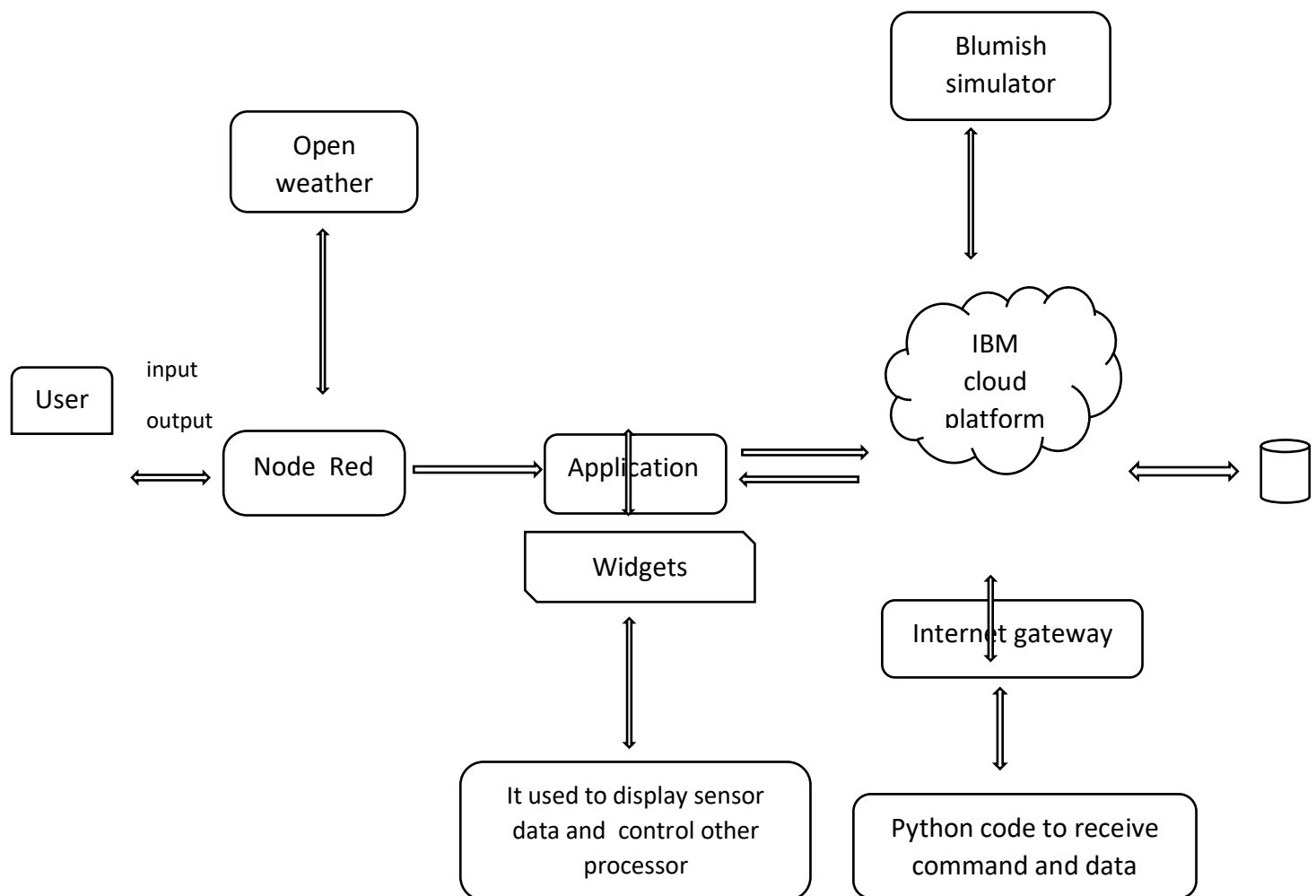


Project Design Phase-II

Technology Architecture

Team ID	PNT2022TMID51073
Project Name	Smart Farmer- IoT Enabled smart farming Application

Technical Architecture:



- Arduino UNO is used as a processing Unit that process the data obtained from the sensors and whether data from the weather API.
- NODE-RED is used as a programming tool to write the hardware, software and APIs. The MQTT protocol is followed for the communication.
- All the collected data are provided to the user through a mobile application that was developed using the MIT app inventor. The user could make a decision through an app, weather to water the field or not depending upon the sensor values. By using the app they can remotely operate the motor switch.

Components & Technologies:

S.No	Component	Description	Technology
1	User Interface	Mobile app. In our application, were data are displayed using widgets like structure	MIT App Inventor
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 base type	Firebase is Nosql database
6	Cloud Database	Database Service on Cloud	Firebase, IBM Watson IoT Cloud Platform
7	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, IBM Cloud, Firebase

Application Characteristics:

S.No	Characteristic	Description	Technology
1	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2	Security Implementations	Sensitive and private data must be protected from their production until the decision-making and storage stages.	Node-Red, Open weather App API, MIT App Inventor
3	Scalable Architecture	scalability is a major concern for IoT platforms. It has been shown that different architectural choices of IoT platforms affect system scalability and that automatic real time decision-making is feasible in an environment composed of dozens of thousand.	Technology used
4	Availability	Availability of our application is 24/7 because which use a cloud technology. Firebase will use	Firebase, IBM Cloud

		commercially reasonable efforts to make Firebase available with a Monthly Uptime Percentage of at least 99.95% and distributed servers.	
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