PROJECT DESIGN PHASE II

FUNCTIONAL & NON FUNCTIONAL REQUIREMENTS

Functional Requirements:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Check water quality analysis	• Water's quality is more important which should be considered as many water-borne diseases are more widely known. • So, it is necessary to analyse and predict the quality of water samples so as to determine and detect the contaminants present in those samples Patient dataset such as Temperature, PH, Conductivity, B.O.D, Nitratenan, Fecal Coliform, Total Coliform, Yearetc.
FR-2	Predict Water Quality by considering all water quality standard indicators	• Using Machine learning model
FR-3	Accessing datasets	• Datasets are collected by data preprocessing method then followed by data visualization.
FR-4	Classification of dataset	• Dataset includes of data exploration. • In which prediction of water quality index calculation is performed using KNN ,SVM, ANN, Navis bayes and linear regression algorithms.
FR-5	Splitting and train the data	• In this phase, we split the dataset into training and test dataset , and then trained the models using trainingdataset
FR- 6	Test the model	• In this phase, we tested the accuracy, precision and sensitivity of the models with the test datasetthat was formed in previous phase andthe most accurate model is figured out.

Non-functional Requirements:

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	• Predicting the urban water quality is a challenging task since the water quality varies in urban spaces non- linearly and depends on multiple factors, such as meteorology, water usage patterns, and land uses.
NFR-2	**Availability**	• Industries that provide sanitation facilities and products (like water purifiers, quality testers etc.) can deploy this solution to provide more waste water treatment plants, better insights in health concerns and there may also be an increase in awareness and demand for better water quality testing and availability.

NFR-3	**Reliability**	• This project will help everyone inprotecting their health. • Accurate water quality prediction is the basisof water environment management and is of great significance for water environment protection.
NFR-4	**Performance**	• This system uses different sensors for monitoring thewater quality by determine pH, Turbidity, conductivityand temperature. • Data is gathered from different sources it is collected in a raw format and this data isn't feasible for the analysis.
NFR-5	**Security**	• The quality of water is a major concernfor people living in urban areas. • The quality of water serves as a powerful environmental determinant and a foundation for the prevention and control of waterborne diseases.
NFR-6	**Scalability**	• This project used to measure and determine the quality of water. This provides pollution free and purified water.