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

Date	18 October 2022
Team ID	PNT2022TMID06691
Project Name	Real-Time River Water Quality Monitoring and Control System
Maximum Marks	4 Marks

Technical Architecture:

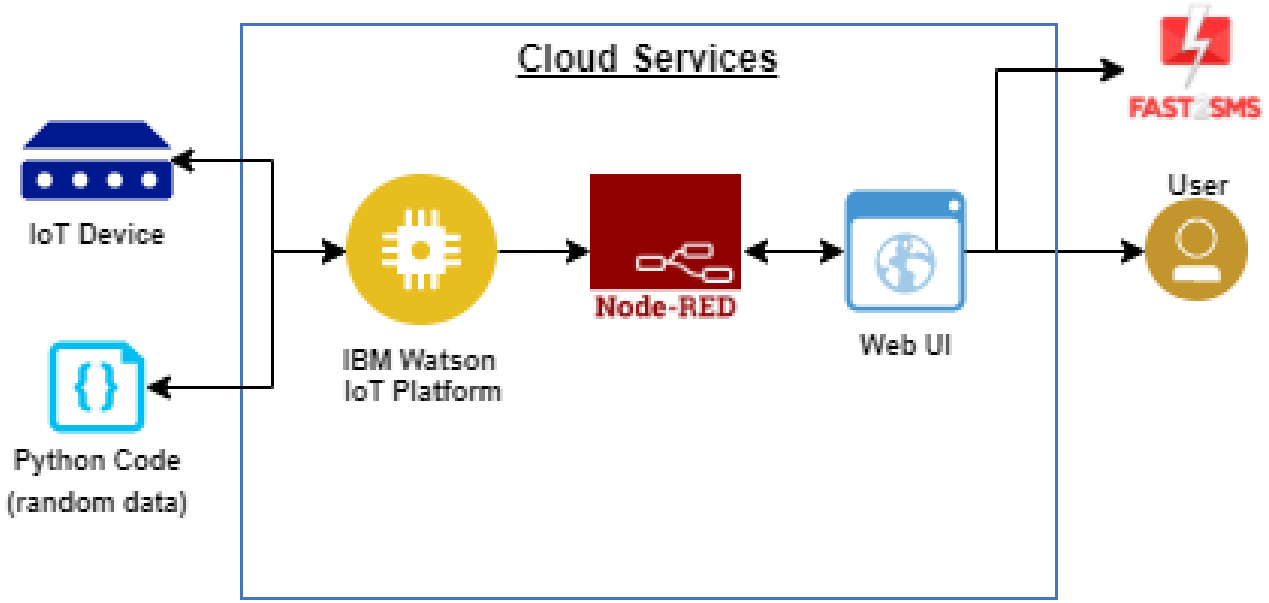

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The UI is the point of human computer interaction and communication in a device	Web UI
2.	Application Logic-1	Logic for a process in the software application	Python
3.	Application Logic-2	Logic for a process in the sensor application	IBM Watson STT service
4.	Application Logic-3	Logic for checking the accurate water Quality	IBM Watson Assistant
5.	Database	The PH, Temperature, Conductivity, Oxygen, Turbidity values are stored	MySQL, NoSQL.
6.	Cloud Database	A Cloud Database helps to store, organize and manage data	IBM Cloudant.
7.	File Storage	File storage requirements	IBM Cloudant DB Storage
8.	External API-1	It is used to get the depth data and climate, environment weather for analysis.	IBM Weather API.
9.	Infrastructure (Server / Cloud)	Application Deployment on IBM Cloud	Node-Red.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Online Software tools	TinkerCAD, WokWi.
2.	Security Implementations	The system uses cloud storage for security purpose and backup the data at any time	IBM Cloud Services.
3.	Scalable Architecture	The project is scalable because it covers a particular zone	IBM Watson IoT.
4.	Availability	The System is available for 24/7 for the regular supply of quality water	Rechargeable sensors.
5.	Performance	The system works in low power and highly efficient	IoT, Node-Red, WiFi module Sensors.