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

Date	08 November 2022
Team ID	PNT2022TMID52180
Project Name	IoT based smart crop protection system for agriculture
Maximum Marks	4 Marks

Technical Architecture:

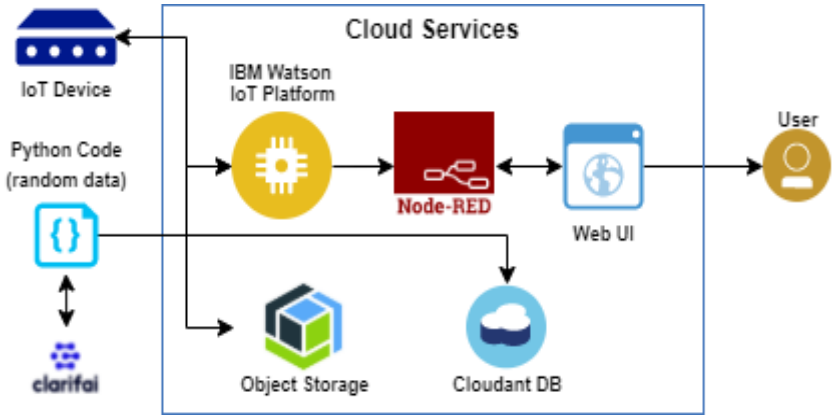

Table-1 : Components & Technologies:

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 STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant

5.	Database	Data Type, Configurations etc.	MySQL
6.	Cloud Database	Database Service on Cloud	IBM Cloudant
7.	File Storage	File storage requirements	IBM Block Storage
8.	Temperature sensor	Monitor the temperature present in the field	TMP36
9.	External API	To recognize the person using the system	Aadhar API
10.	Humidity sensor	Monitor the humidity of the soil	DHT11
11.	Soil moisture sensor	Monitor the moisture content in the soil	Soil NPK sensors

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Clarifai, Node-red	Software
2.	Security Implementations	The private data and the sensitive informations are protected, use of firewall	Encryption process
3.	Scalable Architecture	3-tier architecture is preferred due to the scalability of the IoT based systems is more and they are most profitable	Software
4.	Availability	use of load balancers and distributed servers are highly recommended and are available for the need of the works	Software
5.	Performance	The performance of the application which may work based on the number of requests per second and the use of Cache in the IoT platform	Software