**Project Design Phase-II**

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

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| Date | 15 October 2022 |
| Team ID | PNT2022TMID28764 |
| 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 | Users can enter their details using the login form. |
| FR-2 | User Confirmation | Confirmation via Email |
| FR-3 | Authorization level | A Security question will be displayed to the user to verify the details. |
| FR-4 | Reporting | 1. Result of the water quality analysis will be sent a message to the user. 2. The real-time water quality report is collected and the dataset is used to predict the water quality for future works. |
| FR-5 | Business rules | Water Quality Index(WQI) formula will be used for the water quality analysis and prediction. |

**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** | Allows users to identify missing data elements available in the water quality portal data. |
| NFR-2 | **Security** | Authorization via Email. |
| NFR-3 | **Reliability** | Our model will accurately report the uncertainty in the prediction. |
| NFR-4 | **Performance** | The system effectively compares the input parameters given by the users with the dataset. |
| NFR-5 | **Availability** | Our model will keep working and be available for work even if there is an infrastructure failure. |
| NFR-6 | **Scalability** | High mineral levels are found in water as well as Water Quality Index (WQI) and Water Quality Classification (WQC) are accurately predicted. |