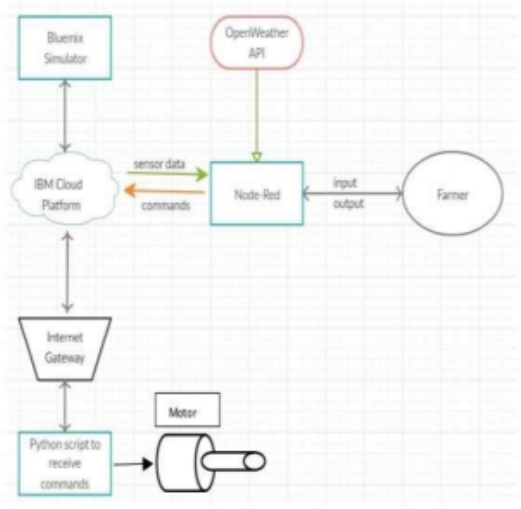
PROJECT DESIGN PHASE - II
TECHNOLOGY STACK (ARCHITECTURE & STACK)

Date	11 October 2022
Team ID	PNT2022TMID15443
Project Name	Smart farmer - IOT Enabled Smart Farming Application
Maximum Marks	4 Marks



Guide lines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

- The different soil boundaries temperature, soil dampness and afterward stickiness are detected utilizing various sensors and got esteem is put away in the IBM cloud. Arduino UNO is utilized as a handling Unit that interaction the information got from the sensors

- whether information from the climate Programming interface. Hub RED is utilized as a programming instrument to compose the equipment, programming, and APIs. The MQTTconvention is followed for the correspondence.
- Every one of the gathered information are given to the client through a portable application that was created utilizing the MIT application creator.

- The client could choose through an application, climate to water the harvest or not relying on the sensor values. By utilizing the application, they can remotely work the engine switch.

Table - 1: Components & Technologies:

S. No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. WebUI, Mobile App.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Logic for a process in the application	Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson IOT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM Cloud
7.	File Storage	File storage requirements	IBM Block Storage or Other StorageService or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration:	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2.	Security Implementations	Sensitive and private data must be protected from theirproduction until the decision-making and storage stages.	e.g. Node-Red, Open weather App API,MIT App Inventor, etc.
3.	Scalable Architecture	scalability is a major concern for IoT platforms. It hasbeen shown that different architectural choices ofIoT platforms affect system scalability and that automatic real time decision-making is feasible in an environment composed of dozens of thousand.	Technology used
4.	Availability	Automatic adjustment of farming equipment made possible by linking information like crops/weather andequipment to auto-adjust temperature, humidity, etc.	Technology used
5.	Performance	The idea of implementing integrated sensors with sensing soil and environmental or ambient parameters in farming will be more efficient for overall monitoring.	Technology used