Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	09 October 2022
Team ID	PNT2022TMID15687
Project Name	Project - Real-Time River Water Quality Monitoring and Control System.
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Control system(Arduino)	Arduino is connected to sensors, and it periodically gathers measurement data from the sensors.
FR-2	WSN Sensor	For the monitoring of pH, temperature, dust particles, and turbidity, several sensor nodes have been installed.
FR-3	Software Design Requirements	In order to categorize water quality as Good or Bad, WSN requires an IoT platform that requires a neural network model. IoT has big data analytics integrated to store data in the cloud and continuously analyze it.
FR-4	Display	Displays the resulting sensed pH, temperature, turbidity. If ,acquired value > Threshold value, then comment=BAD. If, acquired value < Threshold value, then comment=GOOD.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Monitoring water quality is crucial to ensuring that it is safe for people to drink as well as for wildlife and marine life, to understand how it affects the ecosystem, and to prevent harm to marine life.
NFR-2	**Security**	The IoT networks have excellent connection speeds and are highly safe. All of the problems are comfortably solved by technology.
NFR-3	**Reliability**	The method for monitoring the quality of the water is dependable, and its results can be trusted. Considering that standardised hardware and software architectures are employed.
NFR-4	**Performance**	Water quality monitoring is done in real time, and if the quality is poor, the authorities are notified.

NFR-5	**Availability**	The monitoring system is accurately made available for usage at all times.
NFR-6	**Scalability**	A system with high frequency, high mobility, low power consumption, and low cost.