PHASE 1

PROBLEM DEFNITION:

In this project involves analyzing water quality data to assess the suitability of water for specific purposes, such as drinking. The objective is to identify potential issues or deviations from regulatory standards and determine water potability based on various parameters. This project includes defining analysis objectives, collecting water quality data, designing relevant visualizations, and building a predictive model.

 # IMPORTING PACKAGES

```
import pandas as pd

import seaborn as sns

import matplotlib.pyplot as plt

from sklearn.preprocessing import StandardScaler

from sklearn.model_selection import train_test_split

from sklearn.metrics import accuracy_score, classification_report,
confusion_matrix
```

CODE EXPLANATION:

Step 1: Import requires packages for analysing.

Step 2: Then import the required algorithms

Step 3: Visualize using Seaborn.

DESIGN THINKING:

- We use various models inorder to see the correlation of water quality among the various samples of water.
- Using the machine learning algorithm, importing the given csv data report and finalizing the water quality.

DESIGN THINKING AND PROBLEM SOLVING:

1. Analysis Objectives: Define specific objectives for analyzing water quality data, including assessing potability, identifying deviations from standards, and understanding parameter relationships.
2. Data Collection: Gather the provided water quality data containing parameters like pH, Hardness, Solids, etc.
3. Visualization Strategy: Plan how to visualize parameter distributions, correlations, and potability using suitable tools.
4. Predictive Modeling: Decide on the machine learning algorithms and features to use for predicting water potability.
5. Algorithm Selection: Using machine learning algorithms we select the algorithm related with water quality analysis.