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

Technical Architecture:

Sensor and Devices ← IBM Cloud → User

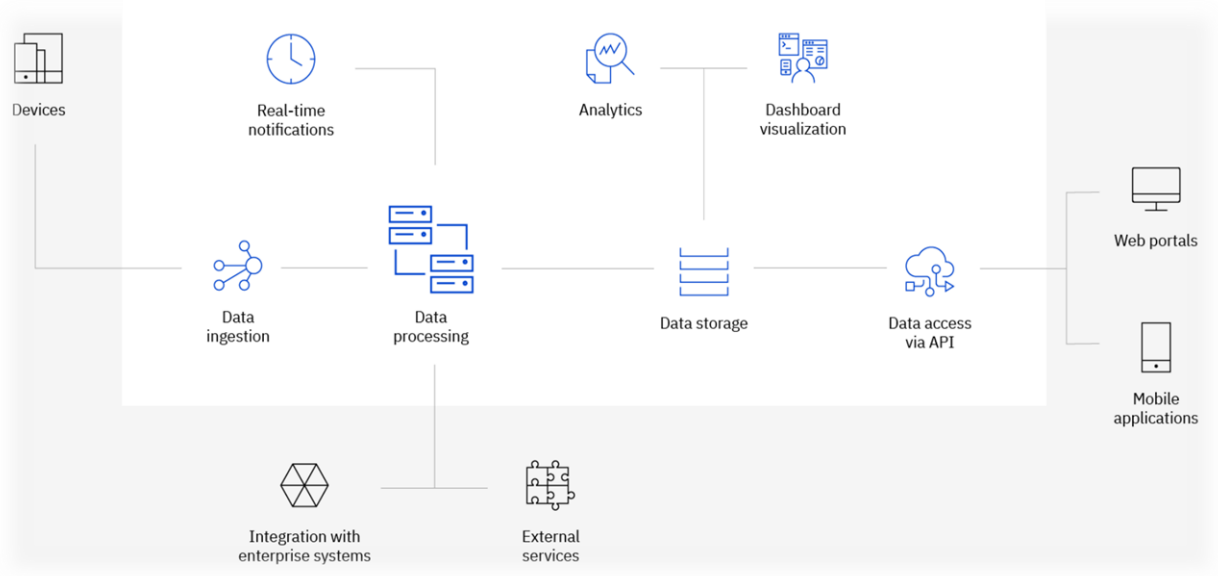

Table-1: Components & Technologies:

S. No	Component	Description	Technology
1.	Mobile Application	Through the mobile application, user get to know all live data from the devices.	MIT inventor
2.	Web UI	It is used as WebSocket communication in binary mode between the web browser (UI) and your application.	Node red, Python
3.	IBM Watson	Use your data to create, train, and deploy self-learning models. Leverage an automated, collaborative workflow to build intelligent applications.	IBM Watson STT service
4.	IBM Watson Assistant	Watson Assistant lets you build conversational interfaces into any application, device, or channel	IBM Watson Assistant
5.	Ph sensor	It used for sensing the Ph level of the soil	sensor
6.	Ultra-sonic sensor	It detects the animal movement in the soil	Sensor
7.	Temperature Sensor	It collects the data of the temperature and humidity of the environment	Sensor
8.	Soil Moisture Sensor	It collects water level in soil	sensor
9.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
10.	Cloud Database	Database Service on Cloud	IBM DB2

11.	Cloud Storage	It is used for File and data storage	IBM Block Storage
12.	Open weather API	It provides highly recognizable weather product that make working with weather data a way easier	IBM Weather API
13.	Aadhar API	It can authenticate the Aadhaar cards of any other individual without any issue	Aadhar API
14.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration, Cloud Server Configuration.	Local, Cloud Foundry, Kubernetes.

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	The open-source framework is a set of tools that can be used to create websites, user interfaces and basic software applications.	Mozilla Firefox\GNU\Linux
2.	Security Implementations	Application security Data security	SHA-256/Encryptions/IAM Controls/ OWASP.
3.	Scalable Architecture	Each segment or functional unit of the divided IoT application, performs a separate function. For optimal scalability, each of these functional units must be compiled separately before they are executed. The functional units communicate with each other	Microservices Architecture

S. No	Characteristics	Description	Technology
		systematically allowing for simultaneous optimization of IoT applications.	
4.	Availability	Load balancing refers to efficiently distributing incoming network traffic across a group of backend servers, also known as a server farm or server pool.	machine learning algorithms
5.	Performance	Performance indicates the functioning of the application	MQTT protocols