**Project Design Phase-II**

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

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| Date | 18October 2022 |
| Team ID | PNT2022TMID11378 |
| Project Name | Efficient water quality analysis and prediction using machine learning |
| 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 | User Registration | Registration through Form  Registration through Gmail  Registration through LinkedIN |
| FR-2 | User Confirmation | Confirmation via Email  Confirmation via OTP |
| FR-3 | Machine learning model deployment | It is to predict the water quality index (WQI) and to predict water quality classification(WQC) |
| FR-4 | Accessing datasets | Datasets are collected by data pre-processing method. |
| FR-5 | Testing The Water Samples | Provides an option to test any kind of water samples with required parameters and to calculate the Water Quality Index and impurities present |
| FR-6 | Compliance to Rules or Laws | Privacy Policy, Terms and Conditions and End User Agreement. |

**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** | The customers can have the opportunity to view a better interpretation of results. The customers are also recommended with the purification techniques based on the impurities. |
| NFR-2 | **Security** | We have designed this project to secure the people from drinking the impurity water. |
| NFR-3 | **Reliability** | The reliability should be in providing a efficient and quality drinking water. |
| NFR-4 | **Performance** | The performance of the system should always be accurate in calculating the WQI value so that the customers will be satisfied with their need. |
| NFR-5 | **Availability** | By developing and deploying resilient hardware and software we can analyse the drinking water |
| NFR-6 | **Scalability** | This project used to measure and determine the quality of water. |