# Project Design Phase-I

# Solution Architecture

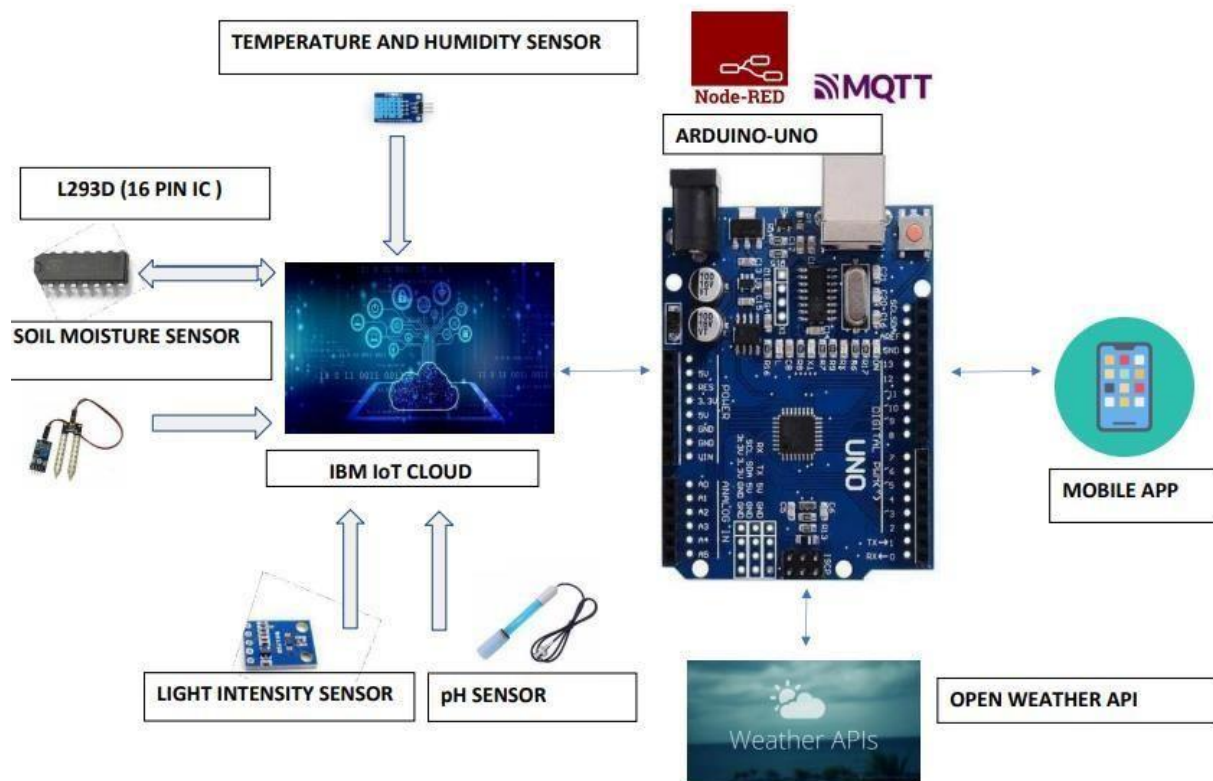| Date | 10 November 2022 |
|---|---|
| Team ID | PNT2022TMID12813 |
| Project Name | Project : SmartFarmer – IoT Enabled Smart Farming Application |
| Maximum Marks | 4 Marks |

## Solution Architecture:

Solution architecture is a complex process which is an architectural description of a specific solution. Solution architecture is a practice to provide ground for software development projects by tailoring IT solutions to specific business needs and defining their functional requirements and stages if implementation.

The key features of solution architecture are :

- Analyzing the technology environment.
- Analyzing enterprise specifics.
- Analyzing and documenting requirements.
- Setting the collaboration framework.
- Participating in technology selection.

# Solution Architecture Diagram:



- The different soil parameters (temperature, humidity, light intensity, pH level) are sensed using different sensors and the obtained value is stored in IBM cloud.
- Arduino uno is used as a processing unit which processes the data obtained from sensors and weather data from 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 which was developed using MIT app inventor. The user could make decision through an app, whether to water the crop or not depending upon the sensor values.