PROJECT OBJECTIVES

Team ID	PNT2022TMID46736
Project Name	IOT Based Smart Crop Protection System For Agriculture

Objective:

An intelligent smart crop protection system helps the farmers in protecting the crop from the animals and birds which destroy the crop. This system also helps farmers to monitor the soil moisture levels in the field and also the temperature and humidity values near the field. The motors and sprinklers in the field can be controlled using the mobile application.

Project Flow:

The device will detect the animals and birds using the Clarifai service. If any animal or bird is detected the image will be captured and stored in the IBM Cloud object storage. It also generates an alarm and avoid animals from destroying the crop. The image URL will be stored in the IBM Cloudant DB service. The device will also monitor the soil moisture levels, temperature and humidity values and send them to the IBM IoT Platform. The image will be retrieved from Object storage and displayed in the web application. A web application is developed to visualize the soil moisture, temperature and humidity values. Users can also control the motors through web applications.

To accomplish this, we have to complete all the activities and tasks listed below:

- Create and configure IBM Cloud Services

  - Create IBM Watson IoT Platform
  - Create a device and configure the IBM IoT Platform
  - Create a Node-RED service
  - Create a database in Cloudant DB to store location data
  - 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 applications 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.