Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	14 October 2022
Team ID	PNT2022TMID05121
Project Name	IoT based smart crop protection system for agriculture
Maximum Marks	4 Marks

Technical Architecture:

The architectural diagram of the model is as below and the Technology used is shown in table1 & table 2

Reference: https://smartinternz.com/guided-project/iot-based-smart-agriculture

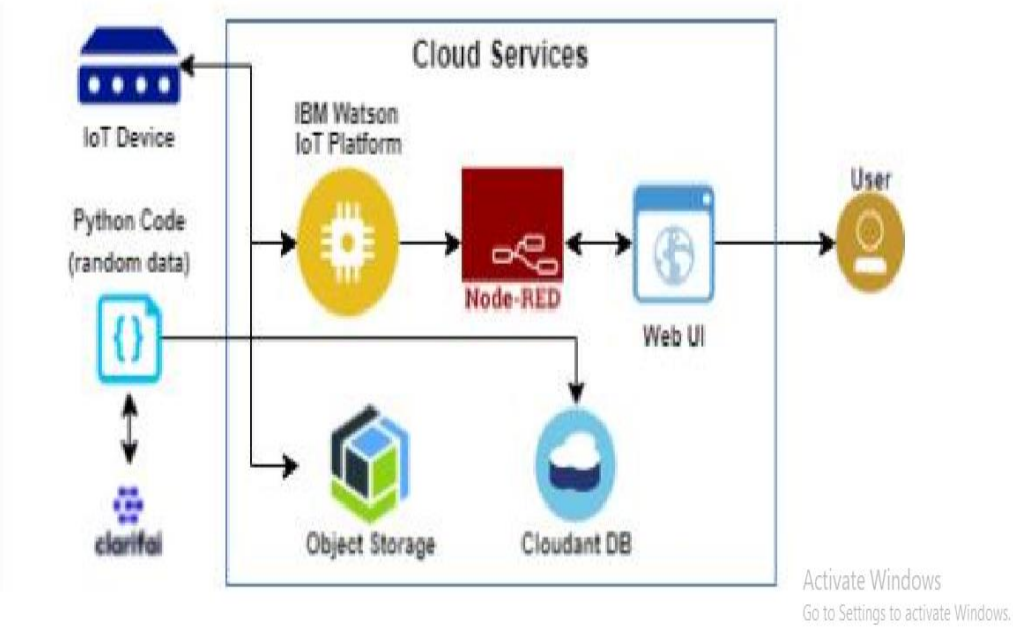

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g., Mobile Application	HTML, CSS, JavaScript / Angular JS / Node Red.
2.	Application Logic-1	Logic for a process in the application	Java / 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, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2.
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.	IoT Model	Purpose of IoT Model is for integrating the sensors with a user interface.	IBM IoT Platform
	Infrastructure rver / 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	The open-source frameworks used	SAN-SAF
2.	Security Implementations	List all the security / access controls implemented	IBM cloud encryptions
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	IBM cloud Architecture
4.	Availability	Justify the availability of applications (e.g. use of load balancers, Distributed servers etc.)	Web Application can even be used by the framers in the horticulture

5.	Performance	Design consideration for the performance of the application	Since the web application is high efficient, it can be used by the farmers irrespective of time.

References:

https://smartinternz.com/guided-project/iot-based-smart-agriculture

https://www.computerweekly.com/news/252504285/How-IoT-and-machine-learning-are-automating-agriculture

https://components.omron.com/us-en/solutions/iot