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

Date	03 October 2022
Team ID	PNT2022TMID27262
Project Name	Project - SMART FARMER - IOT ENABLED SMART FARMING APPLICATION SYSTEM
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2
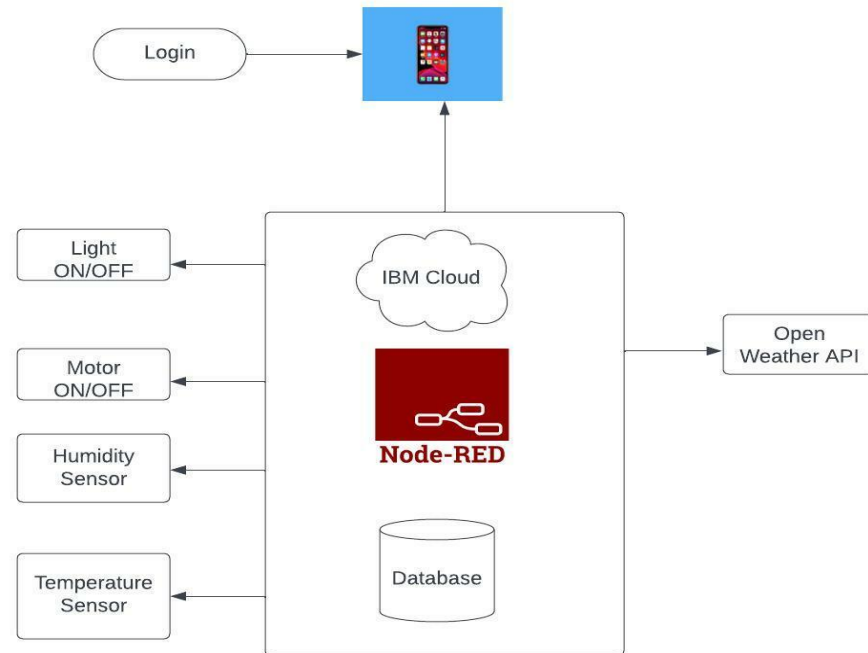
Table-1: Components & Technologies:

S. No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	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 IOTservice
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 Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	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	Node red, MIT App	Technology of Opensource framework
2.	Security Implementations	Risk assessment, Limit user access to data, Encrypt the data, Update and patch regularly	Encryptions, updates regularly
3.	Scalable Architecture	It supports higher workloads without any fundamental changes to it scalability is a major concern for IoT platforms. It has been shown that different architectural choices of IoT platforms affect system scalability and that automatic real time decision-making is feasible in an environment composed of dozens of thousand.	MIT app Invertor
4.	Availability	In this application have to check weather conditions, temperature, Humidity Automatic adjustment of farming equipment made possible by linking information like crops/weather and equipment to auto-adjust temperature, humidity, etc	Open weather API
5.	Performance	Design consideration for the performance is for each request have 2 second to load the details in the application The idea of implementing integrated sensors with sensing soil and environmental or ambient parameters in farming will be more efficient for overall monitoring.	Python

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d