

# IoT Based Intelligent Farming

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## **ABSTRACT:**

Internet of Things (IoT) is a technology that allows things to communicate and connect with each other. Change the patterns and processes in both industry and agriculture towards higher efficiency. An intelligent farming system (IF) is to improve the production process in planting. Intelligent Farming is composed of two main parts which are a sensor system and a control system. The control part is the watering and roofing systems of an outdoor farm based on the statistical data sensed from the sensor systems. A set of decision rules based on the sensed data is developed to automatically make a decision on whether the watering and roofing system should be on or off.

## **INTRODUCTION**

The crops are still cultivated in a technical manner for the best harvest and the highest quality of production. When a plant has the disease, we can say that leaves are the fundamental marker of the plant's disease.

We can generally observe the spots on leaves due to illness. When the plant has a lot of infection, the whole leaf is secured by the sickness spots.

Presently multi-day innovation assumes an essential job in every one of the fields yet till today we are utilizing some old procedures in horticulture.

## **PROJECT AIMS AND OBJECTIVES**

The main objective of the project (Intelligent Farming) was a control system for intelligent farming for outdoor farming. We are using solar energy to power the motor for energy conservation.

From the IoT cloud, after analyzing the leaf disease we are giving the respective remedy. This helps to yield can be increased and the use of technology can improve quality. Solar energy plays an important role as a primary source of energy, especially for rural areas. Therefore, this project integrates solar energy to power the water pump and motor. By collecting a dataset for leaves, we are training the dataset for analyzing leaf diseases. The analyzed result is transmitted to the microcontroller for uploading to the IoT cloud and further measurements. To analyze leaf and predict the disease and give respective remedy.

This saves time for the farmers.

This gives good crops for the farmers.

### **Requirements:**

#### **Hardware Requirements:**

|           |                                                            |
|-----------|------------------------------------------------------------|
| Processor | - Dual Core                                                |
| Speed     | - 1.1 G Hz                                                 |
| RAM       | - 4 GB (min)                                               |
| Hard Disk | - 20 GB                                                    |
| Key Board | - Standard Windows Keyboard Two or Three Button Mouse SVGA |
| Mouse     | -                                                          |
| Monitor   | -                                                          |

#### **Software Requirements:**

Operating System: Windows XP,7,8, GPU system, NVIDIA graphic card Technology: Python

Front End: Tkinter

#### **IDLE: Python 2.7 or higher Survey Outcomes**

This project has concentrated on recognizing the green leaf diseases which assist the farmers to take a proper measurement and increases the production of plants. An automated system is proposed for the diagnosis of three common green leaf diseases (Brown spot, Leaf blast, and Bacterial blight) and pesticides and/or fertilizers are advised according to the severity of the diseases. The type of green leaf disease is recognized by CNN. After recognition, the predictive remedy is suggested that can help agriculture- related people and organizations to take appropriate actions against these diseases. The analyzed result is transmitted to the microcontroller for uploading to the IoT cloud and further measurements. A moisture sensor is used to detect soil dry and wet states. DHT11

sensor will measure temperature and humidity on the farm. Then from the IoT cloud after analyzing the leaf disease we are given the respective remedy.

### **CONCLUSION & FUTURE SCOPE**

A solution for tracing, tracking & managing your farming activities. Suitable smart agricultural technologies target for large-scale producers to double their efforts by increasing returns on investment and land. To analyze animals to predict disease and give remedies. To make a decision, the model requires an important information piece which is the sensed data from the sensors in the plot. Based on this information, we have set up rules for making a decision in our control system. Moreover, we have also provided functions for users to manually control the watering and roofing systems by monitoring the sensed data.

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