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

Date	26 October 2022
Team ID	PNT2022TMID04601
Project Name	Real-Time River Water Quality Monitoring and Control System
Maximum Marks	4 Marks

Technical Architecture:

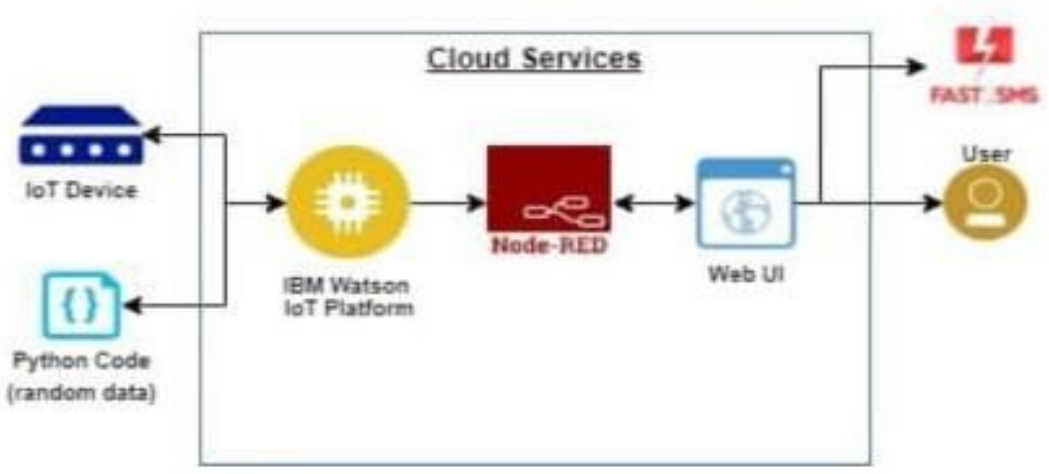

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Mobile UI	HTML, CSS, java script
2.	Application Logic-1(mobile application)	Machine learning model is used for identifying the quality of water	Python
3.	Database	Data Type	NOSQL.
4.	Cloud Database	Database Service on Cloud	IBM Cloudant
5.	File Storage	File storage requirements: Container Platform Version 4.6	IBM Block Storage
6.	External API-1	The data is used to compare the values for sensor with database	IBM water quality API
7.	Machine Learning Model(node-red)	For interfacing hardware and software application(a virtual wiring tool)	Platform: Node.js
8.	Infrastructure (Server / Cloud)	Application Deployment on cloud Cloud Server Configuration : application-client-end	IBM cloud

Table-2 : Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	App development and Machine learning model development	Python Script
2.	Security Implementations	IBM cloud service IBM Watson IoT Platform and Device Node-Red Service	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	As the proposed system involves only three sensors, the application can be easily developed into many numbers	IoT
4.	Availability	Maximum down time will be about 4 hours	IoT
5.	Performance	Load time for user interface screen shall not be more than 2 seconds. Login info verified within 10 seconds.	IoT