

# Project Design Phase 1

## Problem Solution Fit Template

Project Name	Project-Efficient Water Quality Analysis And Prediction Using Machine Learning
Team ID	PNT2022TMID45606

<b>1. CUSTOMER SEGMENT(S)</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Various industries and places like hotels, restaurants and various textile factories who wish to test the water sources they use.</li> <li><input type="checkbox"/> Various educational institutions who utilize the purified drinking water.</li> </ul>	<b>6. CUSTOMER CONSTRAINTS</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> They don't get accustomed in using those testing tools.</li> <li><input type="checkbox"/> Testing using agencies can't be done at anytime and at anyplace</li> </ul>	<b>5. AVAILABLE SOLUTIONS</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Titrimetric Test Kits:</b> Determines the concentration of solids in a water sample.</li> <li><input type="checkbox"/> <b>Portable TDS Testers:</b> It determines the concentration of various types of organic salts like Magnesium, calcium, sodium bicarbonates, sulfates and chlorides.</li> </ul>
<b>2. JOBS-TO-BE-DONE AND PLANS</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Water quality has been estimated through expensive and time consuming lab and devices that does not consider all the necessary factors that has caused the deterioration in water quality.</li> <li><input type="checkbox"/> Customers are affected in various ways of life such as health, food production, environment, etc. due to contaminated water.</li> </ul>	<b>9. PROBLEM ROOT CAUSE</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Rapid industrialization and urbanization has led to the deterioration of water quality at an alarming rate.</li> <li><input type="checkbox"/> Poor water quality have been known to be one of the major factors of escalation of harrowing diseases.</li> </ul>	<b>7. BEHAVIOURS</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> The consumption of polluted or contaminated water makes the people fall ill and causes various health issues which affect them economically, physically and mentally as well</li> </ul>
<b>3. TRIGGERS</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> To enhance the standard of living of people by improving health aspects by providing water quality testing tools in order to reduce the water borne diseases and also to save time for predicting the quality and if possible to be integrated with future technologies.</li> </ul>	<b>10. YOUR SOLUTION</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> To build an effective and efficient water quality prediction system for all kinds of water samples using the Regression and Classification algorithms of Machine Learning to provide a better and easy interpretation of analysis of water samples so that the people with no prior knowledge can understand the results of analysis process and can be made available at anytime and at anyplace.</li> </ul>	<b>8. CHANNELS of BEHAVIOUR</b> <div> <b>1. ONLINE</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Advertising in social media</li> </ul> </div> <div> <b>2. OFFLINE</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Words of mouth among customers.</li> </ul> </div>
<b>4. EMOTIONS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>BEFORE:</b> Doubtful state.</li> <li><input type="checkbox"/> <b>AFTER:</b> Customer satisfied.</li> </ul>		