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

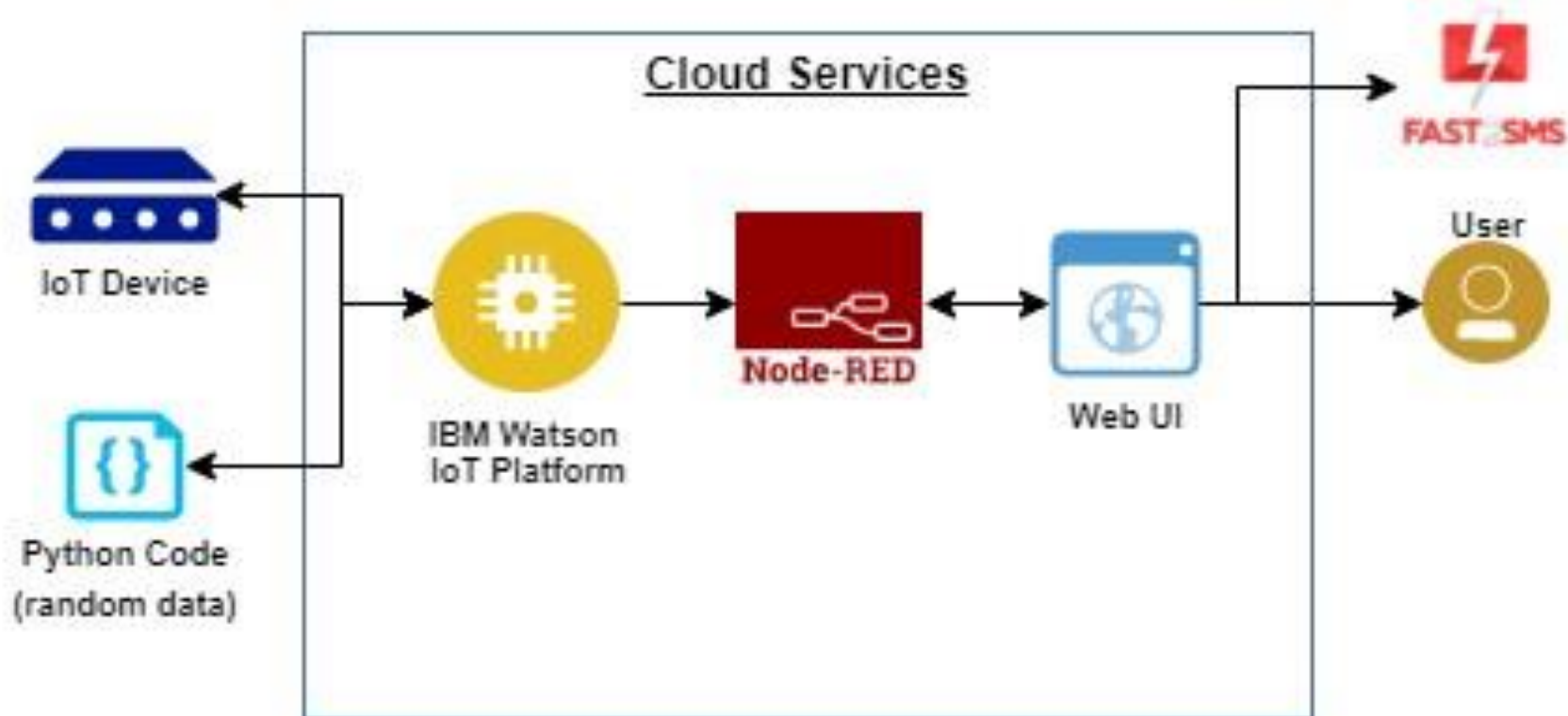| Date	31 October 2022
Team ID	PNT2022TMID34542
Project Name	Project – Real time river water quality monitoring and control system
Maximum Marks	4 Marks

Technical Architecture:

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user receives alert through SMS which contains a website link .In the website all the water quality data will be available.	HTML, CSS, JavaScript , Node-red.
2.	IBM Watson IOT platform	It is a fully managed cloud hosted service that makes it simple to derive value from internet of things	Python , java , node.js

3.	Node - Red	It is a flow based development tool for visual programming used for wiring devices , APIs and online services .It provides a web browser based flow editor which can be used to create javascript functions.	Java Script
4.	Web interface	The collected data will displayed visually for the user	HTML , CSS , Javascript
5.	Data Storage	File storage requirements	IBM Block Storage
6.	Cloud Database	The water quality data will be stored in the IBM cloud platform.	IBM DB2, IBM Cloudant.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Fast SMS	This application is used to send SMS alert to the specified user	GSM
2.	Security Implementations	Application security testing can expose application-level flaws, assisting in the prevention of these attacks	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Microservices allow a large application to be separated into smaller independent parts, with each part having its own realm of responsibility.	Java, python
S.No	**Characteristics**	**Description**	**Technology**
		To serve a single user request, a microservicesbased application can call on many internal microservices to compose its response	

4.	Availability	The load balancer intelligently routes client requests to the right server, in a manner that maximizes performance and capacity utilization while sending requests only to servers that are online.	Server load balancing (SLB)
5.	Performance	Great UI (User Interface), Fast Loading Time and High Performance, Compatible with a Mobile Platform	Python , HTML , JS , IBM Watson , GSM