

Project design phase-I

Solution Architecture

Date	15 st October 2022
Team ID	PNT2022TMID22120
Project name	Smart Farmer-IOT Enabled Smart Farming Application
Maximum marks	4 marks

Solution Architecture:

- 1) Different sensors and APIs are used to sense the various soil and environmental factors (temperature, humidity, soil moisture, water level, air quality, pH level), which are then connected to an ESP32, from which the obtained value is sent over MQTT to IBM's cloud.
- 2) A web application or mobile application made with MIT App Inventor collects data via MQTT, allowing a farmer to monitor the parameters even when the farmer is far from his field and utilizing Fast2SMS to send the farmer important alert messages.
- 3) One of the most important duties for farmers is watering the crops, and they may decide whether to water the crops now or later by keeping an eye on the sensor parameters and managing the motor pumps directly from the mobile or online application using MQTT.
- 4) Node-RED is a flow-based programming tool that is used to wire and connect hardware, APIs, and online services together. In the design, coordination is carried out between applications (web and mobile), hardware (ESP32, sensors and actuators), and services (SMS)

