# Project Design Phase-II
# Technology Stack (Architecture & Stack)

| | |
|---|---|
| Date | 17 October 2022 |
| Team ID | PNT2022TMID54402 |
| Project Name | Efficient water quality analysis and prediction using machine learning |
| Maximum Marks | 4 Marks |

## Technical Architecture:

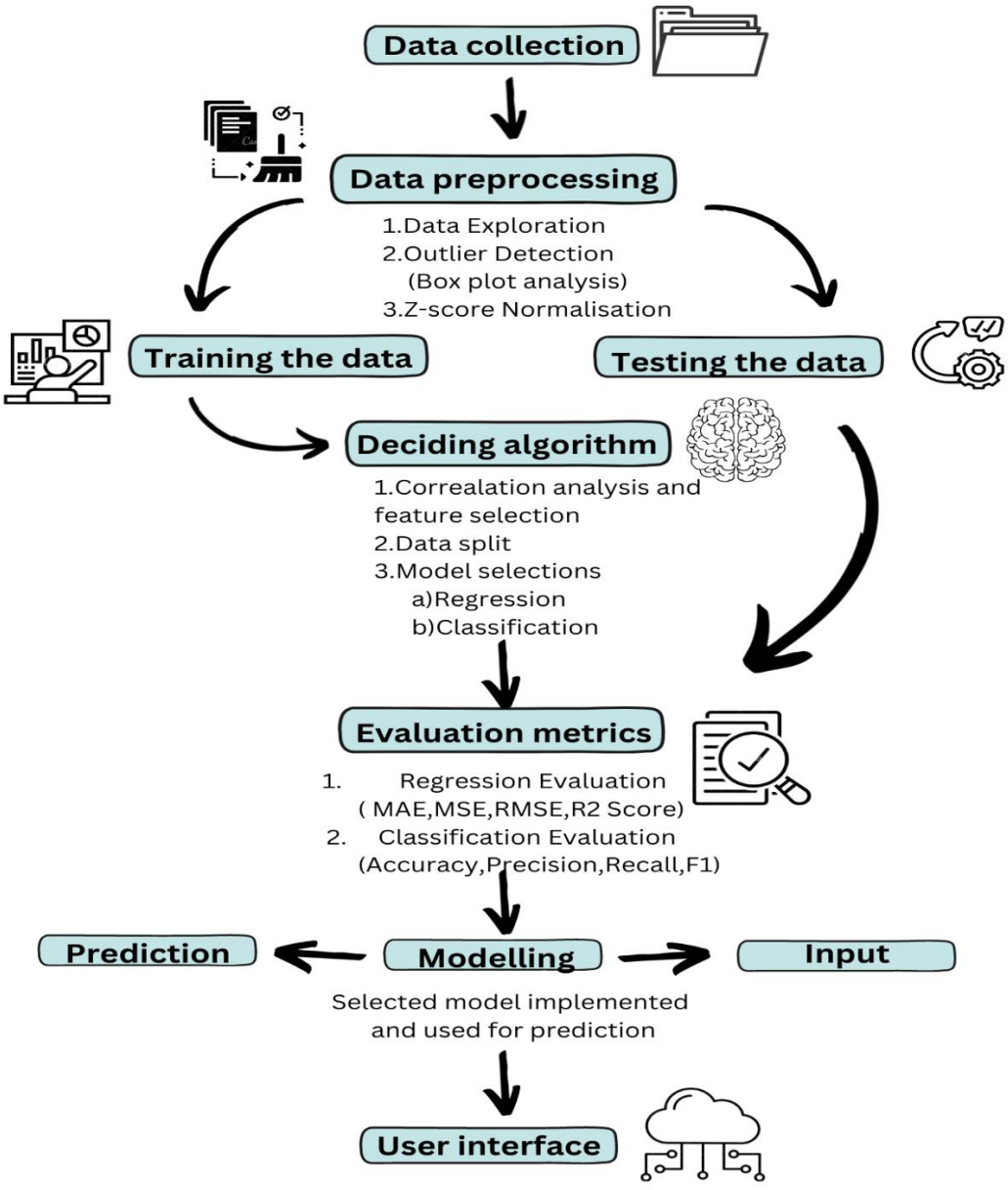

**Table-1: Components & Technologies:**

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | Loading the dataset | Collected dataset loaded into jupyter notebook | Python(pandas) |
| 2. | Preprocessing - analyzing the data | Presence of null values, outliers are analyzed and rectified | Python (pandas, numpy,matplotlib,seaborn) |
| 3. | Splitting | Splitting data into training and testing | Python |
| 4. | Model selection | Deciding whether regression or classification model | Python |
| 5. | Evaluating the model | Checking the accuracy of testing and training | Python |
| 6. | User interface | User interfaced with model | Cloud |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Dissolved Oxygen | Used for calculating WQI and predicting the quality of water | Python |
| 2. | Temperature | Considering as a parameter for training and testing | Python |
| 3. | pH | WQI calculation and quality prediction | Python |
| 4. | Nitrate content | Parameter for analyzing and used for training and testing | Python |