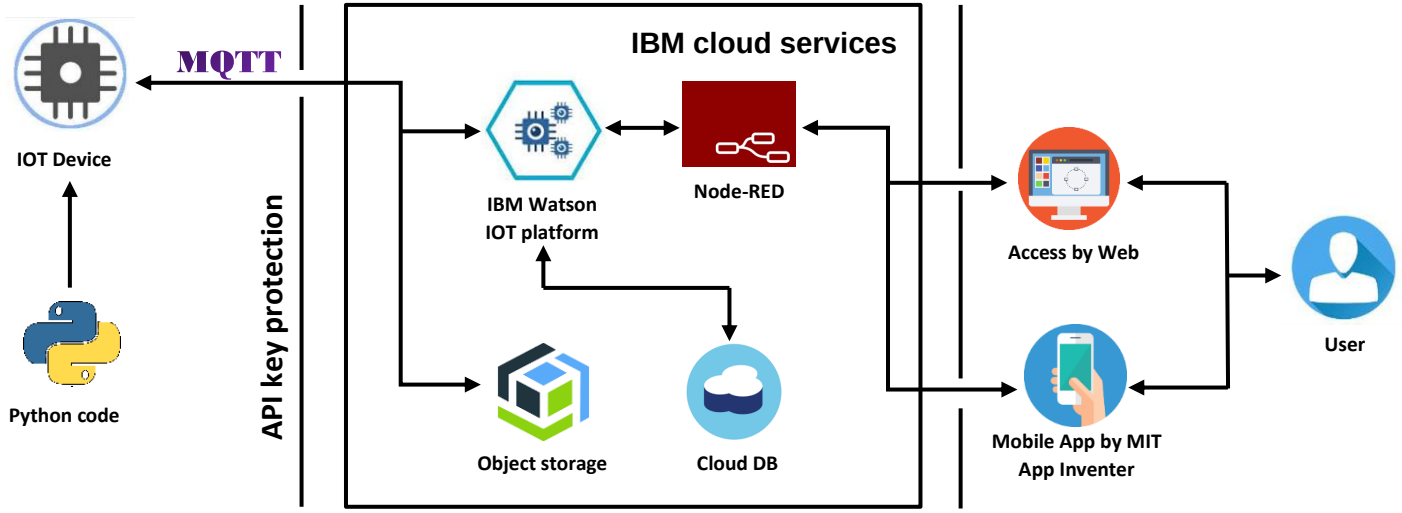
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID37069
Project Name	IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE
Maximum Marks	4 Marks

Technical Architecture:



IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	IOT Device	Device which collect data from sensor nodes and send it to cloud	Raspberry pi / ESP 32
2.	Programming software	Here python code is used to program the IOT device	Python IDE
3.	Communication protocol	Communication protocols which are used to send data from IOT device and access the IOT device	MQTT, HTTP
4.	Application logic 1	The data received from IOT device are seen through IBM IOT platform were device is stored	IBM Watson IOT platform
5.	Application logic 2	The data in IBM Watson platform can be viewed by other platform using Node-RED	Node-RED
6.	Database	Database Service on Cloud	IBM Cloudant
7.	External API-1	It is used an authentication to access the ibm Watson platform.	API key
8.	User Interface	User can view data through an user interface and control the system through this.	Mobile application
9.	Infrastructure (Cloud)	Cloud Server Configuration :	Cloud Foundry

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Python is used to program the hardware and MIT app inventer used to create mobile app for user interface.	Python IDE and MIT app inventer
2.	Security	An unique API key provided to user and developer for authentication to access the platform.	API key
3.	Scalable Architecture	Since we use IBM cloud service in future we can include more features and develop the project to next level.	IBM Watson IOT platform and Node RED service
4.	Availability	The device is cost effective and simple design. Hence it is easily available in market and installation is easy.	Raspberry pi
5.	Performance	Performance is optimum and data response is quick even if a high traffic occurs and more power efficient while using raspberry pi	Raspberry pi and IBM cloud services