Project Design Phase – II

Technology stack (Architecture & Stack)

Date	19 october 2022
Team ID	PNT2022TMID48312
Project Name	Project – Real time river water quality monitoring and control system
Maximum Marks	4 Marks

Technical architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table 1 & table 2.

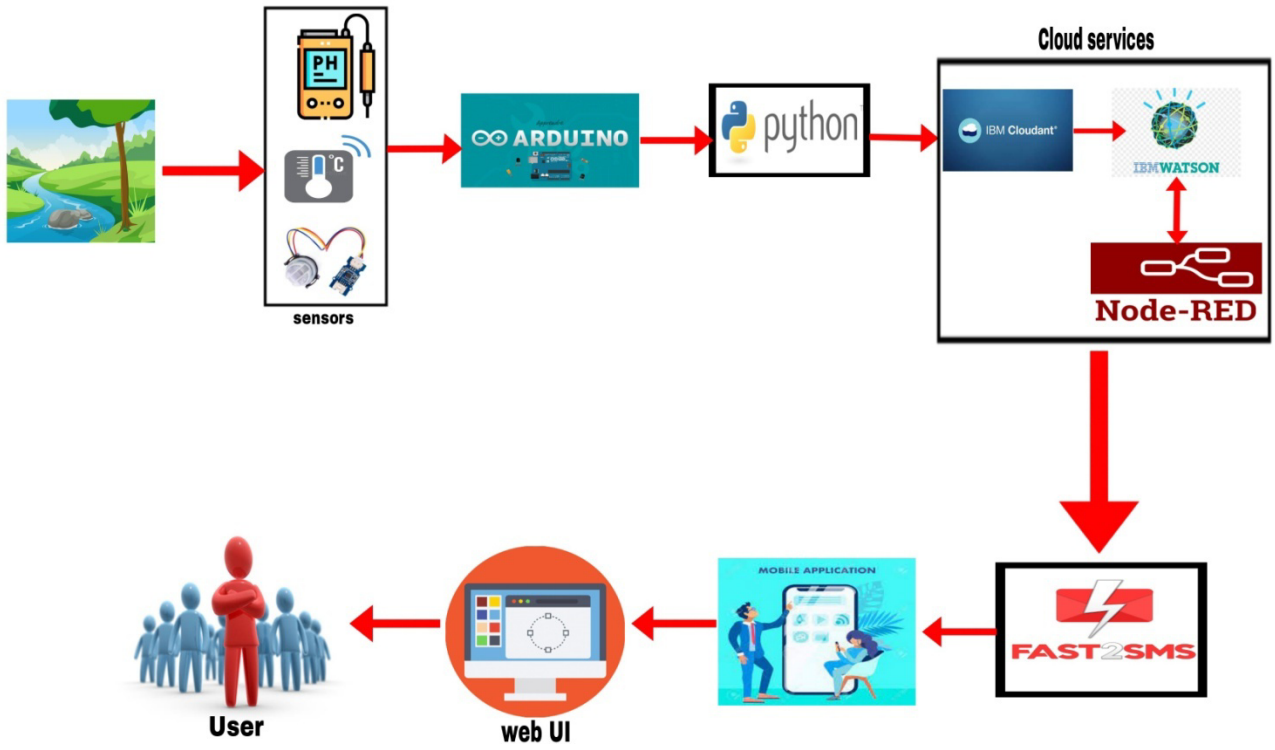

Table-1: Components & Technologies:

s.no	Component	Description	Technology
1.	User interface	Web UI, Mobile App.	HTML, CSS, Python Script.
2.	Application Logic-1	Available water resource to detect and to search location.	Python Script.

3.	Application Logic-2	Statistical random values and graphical analysis.	IBM Watson STT service.
4.	Application Logic-3	Alert message to the user.	IBM Watson Assistant.
5.	Database	Random values of PH level turbidity and temperature in river water.	MySQL, NoSQL.
6.	Cloud Database	Database service on cloud by the administrator.	IBM Cloudant.
7.	File Storage	Storing the random values to compare with threshold value.	IBM Block storage.
8.	External API -1	Effective data generation.	IBM Watson API.
9.	External API -2	Google sign-in.	Google API.
10	Machine Learning Model	To recognize file pattern (here graphical mode of statistical data is generated).	Object recognition model (IBM Watson and node-RED).
11.	Infrastructure (Server/Cloud)	Software library workspace.	Cloud foundry (IBM Cloudant) ,adding.

Table-2: Application Characteristics:

S.no	Characteristics	Description	Technology
1.	Open-source frameworks	The open-source tools we utilised to create our project.	Node-RED, IBM Cloudant, IBM Watson IoT Platform.
2.	Security implementations	Use of a login page with a user's unique user name and password on a web interface optimized for mobile devices and computers with adjustable screen sizes.	Password protection in MIT app.
3.	Scalable architecture	Optimised for mobile devices and computers with adjustable screen sizes.	Node-RED (Web UI).
4.	Availability	Accessible to user's through both a web UI and a mobile app.	Node-RED (Web UI), MIT app (Mobile app).
5.	Performance	Give precise results and a prompt warning in the event of water contamination.	Node-RED (Web UI) , MIT app (Mobile app).