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

Date	03 October 2022
Team ID	PNT2022TMID29660
Project Name	Industry-specific intelligent fire management system
Maximum Marks	4 Marks

Technical Architecture:

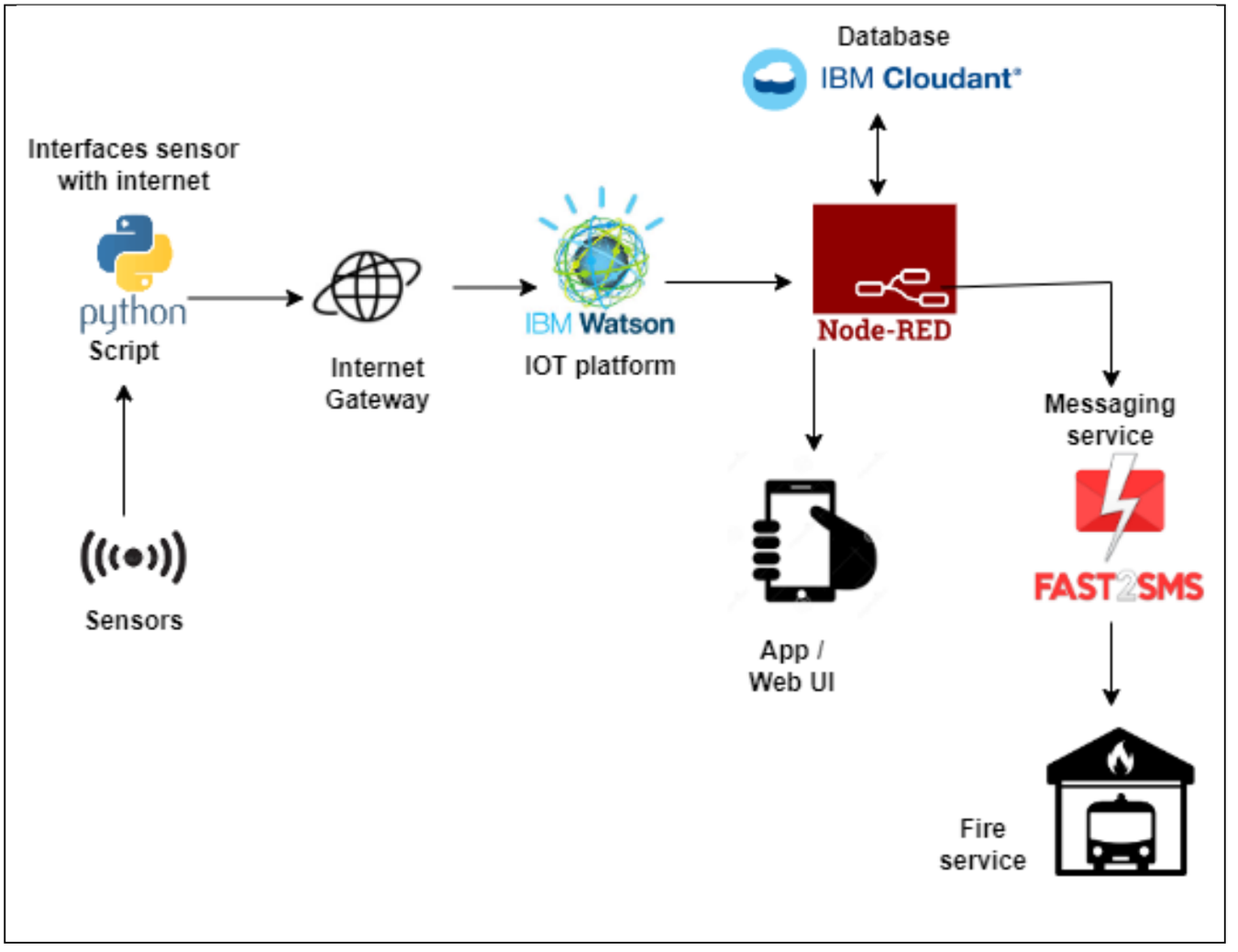

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	user interacts with application e.g. Web UI, Mobile App.	MIT app inventor
2.	Application Logic-1	Reads data from the sensors and transmits to IBM Watson IOT platform.	Python
3.	Application Logic-2	Processes data with given algorithm to detect fire.	IBM Watson STT service
4.	Application Logic-3	Data received from sensors are transmitted to Node Red applications.	Node RED
5.	Cloud Database	Database Service on Cloud.	IBM DB2, IBM Cloudant etc.
6.	File Storage	JSON file system.	IBM Block Storage or Other Storage Service
7.	External API-1	To connect IBM cloud with Node RED	IBM Cloud API, etc.
8.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration Cloud Server Configuration	Cloud Foundry, Kubernetes.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	IBM Watson – IoT framework
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	AES 256 algorithm, Transport layer security (TLS).
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	IBM's Industry 4.0
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	IBM Watson with load balancers.
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	1000 messages per sec, Cache Management.

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/