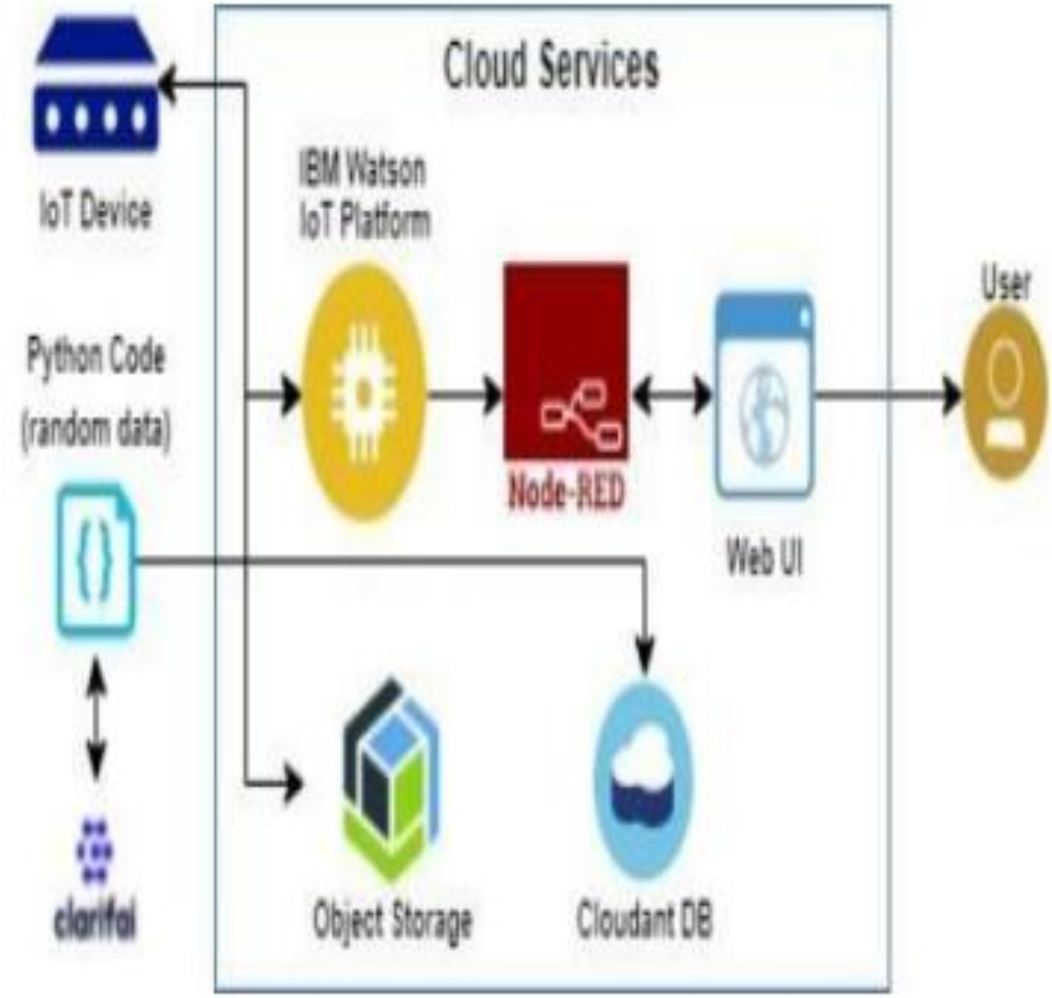
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	15-NOV-2022
Team ID	PNT2022TMID15088
Project Name	IoT Based Smart Crop Protection System for Agriculture
Maximum Marks	4 Marks

TECHNICAL ARCHITECTURE:



TECHNOLOGY STACK:

	COMPONENT	DESCRIPTION	TECHNOLOGY
1	User Interface	Mobile application is the user interface.	HTML, CSS, JavaScript / Angular JS / React JS etc
2	Application Logic 1	Protect the crops from animal and bird attacks	Java / Python
3	Application Logic 2	Helps farmers to monitor the moisture levels in the field	IBM Watson STT service
4	Application Logic 3	Motors and sprinklers in the field can be controlled using the mobile application.	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	Aim is to provide the activities of field to farmers.	IBM Weather API, etc.
9	External API 2	Farmers can easily access everything about their field from home.	Aadhar API, etc.
10	Machine Learning Model	Purpose is to produce high yield of crops.	Object Recognition Model, etc
11	Infrastructure (cloud/Server)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration: Ibm cloud.	Local, Cloud Foundry, Kubernetes, etc.

APPLICATION STACK:

SNO	CHARACTERISTICS	DESCRIPTION	TECHNOLOGY
1	Open-Source Frameworks	ThingsBoard	Technology of Opensource framework
2	Security Implementations	By using IoT devices, the fields will be safe.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3	Scalable Architecture	3 – tier, Micro-service	IBM Cloud Architecture
4	Availability	Use of load balancers, distributed servers.	Web Application
5	Performance	There will be less work for farmers and the entire field is controlled using IoT devices.	It is used by farmers