WATER MONITORING SYSTEM REPORT

GSSOC 2020

Overview:

Water is a crucial natural resource without which, there would be no life on Earth. However, 97 percent of water is in the oceans which are salty and cannot be used for drinking purpose. Of the remaining 2.5 percent that is fresh water, most is frozen in glaciers and polar ice caps. As a result, only less than 1 percent of the Earth's water is available for drinking. Moreover, the Earth's water supply is fixed. This is why it is important to conserve and sustainably use it for the health of human society, life support systems and maintaining ecosystem services of the planet earth.

With IoT it is possible to build simple automation devices that can help reduce the wastage of natural resources. Cities with less access to potable water are struggling either due to low supply or wastage due to overflow. Conserving water has now become a technology use case as there is a need to act on it. Web based Water monitoring system can be used to prevent wastage of water.

Thus, our major objectives for this project are:

- To reduce the wastage of water across the city.
- To provide better water supply to the people

REQUIREMENTS

Water Monitoring System is an IOT based Liquid Level Monitoring system that has mechanisms to keep the user alerted in case of liquid overflow or when tank depletes.

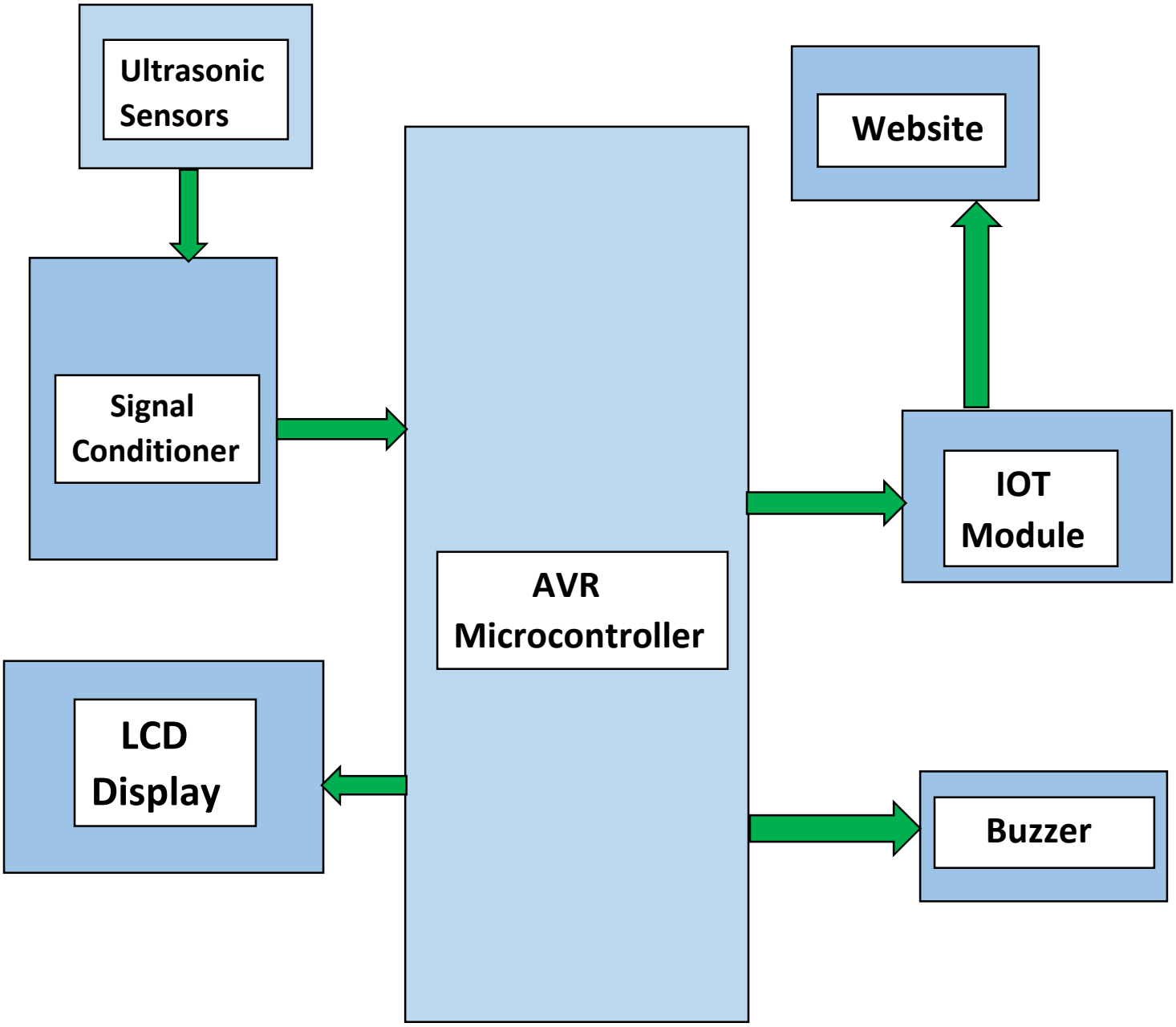
Components required for this project are as follows:

- Ultrasonic Sensor
- AVR family microcontroller
- LCD Screen
- Wifi modem
- A buzzer
- 12V transformer

Implementation:

- The water tanks can be fixed with ultrasonic sensors that is placed over the container.
- The AVR Microcontroller will read the level of water from the sensor and send it using IOT, over a webpage
- The status of the system could be monitored and displayed in percentage on a LCD screen.
- This project is operated from a 12 volt transformer.
- Additionally, we have used colors to depict various scenarios with respect to the amount of liquid in the tanks or containers on the website.
- The buzzer buzzes when the limit exceeds the permissible quantity of fill or has reached below a minimum level.

ARCHITECTURE:



FUTURE ASPECTS:

- We can have leakage detection installed
- We can have some tanks that are specifically assigned for storage purpose only
- We can collect and store data about capacity of water at various locations and if certain location makes a request, based on the availability of water in tanks we can determine what percentage of water can be supplied from each tank to the required locations.
- If there is any tank that is recorded to have wasted more than certain amount of water on a monthly basis, we can notify the governmental institution handling their supply of water about it to take necessary steps.
- This project can be extended to get the liquid level details in form of a message on any mobile phone so the user can be alerted on time about overflow of liquid.

CONCLUSION:

This website provides a computerized version of water monitoring system. Through this project, one can digitally monitor the status of water tanks and accordingly manage them so that we can contribute towards saving water.