Project Design Phase-II
Technology Stack (Architecture & Stack)

Team ID	PNT2022TMID07443
Project Name	SmartFarmer-IOT based Farming Application
Maximum Marks	4 Marks

Technical Architecture:

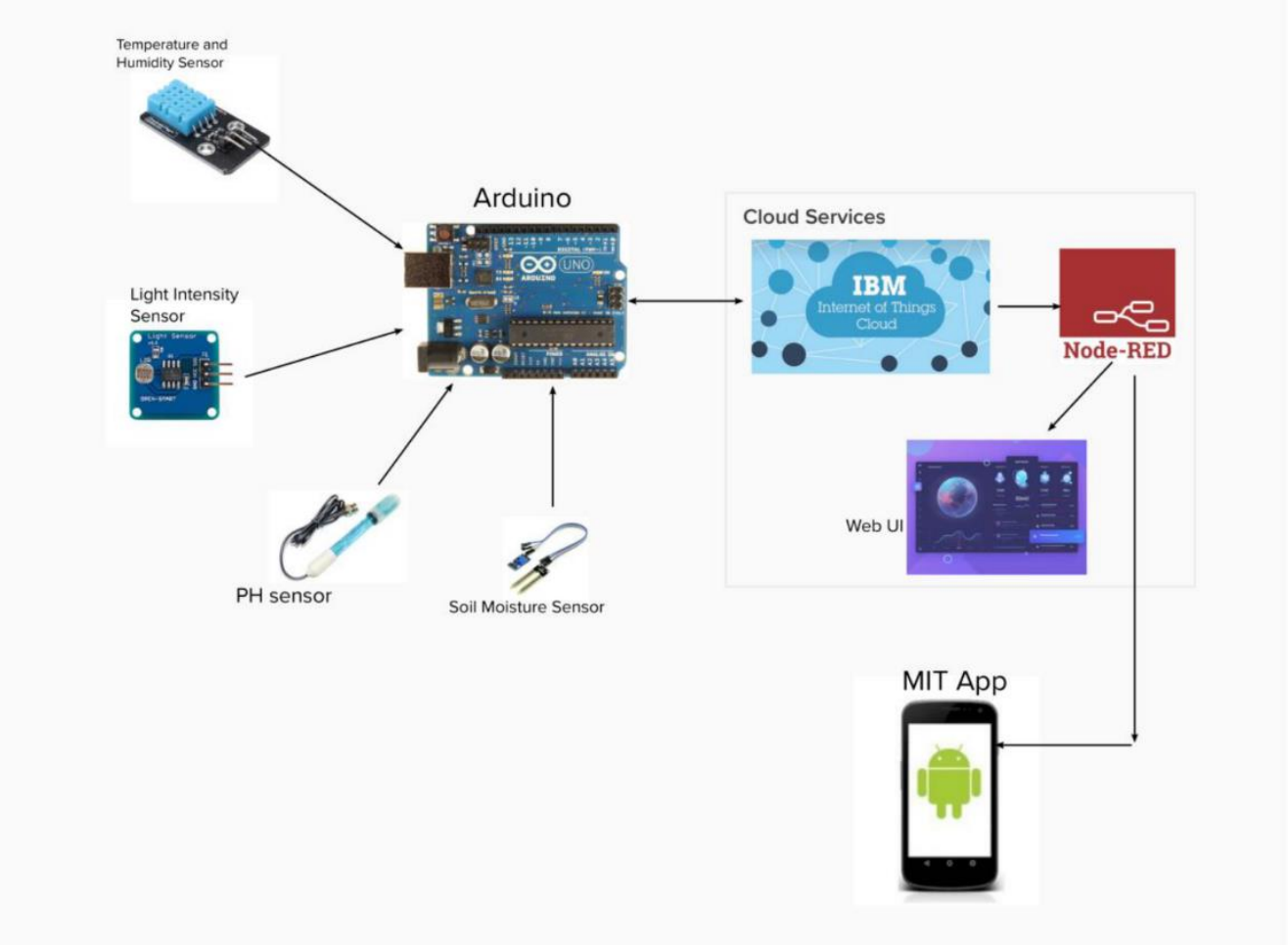

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The communication protocol being usedmight act as an interface	MIT App Inventor
2.	Arduino UNO	It is used as a processing Unit	Python
3.	MQTT Protocol	The data to be collected and sent to the farmer via MQTT protocol providing the data toeasily monitor the crops	IBM Watson IOT service , IBM Waston Assistant
4.	Database	Data Type, Configurations etc.	MySQL
5.	Cloud Database	Database Service on Cloud	IBM Cloud.
6.	File Storage	Different soil parameters obtained values	IBM Block Storage
7.	External API	To monitor the weather	Open Weather API, etc.
8.	Infrastructure (Server / Cloud)	Application Deployment on Cloud Local Server Configuration:Cloud Server Configuration:	Kubernetes

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	MQTT protocol	Python
2.	Security Implementations	Sensitive and private data must be protected from their production until the decision-making and storage stages.	Node-Red, Open weatherApp API, MIT App Inventor
3.	Scalable Architecture	Scalability is a major concern for IoT platforms. It has been shown that differentarchitectural choices of IoT platforms affect system scalability and that automatic real time decision-making is feasible in an environment composed of dozens of thousand.	Node-Red service
4.	Availability	Available feasible	Open weather App
5.	Performance	Design consideration for the performanceof the application (number of requests per sec, use of Cache, use of CDN's) etc.	MIT app inventor