

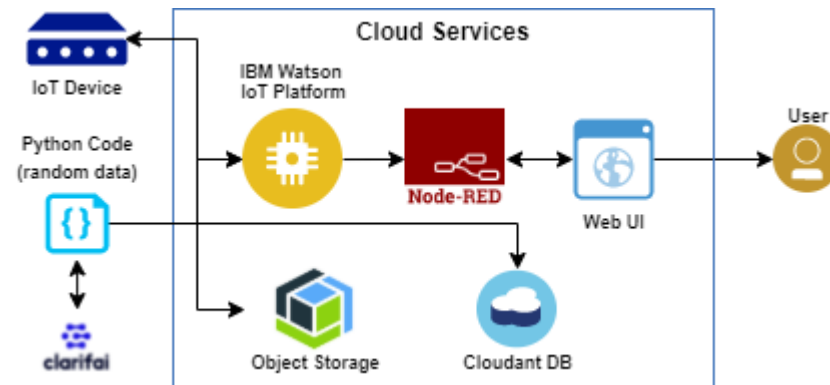
## Project Design Phase-II

### Data Flow Diagram & User Stories

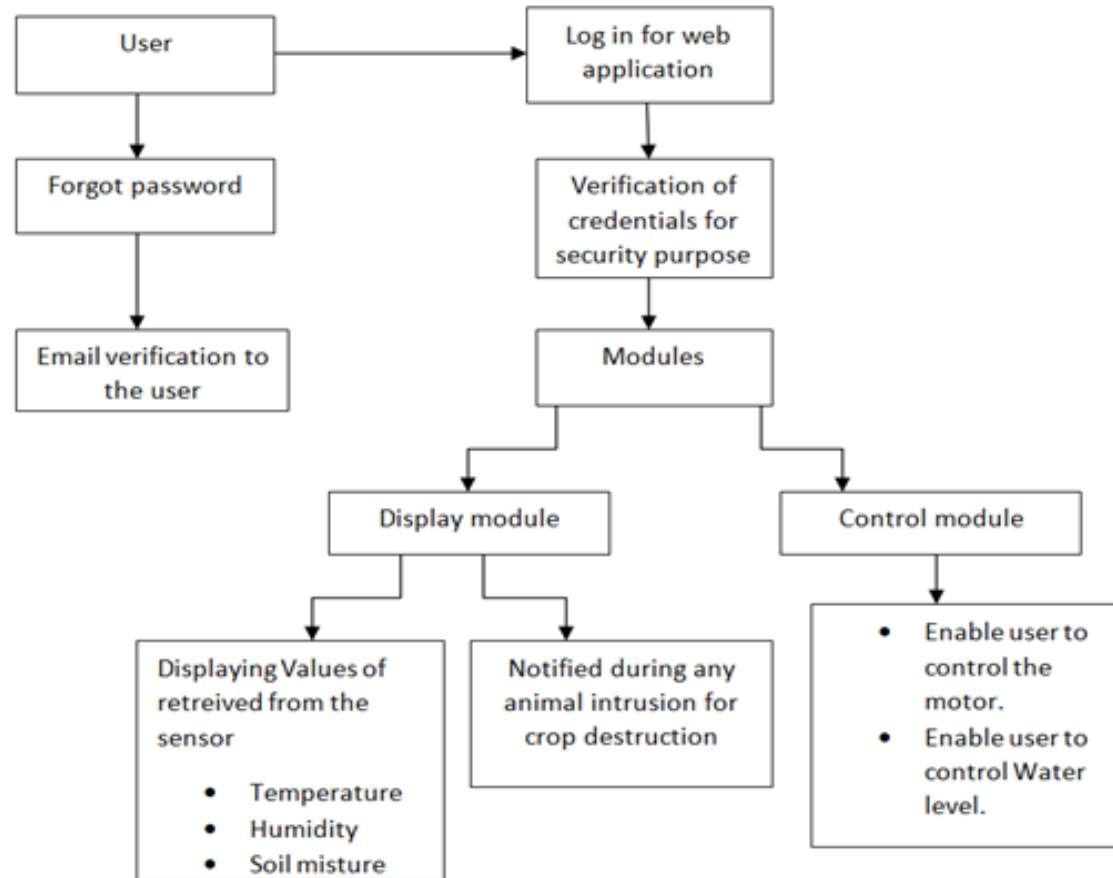
Date	16 October 2022
Team ID	PNT2022TMID35844
Project Name	Project – IoT Based Smart Crop Protection System for Agriculture
Maximum Marks	4 Marks

#### **Data Flow Diagrams:**

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



- 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.
  
- Creating and configuring IBM Cloud Services
  
- Creation of IBM Watson IoT Platform
  - A device & configure the IBM IoT Platform
  - Node-RED service
  - Database in Cloudant DB to store location data
  - A cloud object storage service and create a bucket to store the images
- Development of 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.
- Development of a web Application using Node-RED Service.
  - Displaying the image in the Node-RED web UI and also the temperature, humidity, and soil moisture levels.
  - Integrate the buttons in the UI to control the Motors.



## User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
Customer Details		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
Customer Access	Dashboard	USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail	I can register & access the dashboard with Gmail	Medium	Sprint-1
Customer Activity	Login	USN-5	As a user, I can log into the application by entering email & password	I can login into my account anytime based on demands	High	Sprint-1
	Dashboard	USN -6	The application should be able to display the desired results to the user.	I can confirm the temperature and gas levels in my surroundings	High	Sprint - 1

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Web user)	Registration	USN - 7	As a web user I can go through social media websites and register for the application	I can access my dashboard	High	Sprint - 1
	Login	USN - 8	As a web user I can link my google accounts to login into the application	I can log in and access the dashboard	High	Sprint -2
	Dashboard	USN -9	As a user , I can track and analyze available data using Dashboard	I can analyze data	High	Sprint - 3
Customer Needs	Monitoring field	USN - 10	24/7 Live monitoring of field/crop conditions for high reliability.	I can monitor from long distance	High	Sprint - 2
	Instant notification	USN - 11	I can react instantaneously to the problems being faced.	I can solve issues without delay	High	Sprint - 3
Customer Care Executive	IBM Watson	USN - 12	As a user I can request developers for help in case of failure of service or unanswered queries/complaints.	I can ensure smooth experience	Medium	Sprint - 4
Administrator	Have an overview on the entire process and ensure smooth workflow	USN -13	We must ensure perfect service from our team in order to satisfy the customer needs and neglect errors.	I can complete the work without any errors	High	Sprint - 4