

**Project Reference No. :**

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**Title of the Project :**

“Smart System for Monitoring and Filtration of Corporation Drinking Water”

**Name of the College & Department :**

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## **Keywords :**

pH Value, Turbidity Value, Water Quality, IoT, Remote Monitoring, and Water Contamination Detection.

## **Introduction :**

Water covers about 71% of the earth's surface. 97% of the earth's water is found in the oceans (too salty for drinking, growing crops, and most industrial uses except cooling), 3% of the earth's water is fresh. Water is one of the most important elements on the earth, it is necessary for our day-to-day life. Water naturally contains some minerals and those dissolved minerals in water can be beneficial to health. Water naturally contains some minerals and those dissolved minerals in water can be beneficial to health. There are many cases where people are falling sick because of consuming unhealthy water .

Our system is designed to monitor and control water parameters of corporation distributed water. It is specially designed for overhead tank and other application such are water tanks in the big apartments in a society . It helps in monitoring the water parameters remotely with the help blynk IoT.

## **Objective :**

The objective of this report refers to a sophisticated technology solution designed to monitor the pH level, water level, and turbidity of drinking water. These sensors collect data from different points in the water system and provide continuous measurements. The system collects data from the sensors at regular intervals. Water bodies, whether natural man-made, often encounter the problem of algae infestation, which can lead to unsightly appearances, foul odors, and potential ecological imbalances. Surface algae, in particular, can pose a challenge as it accumulates and thrives on the water's top layer. To reduce human intervention, pH, TDS and temperature has to be monitored remotely it can be achieved with the help of Internet of Things.

## **Methodology :**

The proposed model is divided into two unit they are Monitoring Unit and Controlling Unit.

The Monitoring unit has Arduino UNO as a controller and has two sensors which are pH sensor and turbidity sensor gives the value to the controller and we have LCD for displaying those values. The value read is then transmitted to the ESP 32 through nRF24L01 module.

The Controlling unit has ESP 32 as a controller which has water level sensor and water temperature sensor and an LCD to display those values. It receives pH and TDS values from the Arduino UNO with the help of nRF24L01 module. The received values from Arduino are now compared with the standard value and then the filtration process begins. The chlorination is done based on difference in the values with respect to the standard values. The monitored value and status of the system is then updated to the cloud, using Blynk platform one can monitor the water parameters from remote places.

## **Result :**

The result of drinking water monitoring and filtration is the provision of safe and clean drinking water to communities. Through regular monitoring, potential contaminants and pollutants are detected, ensuring water quality standards are met. Filtration processes effectively remove impurities, pathogens, and harmful substances, reducing the risk of waterborne diseases. The result of pH monitoring helps identifies any deviations from the desired pH range for drinking water, which is typically around neutral (pH 7). By monitoring pH levels, potential issues such as high acidity or alkalinity can be detected. Monitoring TDS levels provides information about water quality and the presence of impurities. High TDS levels can indicate contamination from pollutants, excessive minerals, or salts.