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

Date	15 October 2022
Team ID	PNT2022TMID41289
Project Name	IoT based smart crop protection system for agriculture.
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table

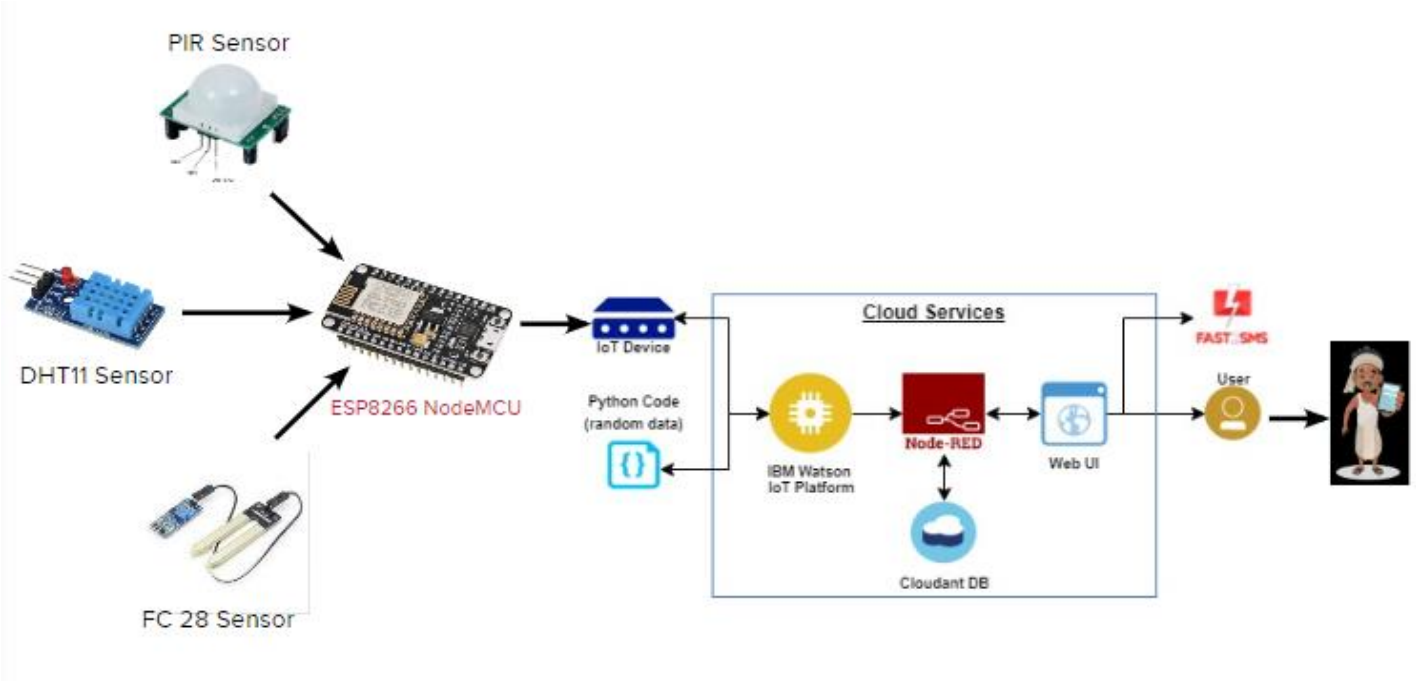

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User interacts through mobile app	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Used to measure the temperature and humidity level.	Python
3.	Application Logic-2	It is used to build conversational interfaces into any application or device.	IBM Watson Assistant
4.	Database	MySQL is a relational database which is based on a tabular design	MySQL
5.	Cloud Database	Cloudant is a non-relational distributed database service which handles software and hardware provisioning, management and scaling and support	IBM Cloudant
6.	File Storage	The collected data's are stored in the IBM Block Storage.	IBM Block Storage
7.	External API-1	Purpose of this IBM weather API is collect the required data from the cloud.	IBM Weather API etc.
8.	Machine Learning Model	An intelligent system that protects crop from animals and it also measures temperature, soil moisture, humidity level .It also enables the remote monitoring and control of motors.	Object Recognition Model, etc.
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Kaa IoT, Zetta, Ge Predix, Thing Speak, Eclipse, OpenHAB.	Kaa IoT
2.	Security Implementations	Mandatory access control, Discretionary access control, Role-based access control.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	It refers to a system, network or process that is designed to handle a workload that may change in scope.	Kubernetes, Elastic storage, Load balancer.
4.	Availability	It is a metric used to measure the percentage of time a machine can be used.	Technology used
5.	Performance	Need to simulate devices from different locations with required network technologies.	Machine Learning Alogorithm