

Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID27433
Project Name	Smart Farmer - IoT Enabled Smart Farming Application
Maximum Marks	4 Marks

Technical Architecture:

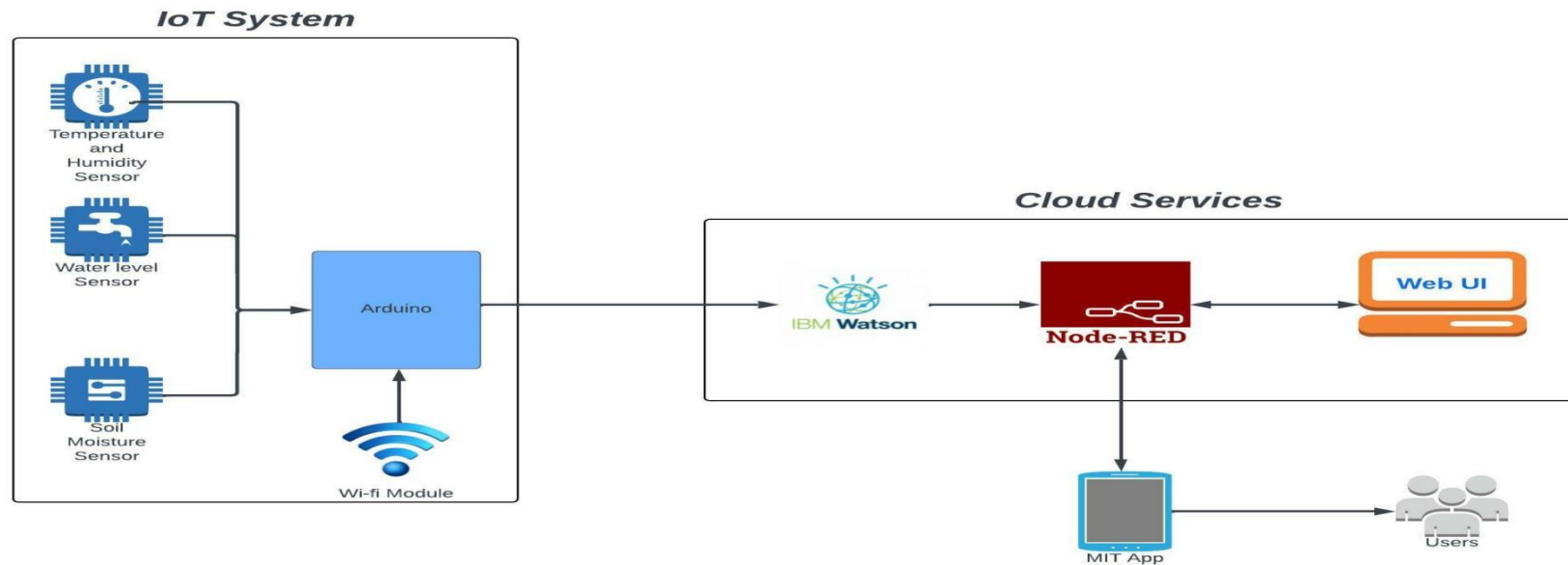


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	It is to make the user to interact with the application.	MIT App Inventor
2.	Application Logic-1	Controlling the water pump remotely using mobile phone through the application.	Python
3.	Application Logic-2	Based on the rainfall, the water level in the field can be adjusted and also the atmospheric conditions can also be accessed.	Python
4.	Application Logic-3	The chemical storage facilities can be monitored for leakage and also the pressure conditions can be accessed.	Python
5.	Database	Data that are to generally gets stored.	IBM Watson IoT, IBM Watson Node-Red
6.	Cloud Database	Cloud database is a database built to run in a public or hybrid cloud environment to help organize, store and manage data within an organization.	IBM DB2, IBM Cloudant
7.	File Storage	File storage is used to store data in the system that are of high volume.	IBM File Storage
8.	External API-1	To obtain various weather parameters.	OpenWeather
9.	Infrastructure (Server / Cloud)	Deployment of the application happens on local system/ cloud server configuration.	IBM Cloudant, IBM IoT platform

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Python, Arduino and MIT App Inventor	MIT License
2.	Security Implementations	Providing unique credentials like username and password to different users to protect data from various attacks.	Encryption, IBM Controls
3.	Scalable Architecture	Supporting higher workloads without any fundamental changes to it.	Node-Red
4.	Availability	System is available to the user at all time. User can rely on system to do any amount of work for any time reducing the workload of users.	MIT App, Web UI
5.	Performance	Based on the performance the quality of the work is determined. So, better performance gives better outcome.	MIT App Inventor