**PROJECT DESIGN PHASE - I**

**SOLUTION ARCHITECTURE**

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| **Date** | **07.11.2022** |
| **Team ID** | **PNT2022TMID24776** |
| **Project Name** | **Smart Farmer - IoT Enabled Smart Farming Application** |

**Solution Architecture:**

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

* Find the best tech solution to solve existing business problems.
* Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
* Define features, development phases, and solution requirements.
* Provide specifications according to which the solution is defined, managed, and delivered.
* 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.

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