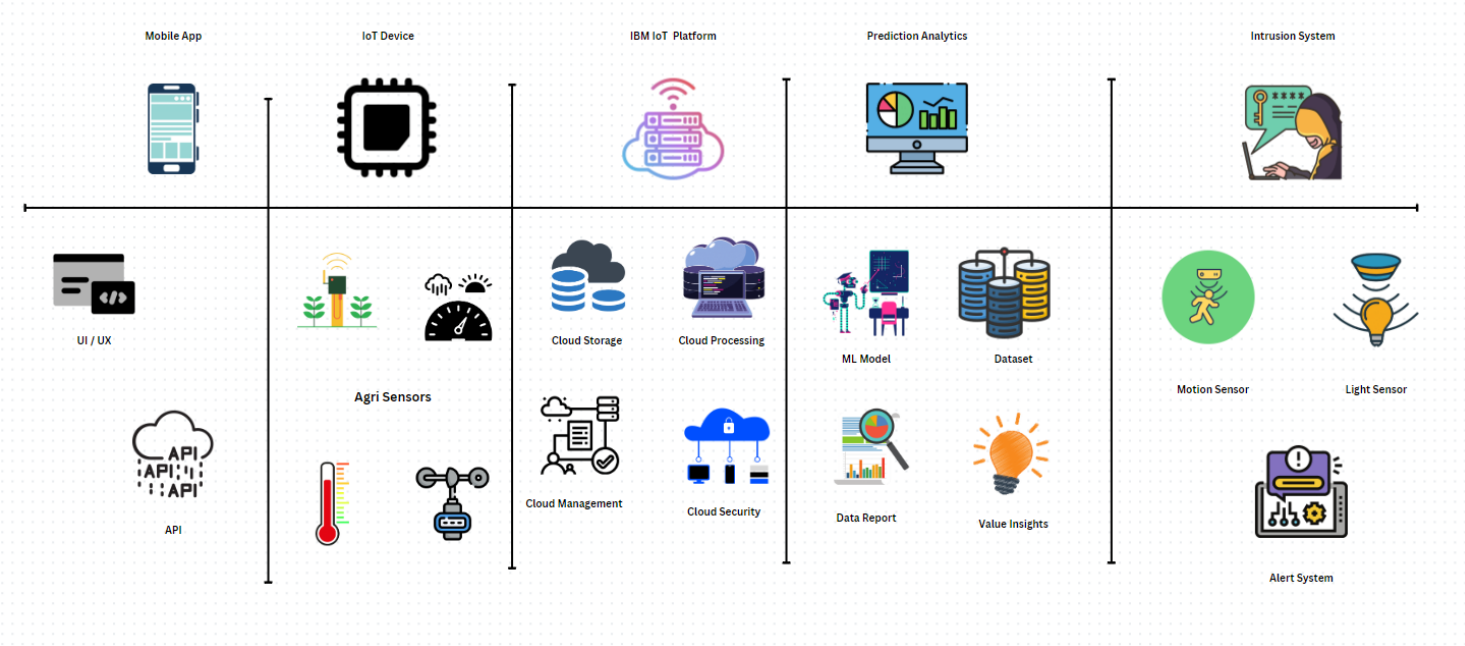
Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID00408
Project Name	SmartFarmer - IoT Based Smart Farming Application
Maximum Marks	4 Marks

Technical Architecture:



Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web application for interaction with user	React Native and MIT Inventor App
2.	Application Logic-1	Configure the IoT devices	Java / Python
3.	Application Logic-2	Process data in the cloud	IBM Watson STT service
4.	Application Logic-3	Display data report to the user	IBM Watson Assistant
5.	Database	Real time data from the Database	NoSQL.
6.	Cloud Database	Database Service on Cloud	IBM DB2
7.	File Storage	File storage requirements	IBM Block Storage
8.	External API-1	Monitoring the weather data for crop management	IBM Weather API, etc.
9.	External API-2	Communication of all devices in the web	REST API
10.	Machine Learning Model	For predictive analytics purpose and gain value from collected data	ML Models
11.	Infrastructure (Server / Cloud)	Application Deployment on Cloud	IBM Cloud

Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Node - RED framework
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	IBM Cloud Security
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	IBM Watson Studio
4.	Availability	Justify the availability of applications (e.g. use of load balancers, distributed servers etc.)	IBM Cloud Services
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	IBM IoT Platform