Project Design Phase-I - Solution Fit Template

Project Title: Efficient Water Quality Analysis & Prediction using Machine Learning
Team ID: PNT2022TMID12998

Date : 10 October 2022
Maximum Marks: 2 marks

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) — CS

Water is colorless substance required for the survival of most existing organisms and humans and consumed by all living creatures. Water is utilized for a variety of purposes, including drinking, agriculture, and industrial use.

6. CUSTOMER CONSTRAINTS — CC

The purification of water should be done in the way that essential minerals are retained in the water. The water quality has influence on human health and environment.

5. AVAILABLE SOLUTIONS — AS

The available solution is finding the water quality index (WQI) and water quality class(WQC).

Explore AS, differentiate

Focus on J&P, tap into BE, understand RC

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

Now a days, due to urbanization water is getting contaminated. The contaminated water results in various waterborne diseases. The quality of water has a direct influence on both human health and the environment. Hence predicting and analyzing the water quality beforehand prevents many diseases.

9. PROBLEM ROOT CAUSE — RC

Identify efficient and reliable solution. Collect sufficient amount of data. Identify the associated causal factor.

7. BEHAVIOUR — BE

Water quality analyst predict the water quality patterns and it is very significant to include a temporal dimension to the analysis, so that the seasonal variation of water quality is addressed. They develop methods and identify the product which produces impurities.

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS — TR

This triggers to discover the pattern in user data and then make prediction based on intricate pattern for analyzing the quality of water. It also helps to improve the efficiency and more protected to drink.

4. EMOTIONS: BEFORE / AFTER — EM

Before there is no efficient method to analyze the parameters. The statistical methods are time consuming. Now there is water purification systems because of those systems, diseases are prevented.

10. YOUR SOLUTION — SL

To predict the water quality, various supervised machine learning algorithms are employed. The models like linear regression, random forest classifier and support vector regression can be used. Hence supervised learning models are trained and developed to predict the quality of water.

8. CHANNELS of BEHAVIOUR — CH

8.1 ONLINE

Helps to notify the data preprocessing information.

8.2 OFFLINE

By attaining the standard quality of satisfy all parameterit is consider as pure water.

Extract online & offline CH of BE