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

Date	03 October 2022
Team ID	PNT2022TMID21316
Project Name	Project - Rain water quality monitoring 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	Detection of temperature, pH, Salinity, BOD, COD	Detection of temperature using Temperature Sensor Detection of pH measurements is done using pH sensor Detection of Salinity using Salinity Sensor Detection of CoD using Thermoreactor.
FR-2	Calculation	Calculation using Node-RED Calculation using Python
FR-3	Store of results	Store the results using IBM Cloud
FR-4	Alert the end user	Develop a mobile app Alert the user using alarm Alert the user using Notifications
FR-5	Transport of data	Transport of Data from Edge to Cloud Transport of Data from Cloud to Edge Transport of Data from Cloud to Mobile Drive
FR-6	Statistics	Statistics monitoring done through Node-RED using Dashboard nodes Gauge and Chart

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The alert message will be sent to an authorized person routinely through a mobile app, when water quality detected does not match the preset standards. So that the actions can be taken.
NFR-2	**Security**	The alert message will be sent only to the authorized person through a mobile app. And the water quality will be monitored regularly as well as if there is any problem in an sensor, we will have the same model connected with cloud, which will help us to overcome this situation.
NFR-3	**Reliability**	In case the water quality detected does not match the preset standards, an alert message will be sent routinely via a mobile app to an authorized person.
NFR-4	**Performance**	Use of Cloud applications and Node-RED will provide additional features to the model. And hence the model will be smart. When water quality detected does not meet preset standards, a mobile app will send an alert message to an authorized person.
NFR-5	**Availability**	The Design make the continuous monitoring of the data and quality so as to make an emergency alerts at any time, suitable at any weather conditions
NFR-6	**Scalability**	The Device is scalable independent of any measurement or sub stations since it’s a cloud based model