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

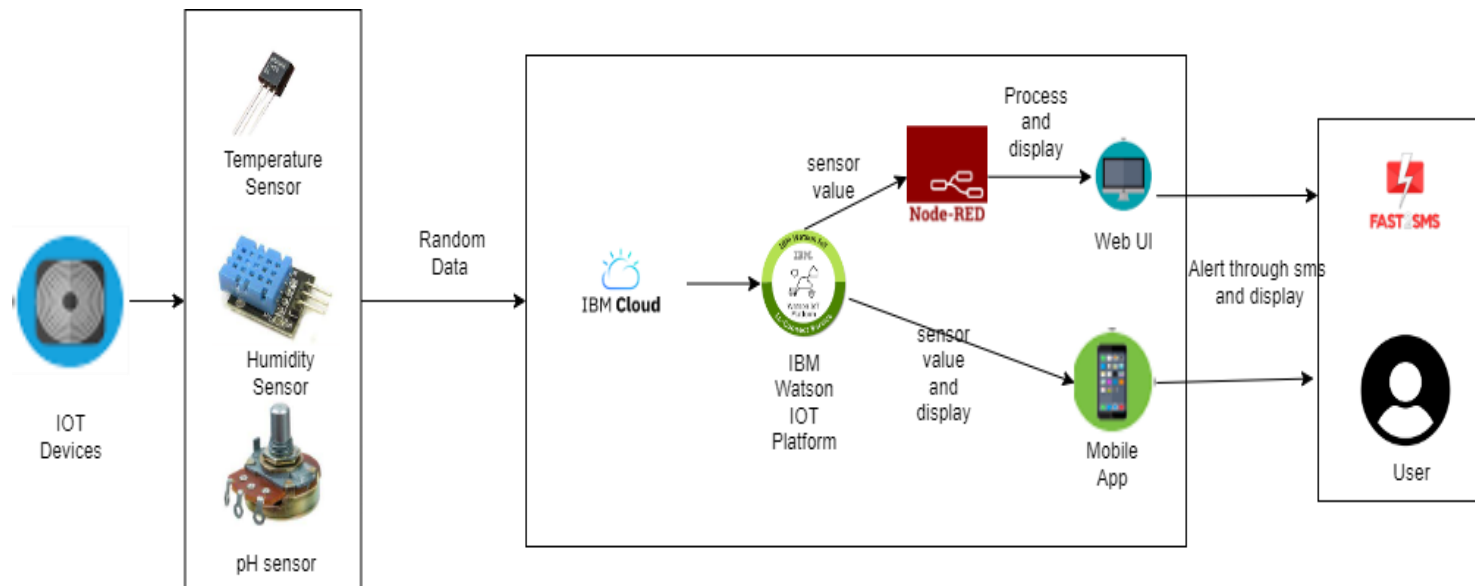| Date	28 October 2022
Team ID	PNT2022TMID35857
Project Name	REAL TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM
Maximum Marks	4 Marks

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	Data are stored in the cloud	IBM Watson STT service.
4.	Application Logic-3	Logic for checking the accurate water quality	Quality monitoring system.
5.	Database	The pH, temperature, turbidity values are stored. Data are stored into the system for future references.	MySQL, NoSQL.
6.	Cloud Database	A cloud database helps to store, organize and manage data.	IBM Cloudant
7.	File Storage	Files are stored into the system	IBM Cloudant DB Storage and local file system is used.
8.	External API-1	It is used to get depth data about climate, environment weather for analysis	IBM Weather API, Google Weather API.
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration Cloud Server Configuration	Node RED.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Online software tools	Node – Red, IBM Cloudant, IBM Watson IOT Platform, Tinkercad,
2.	Security Implementations	Only the authorised users can able to access the data	Encryptions technology is used in it.
3.	Scalable Architecture	This project is scalable because it covers a particular zone	IBM Watson IOT.
4.	Availability	The system is availability for 24/7 for the regular monitoring of quality water	Node – Red(Web UI), MIT App(Mobile App)
5.	Performance	This system works in low power and is highly efficient	IoT, Node RED, Wi-Fi module sensors.