PROJECT OBJECTIVES

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One of the main problem faced by the farmers is vandalization by animals and birds. Whether the animals are wild or domestic, all causes damage to the crops. As a result farmers faces a huge loss. They can’t guard their field all the time. So, the main aim of our project is to protect the crops from damage caused by animals and birds.

In this modern world, the interest of IoT has been expanded all things. This system monitors the crops 24\*7 and protect it from animals and birds. This system detects animals & birds and capture their image and save it in the cloud object storage. If any animals or birds detected, the system generates an alarm and keeps the animals away from the crops. This system also helps the farmers in monitoring different parameters of their field like soil moisture, humidity, temperature using sensors. The parameters can be seen by farmers using web or mobile application from anywhere and also they can control motor pumps through application.

**Project Flow:**

1. The device will detect the animals and birds using the Clarifai service

2. If any animal or bird is detected the image will be captured and stored in the IBM Cloud object storage.

3. It also generates an alarm and avoid animals from destroying the

Crop.

4. The image URL will be stored in the IBM Cloudant DB service

5. The device will also monitor the soil moisture levels, temperature, and humidity values and send them to the IBM IoT Platform

6. The image will be retrieved from Object storage and displayed in the web application.

7. A web application is developed to visualize the soil moisture, temperature, and humidity values

8. Users can also control the motors through web applications.

**To develop this project successfully we have to complete all the tasks as given bellow:**

a. Create and configure IBM Cloud Services

b. Create IBM Watson IoT Platform

c. Create a device & configure the IBM IoT Platform

d. Create Node-RED service

e. Create a database in Cloudant DB to store location data

f. Create a cloud object storage service and create a bucket to store the images

● Develop a python script to publish the sensor parameters like Temperature, Humidity, and Soil Moisture to the IBM IoT platform and detect the animals and birds in video streaming using Clarifai.

● Develop a web Application using Node-RED Service.

● Display the image in the Node-RED web UI and also display the temperature, humidity, and soil moisture levels. Integrate the buttons in the UI to control the Motors.

**By the end of this project you will:**

● Gain knowledge of Watson IoT Platform.

● Connecting IoT devices to the Watson IoT platform and exchanging the sensor data.

● Gain knowledge on Cloudant DB

● Gain Knowledge on using the Clarifai service

● Gain knowledge of storing images in IBM Object Storage and retrieving images

● Creating a Web Application through which the user interacts with the device.