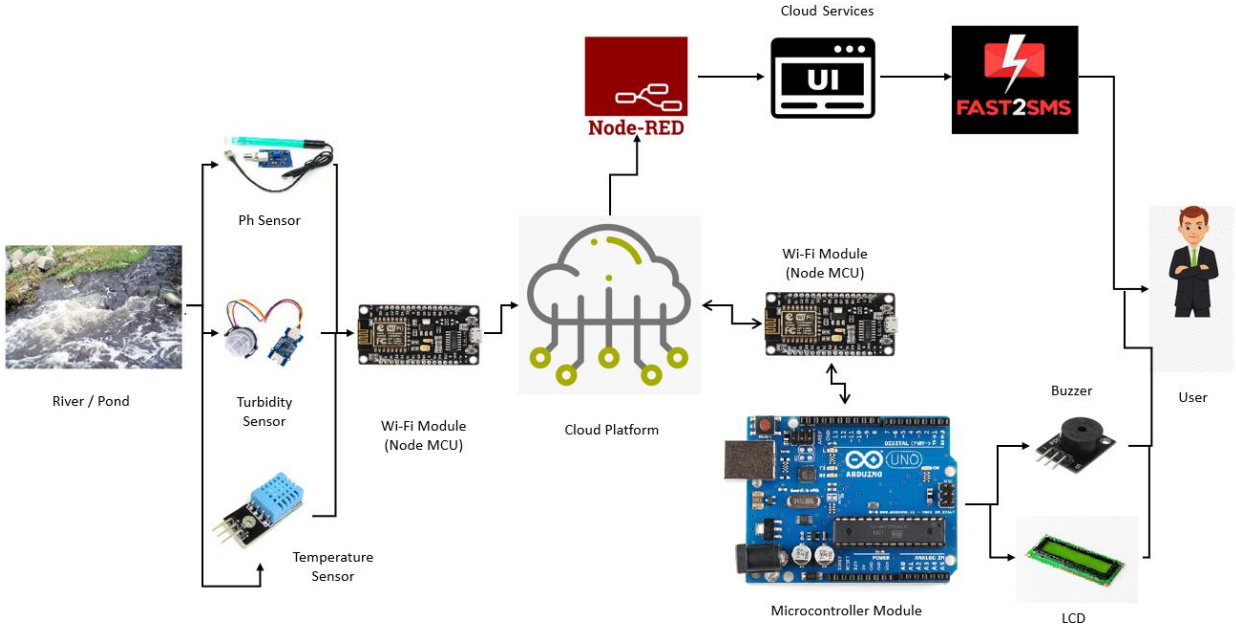
Project Design Phase – 1
Solution Architecture

Date	15 October 2022
Team ID	PNT2022TMID12777
Project Name	Project - Realtime River Water Quality Monitoring and Control System
Maximum Marks	4 Marks

Problem Statement

The responsible of the Officers from Water quality wing is to ensure the quality of river water is good and is suitable for the people to drink. For that they have to test the quality of the water but, it is difficult to do. Because, it requires large labour force, costly equipments and time to assess the quality. To do faster analysis and swift action they are in need of real time data. But it is difficult to achieve and it cost large labour force and money. It also creates demand for self reliant and cost constraints in ensuring the quality of water.

Solution Architecture



First the Sensors (Turbidity, Ph, Temperature) senses the essential parameters that are needed to assess the quality of the water. These values are then transferred to the cloud through any wireless communication protocols like Wi-Fi (here Wi-Fi module – Node MCU is used for that purpose). Then from the cloud using **Publish – Subscriber** model to retrieve data from the entity the desires to assess. The data is then assessed using any microcontroller module (here Arduino). If there's any discrepancies in the values it'll raise the buzzer or it the warning is displayed in the

LCD or any display boards. The processed data can also be stored in the cloud for future use such as using them to train Machine Learning models. Another case is the data retrieved from the cloud is sent as an SMS to the corresponding user by using website user interfaces.