Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	3 November 2022
Team ID	PNT2022TMID19304
Project Name	Industry- Specific Intelligent Fire Management System
Maximum Marks	4 Marks

Technical Architecture:

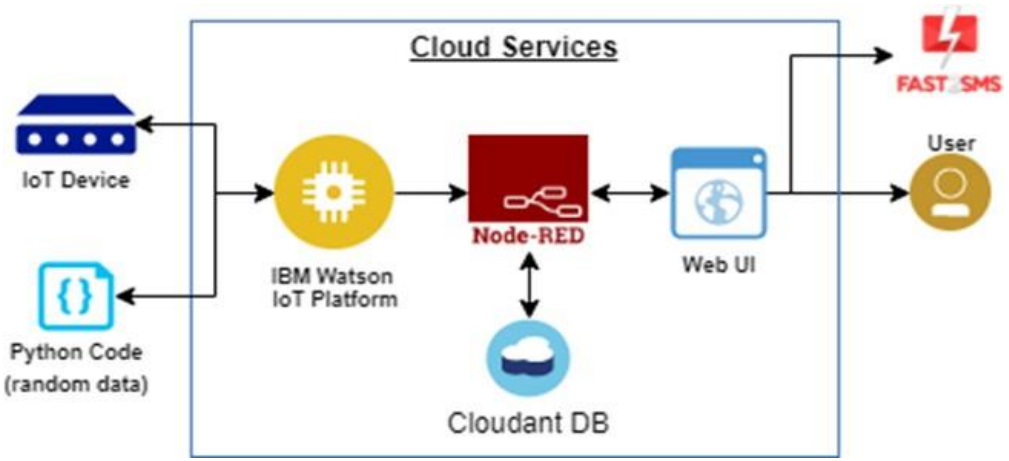

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI, Node-RED, MIT app Inventor	IBM IoT Platform, IBM Node RED, IBM Cloud
2.	Application Logic-1	Create IBM Watson IoT Platform and create Node-RED service	IBM Watson,IBM Node-RED, IBM Cloud ant service,
3.	Application Logic-2	Describe logic for a process in the application and build a web application using node-red service	IBM Node-red
4.	Application Logic-3	Develop python script to subscribe publish and to IBM IoT Platform	Python
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant
7.	File Storage	Mobile application is developed for storing and receiving the sensor information	Web UI
8.	External API-1	IBM sensors are used to detect the fire, temperature , smoke in the environment and provides the activation of water sprinklers in web ui	IBM Sensors
9.	External API-2	IBM Fire management API is used to detect the fire in one place	IBM fire management system API
10.	Machine Learning Model	Using this model we can be able to recognize objects	Object Recognition Model
11.	Infrastructure (Server / Cloud)	Cloud Server Configuration	IBM Cloudant, IBM IoT Platform

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	MIT App Inventor	MIT license
2.	Security Implementations	IBM Services	Encryptions, IBM Controls
3.	Scalable Architecture	Sensor-IoT Cloud based Architecture	AI and Cloud computing
4.	Availability	Mobile phones, Desktop and Laptop	MIT App Inventor
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Sensor