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

Date	03 October 2022
Team ID	PNT2022TMID34153
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 2

Example: Order processing during pandemics for offline mode

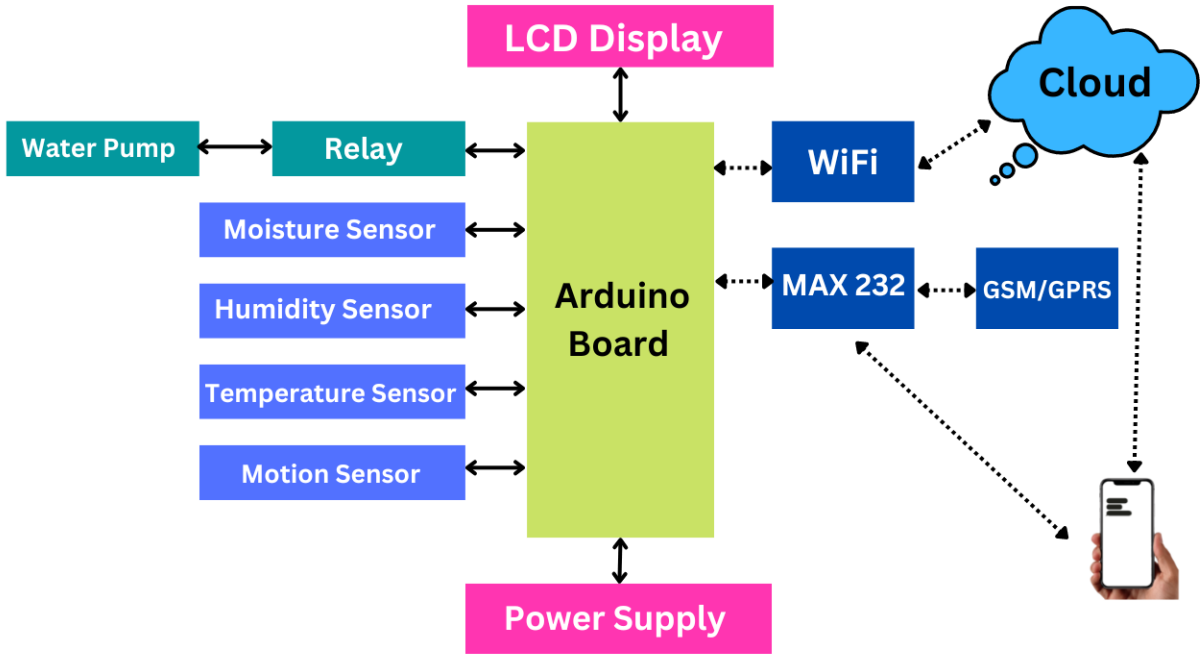

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Mobile Application	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	To protect the crops from Animals	Java / Python
3.	Application Logic-2	To increase production quantity and quality ,by making maximum use of resources and minimizing the environmental impact	IBM Watson STT service
4.	Application Logic-3	alert message send to the Mobile	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	Information such as temperature, humidity about the fields	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	The farmers are able to track the conditions in the field from anywhere	IBM Weather API, etc.
9.	External API-2	Protect the farm from animals as well as unknown person	Aadhar API, etc.
10.	Machine Learning Model	To increase the crop production	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Cloud Server Configuration : IBM Cloud	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Microcontroller, Camera, GSM, Sensor, LCD Display	Technology of Opensource framework

S.No	Characteristics	Description	Technology
2.	Security Implementations	By using IoT devices , the field will be safe	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	3 – tier, Micro-services	Technology used
4.	Availability	use of load balancers, distributed servers etc	Technology used
5.	Performance	There will be less work for farmers using IOT devices	Technology used