle the issue of rancher we have structured a keen farmland security framework with the assistance of IOT and open cv. The fundamental point is to forestall the loss of corps and shield the territory from wild creatures which makes real harm the rural region. So our specialized methodology will be useful to the ranchers in shielding fields and spare them from money related misfortunes and furthermore spares them from useless endeavors that they suffer for the security of their fields.

REFERENCES

[1] R.Newlin Shebiah, B.Deeksha,S.Aparna “Early warning system from threat of wild animals using raspberry pi”.(ICRTECITA-2017)

[2] Pooja G,Mohmad Umair Bagali “A smart farm land using raspberry pi crop vandalization prevention and intrusion detection system”.(IJARIIE-ISSN(0)2395-4396)

[3] Bindu D,Dilip kumar M D,Mamtha B,Prashanth P “Prevention of wild animals entering into the agriculture field ”(NCETEC-2017)

[4] Isha Dua, Pushkar Shukla, Ankush Mittal” A vision based human - elephant collision detection system” IEEE International Conference on Image Processing. (25 Febraury,2016) pp:225-229

[5] Sheela.S, Shivaram. K., Chaitra. U, Kshama. P, Sneha. K, Supriya. K” Low Cost Alert System for Monitoring the Wildlife from Entering the Human Populated Areas Using IOT Devices” International Journal of Innovative Research in Science, Engineering and Technology. (10 May,2016) Vol. 5, Special Issue 10, May 2016.

[6] T. Burghardt and 1. Calic, "Analysing animal behaviour in wildlife videos using face detection and tracking," in IEEE Proceedings-Vision, Image and Signal Processing 153(3), pp. 305-312,2006.

[7] A.Mammeri, D. Zhou, A. Boukerche, and M. Almulla. "An efficientanimal detection system for smart cars using cascaded classifiers." In 2014 IEEE International Conference on Communications, pp. 18541859.2014, IEEE.