Project Title: Efficient Water Quality Analysis and Prediction using Machine Learning

Project Design phase - I Solution Fit Template

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Define CS, fit into CC

1. CUSTOMER SEGMENT(S)

Human beings are our customers. Safe drinking water is one of the basic requirements for human health, development, and wellbeing.

People are becoming more health conscious and are more careful toward drinking water.

6. CUSTOMER CONSTRAINTS

CC

People tends to loss their health if the water quality is not good.

Getting enough water every day is important for your health. Drinking water can prevent dehydration, a condition that can cause unclear thinking, result in mood change, cause your body to overheat, and lead to constipation and kidney stones.

3. AVAILABLE SOLUTIONS

AS

Machine learning algorithm is used for water quality analysis.

Three machine learning algorithms, namely, support vector machine (SVM), -nearest neighbor (K-NN), and Naive Bayes, have been used for the WQC (Water Quality Certification) forecasting.

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

2. JOBS-TO-BE-DONE / PROBLEMS

J&P

By providing good quality drinking water we can make rid of health issues.

Pure water flushes out toxins, improves your complexion, relieves headaches, promotes weight loss, and aids in digestion. So when your water is of poor quality, your mind and body can't function properly. You may feel sluggish, bloated, and dehydrated without the proper amount of high quality water.

9. PROBLEM ROOT CAUSE

RC

Common sources of drinking water contaminants include:
industry and agriculture.

Organic solvents, petroleum products, and heavy metals from disposal sites or storage facilities can migrate into aquifers.

7. BEHAVIOUR

BE

Human beings are directly related to the problem of poor quality drinking water.

Human beings are related to this problem of poor quality drinking water daily knowingly and unknowingly.

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

3. TRIGGERS

TR

Due to the health issue faced by the human beings because of poor drinking water, it triggers the people to act.

Contaminants in our water can lead to health issues, including gastrointestinal illness, reproductive problems, and neurological disorders. Infants, young children, pregnant women, the elderly, and people with weakened immune systems may be at increased risk for becoming sick after drinking contaminated water.

4. EMOTIONS: BEFORE / AFTER

E

M

It can make you feel more full so that you eat fewer calories (28, 29). In one study, dieters who drank 16.9 ounces (0.5 liters) of water before meals lost 44% more weight over a period of 12 weeks than dieters who didn't drink water before meals (30).

10. YOUR SOLUTION

SL

In this Project, we are going to implement a water quality prediction using machine learning techniques. In this technique, our model predicts that the water is safe to drink or not using some parameters like Ph value, conductivity, hardness, etc.
Machine learning algorithm to be used:
1.Decision Tree algorithm

2.Support Vector Machine(SVM).

3.KNN algorithm

8.CHANNELS OF BEHAVIOUR

CH

8.1. ONLINE

Customer can able to know potability through the graph. Hence it will be easier for customer to visualize the water quality.

8.2. OFFLINE

Customer can be able to analyze the water quality and take decision to drink water.