ABSTRACT

An automated IoT based rural water supply management system is developed to provide efficient and safe water distribution. Water is drawn from a local source, filtered, and is stored in a main tank where an ultrasonic sensor monitors the water levels and when water level thresholds are reached the buzzer sounds an alert. When the water supply status reaches Tank 1 and Tank 2, the users are then notified via SMS. To evaluate water quality, a TDS sensor , a temperature sensor , a turbidity sensor , and a pH sensor will be used. Flow sensors and real time feedback LED indicators are used to measure water distributions. After the main tank is filled and water quality verified, the users are confirmed via another SMS. An ESP32 microcontroller processes and sends sensor data to the Blynk app for remote monitoring and remote control using the Arduino IDE. This system improves the water safety, reduces manual intervention and performs the water management in rural areas in an effective way.