SMART WATER MANAGEMENT

The ultrasonic sensor HC-SR04, which is the heart of our project . The sensor can be easily interfaced with Arduino uno . When a hand is less than 5cm away from the sensor.it reads and stores the value, and the relay is turned on to perform switching action for opening the solenoid valve to let water flow. When the hand moves away from the sensor, beyond 5cm, it reads the value and toggles the relay back to its normally open position and stops the water flow.

Water quality is a crucial factor in various industries and applications . Monitoring Total Dissolved Solids(TDS) levels is essential to ensure water safety and its suitability for different purposes . In this project, we will explore the development of an IOT based Water Quality Monitoring System with TDS sensors &ESP32 using Arduino IOT cloud . by using the power of IOT and the capabilities of the ESP32 microcontroller ,we can monitor TDS levels , EC value, and water temperature in real time. Also these values can be observed online from any part of the world on Arduino IOT cloud. Furthermore , we can store these data on the cloud for analysis. In this project, we used a TDS sensor, DS18B20 Waterproof temperature sensor, and an ESP32 Wi-Fi module to measure water quality parameters such as Total Dissolved Solids(TDS), EC, and Temperature values are displayed on a 0.96’12c OLED display. Additionally the data can be monitored and visualized in graphical form on Arduino IOT cloud. This project enables reduce water wastage, monitoring ,and water quality in real time .