

Project design phase-I

Solution Architecture

Date	12 st October 2022
Team ID	PNT2022TMID35839
Project name	Smart Farmer-IOT Enabled Smart Farming Application
Maximum marks	4 marks

Solution Architecture:

- 1) The different soil and environmental parameters (temperature, humidity, soil moisture, water level, air quality, pH level) are sensed using different sensors and APIs and connected to ESP32 from which the obtained value is stored in IBM cloud using MQTT.
- 2) Web application or mobile application created using MIT App Inventor obtains information using MQTT which enables farmer to monitor the parameters even if the farmer is not near his field and critical alert messages are sent to farmer using Fast2SMS.
- 3) Watering the crop is one of the important tasks for the farmers and they can make the decision whether to water the crop or postpone it by monitoring the sensor parameters and controlling the motor pumps from the mobile or web application itself using MQTT.
- 4) Node-RED is a flow based programming tool used to wire and connect hardware, APIs and online services together where coordination between applications (web and mobile) , hardware (ESP32, sensors and actuators) and services(SMS) in the design is carried out.

