SMART WATER MANAGEMENT SYSTEM

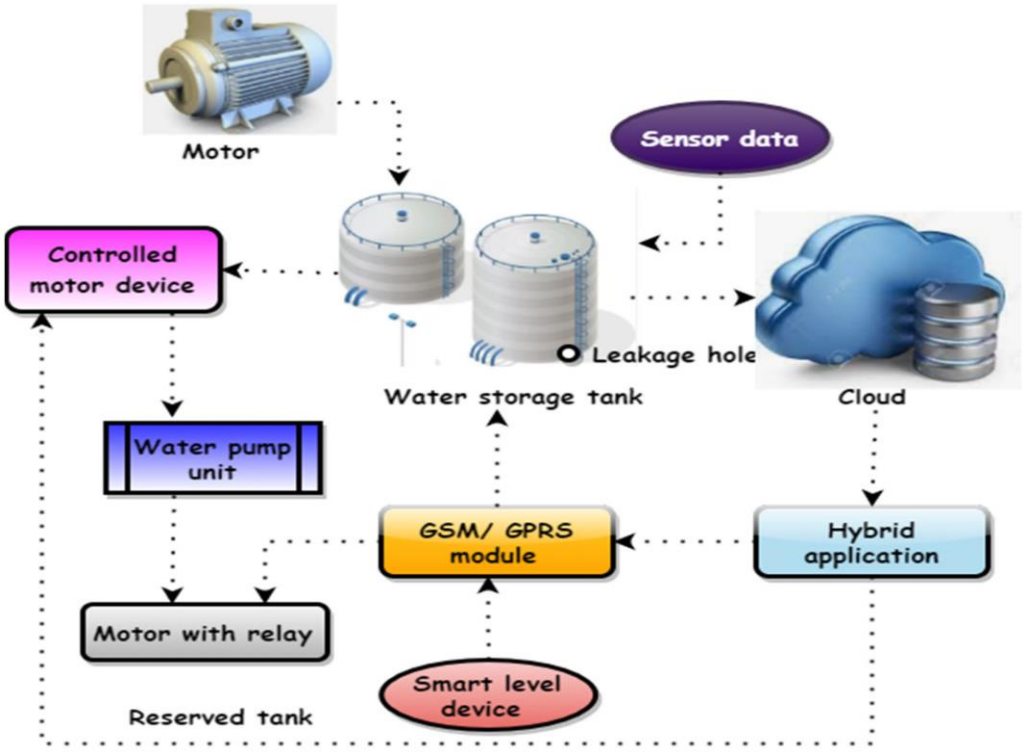
Problem Definition

A constant, high-quality, low-cost water supply. This study introduces a smart water management (IoT-SWM) system that may be used in structures that do not have access to a constant water supply but instead have water stored in enormous tanks underneath. The GSM module collects water use data from each home in a community and transmits it to the cloud, where it is analyzed. A smart water grid is a hybrid application that uses an inspection mode to identify leaks and measure the resulting height differences to keep track of the tank's water level. The system automatically deactivates the affected section after detecting any water shortage or malfunction in the system mechanism, such as broken valves, pumps, or pipes. It sends an emergency signal to building managers. It monitors essential water quality elements regularly, and if they fall below acceptable levels, it sends warning signals to the building management, who can take action. Over an extended period, the system monitored and recorded all water quality metrics. The system restarts when the water pump has been reconnected and sends an emergency alert.

Design Thinking

A hybrid application and two devices make up the micro grid system. The first device measures the water tank's height and sends the real-time information to the cloud using a smart-level device. The GSM module of the smart level sends a signal to another device, a motor-controlled device, which automatically activates and deactivates the motor based on the signal. They activate and deactivate motors when they receive an input signal. With this technology, a leakage measurement hybrid application has been constructed. The device's

ultrasonic Smart Level sensor continuously monitors the tank's height and uploads that data to the internet once per minute. With a microprocessor and UR detector, the GSM/GPRS module may send data to the cloud, where it can be stored and accessed remotely [40,41,42]. The effects are extraordinary. As the water level in the tank rises or falls, the intelligent level device sends a signal to the regulated motor device to turn the motor on or off, respectively. IoT devices upload information to the cloud, which can be evaluated later. Users can tell the system to alert them if a specific threshold is met. A system for intelligent water management should allow for constant monitoring of water levels. Overflows and leaks in water systems can be spotted quickly by real-time monitoring. They need a constant data connection and a lot of juice to monitor in real time. Decisions can be made in real-time with the use of cloud computing. An increasing number of IoT devices are used in the water management system. Now that inexpensive sensors can be linked to the Internet of Things devices, we can more accurately assess water quality.


Motor
Sensor data
Controlled motor device
Leakage hole
Water storage tank
Cloud
Water pump unit
GSM/ GPRS module
Hybrid application
Motor with relay
Smart level device
Reserved tank