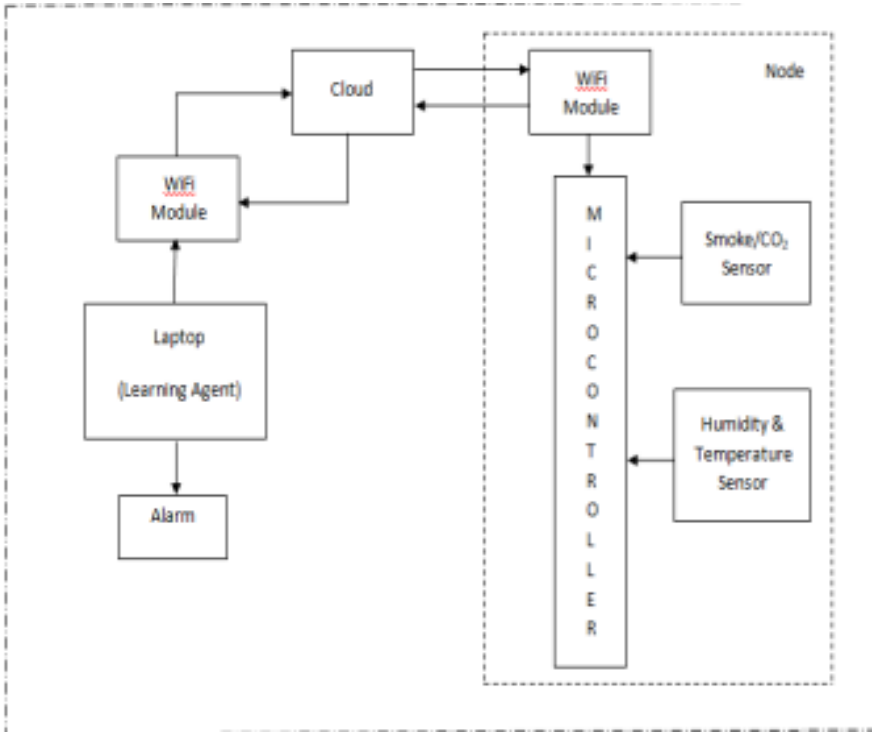
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	1st November 2022
Team ID	PNT2022TMID12327
Project Name	Project -Emerging method for early detection of forest fire
Maximum Marks	4 Marks

Technical Architecture:



Guidelines:

1. Include all the processes (As an application logic / Technology Block).
2. Provide infrastructural demarcation (Local / Cloud).
3. Indicate external interfaces (third party API's etc.).
4. Indicate Data Storage components / services.
5. Indicate interface to machine learning models (if applicable).

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User interface	WWAN allows users to connect with applications like chatbots, mobile apps, and web user interfaces.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Database	Tensorflow, Phyton, Keras, and Natural language processing.	MySQL, NoSQL,ResNet-50 with SVM, etc.
3.	Cloud Database	Analysis Database Service on Cloud	IBM DB2, IBM Cloudant etc.
4.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem.
5.	WIFI module	Your WiFi-enabled devices can connect to the Internet over a wireless network created by a wireless router.	WWAN 802.11,ESP8266
6.	Micro-controller	At regular intervals, each sensor's data is sampled.	Integrated, open-source circuit designs
7.	Laptop	Educational agent	Intel Core i7 8th Gen.
8.	Sensors	It detects changes in the air atmosphere by measuring humidity, temperature, smoke, and CO2.	IBM Weather API, etc.
9.	External API	When sensors malfunction, alarms are sent to a central monitoring station.	Wireless Alarm Systems, etc.
10.	Machine Learning Model	Recognizing flames in pictures and video frames using machine learning and transfer learning.	Model for Object Recognition, etc.
11.	Infrastructure (Server / Cloud)	Local Server Configuration: Operating System for Application Deployment on Local and Cloud Systems Configuring a cloud server: cloud hosting services	Regional, cloud-based, kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	It is freely accessible for both commercial and noncommercial use and is covered by a number of open source licences.	Tensorflow,RNN
2.	Security Implementations	Alarms and sensors are used for security purposes.	Wireless Alarm Systems,Infrared (IR),Ionization/Photoelectric sensors
3.	Scalable Architecture	System for accurately indicating wells.	Artificial Intelligence(AI)
4.	Availability	Microcontroller usage	C++ , Java,etc
5.	Performance	Application is low-cost, sturdy, trustworthy, and delivers great performance	Machine(or)deep learning