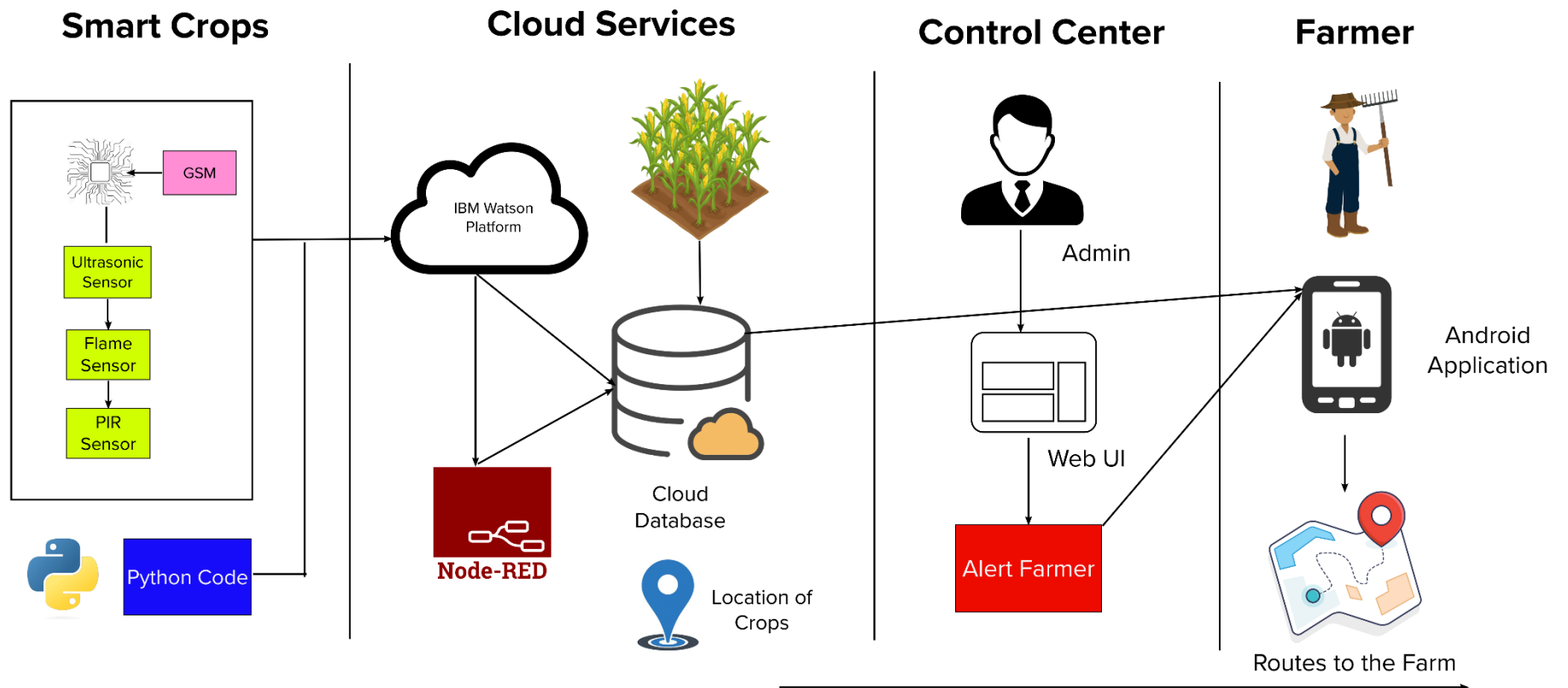


**Project Design Phase-II**  
**Technology Stack (Architecture & Stack)**

Date	15 October 2022
Team ID	PNT2022TMID46939
Project Name	<b>Smart Crop Protection System For Agriculture</b>
Maximum Marks	4 Marks

**Technical Architecture:**



**Table-1 : Components & Technologies:**

S.No	Component	Description	Technology
1.	Arduino Uno	The Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller.	Arduino programming itself is done in C++.
2.	Application Logic-1	Logic for Ultrasonic sensor data.	C++/Python
3.	Application Logic-2	Logic for Flame sensor data.	C++/Python
4.	Application Logic-3	Logic for a PIR sensor data	C++/Python
5.	GSM	The Arduino GSM shield allows an Arduino board to connect to the internet, send and receive SMS, and make voice calls using the GSM library.	C++/Python
6.	Cloud Sever	Application deployment on Local System / Cloud	IBM Watson IoT Platform, Node Red
7.	Cloud Database	Database Service on Cloud	IBM Watson IoT platform, Cloudant DB
8.	User Interface	How user interacts with application to alert the Farmer.	HTML, CSS, JavaScript , Python etc.
9.	External API-1	Purpose of External API used in the application to locate the crops.	Google Maps Geolocation API

**Table-2: Application Characteristics:**

S.No	Characteristics	Description	Technology
1.	Open-Source Microcontroller	Arduino Uno is used to make the IoT device	C++/Python
2.	Security	Encryption/Decryption used for security purpose	GSM,Python
3.	Scalable Architecture	New features can be added.	Node Red
4.	Availability	Web application can be accessed from anywhere	IBM Watson IoT Platform, HTML, CSS, JavaScript
5.	Performance	All Farmers can access the application at same time	Cloudant DB, IBM Watson IoT Platform