Project Design Phase-I
Solution Architecture

Date	19 September 2022
Team ID	PNT2022TMID21357
Project Name	Project - Smart Farmer-IoT Enabled Smart Farming Application
Maximum Marks	4 Marks

Solution Architecture:

- The different soil parameters (temperature, humidity, Soil Moisture) are sensed using different sensors (A sensor is a device that detects and responds to some type of input from the physical environment. The input can be light, heat, motion, moisture, pressure or any number of other environmental phenomena), and the obtained value is stored in the IBM cloud.
- Arduino UNO (The Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and The board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards) is used as a processing unit that processes the data obtained from sensors and weather data from the weather API.
- Node-red is used as a programming tool to wire the hardware, software, and APIs. The MQTT protocol is followed for communication.
- All the collected data are provided to the user through a mobile application that was developed using the MIT app inventor. The user could make a decision through an app, whether to water the crop or not depending upon the sensor values. By using the app they can remotely operate the motor switch.

Example - Solution Architecture Diagram: