# Project Design Phase-II

**Solution Requirements (Functional & Non-functional)**

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| Date | 22 October 2022 |
| Team ID | PNT2022TMID38637 |
| Project Name | REAL TIME RIVER WATER QUALITY  MONITORING AND CONTROL SYSTEM |
| Maximum Marks | 4 Marks |

## Functional Requirements:

Following are the functional requirements of the proposed solution.

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | River water sensing | The sensing parameters are PH, Turbidity, temperature. |
| FR-2 | Data collection | The accurate value of pH, Temperature, Turbidity are  Collected from various samples. |
| FR-3 | Monitor | The collected data can be monitored by using quality  monitoring system by using Arduino and python code. |
| FR-4 | Control | The system controls the utilization of degraded water. |
| FR-5 | Data storage | The data can be stored by using cloud service such as  (IBM Watson IoT, IBM Cloud.) |
| FR-6 | Intimation to Authority | The stored data can be sent to the Corporation using  Short Message Service or email services. |

## Non-functional Requirements:

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

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | To measure water parameters such as pH, dissolved  oxygen, turbidity, conductivity, etc. using available  sensors at a remote place |
| NFR-2 | **Security** | This data can be accessed by the authorized users by  logging into their accounts using a User ID and  password to view data. The data is collected,  processed, analyzed, and transmitted and displayed  all in real time |
| NFR-3 | **Reliability** | Wireless sensor networks with low power consumption, low-cost and high detection accuracy in pH, conductivity, turbidity level, etc. |
| NFR-4 | **Performance** | Creating a system that uses wireless sensor networks to continuously monitor river water quality at remote locations with low power consumption, low cost and highly efficient for montoring |
| NFR-5 | **Availability** | The system is available for 24/7 for the regular monitoring of quality water. |
| NFR-6 | **Scalability** | This project is scalable for a small area. |