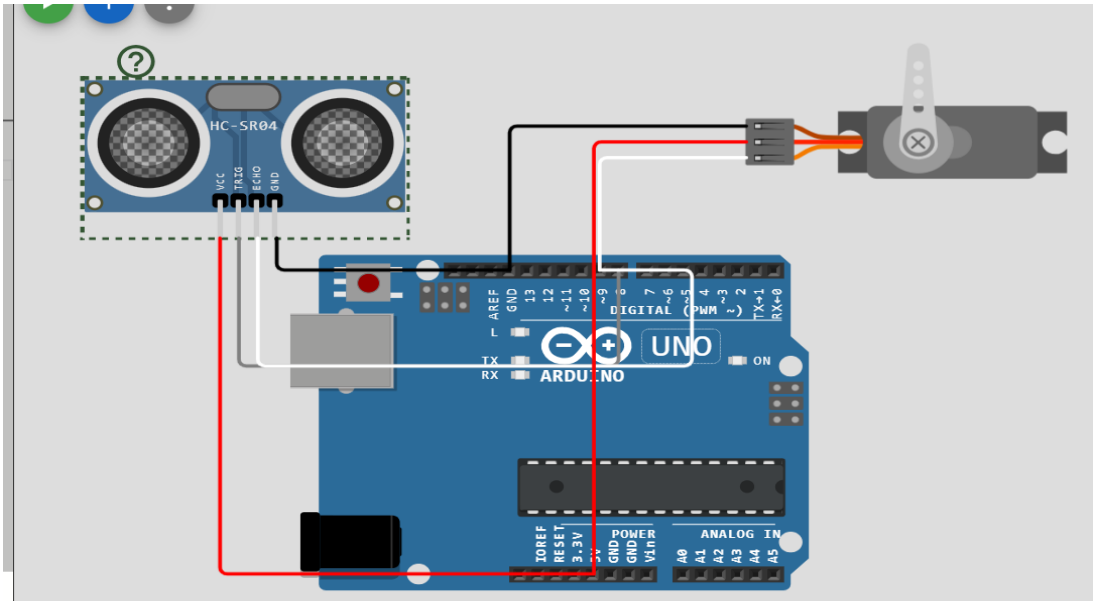
SMART WATER MANAGEMENT



Design for basic connections

A smart water management system with IoT-based water overflow control is a valuable project that can help conserve water resources and prevent water wastage. Here's an overview of how you can approach such a project.

Connections:

Ultrasonic sensor:

1) VCC terminal connected to the 5v of Arduino

2)TIGR terminal connected to the input pin 8 of a Arduino.

3)ECHO terminal connected to the input pin 9 of a Arduino.

4)GND terminal is connected to the GND pin of a Arduino.

Servo motor:

1) Brown terminal is connected to the GND of Arduino.
2) Red terminal is connected to the 5v of Arduino.
3) Orange terminal is connected to the input terminal of Arduino.

Steps:

Sensor Deployment:

Install water level sensors in the tanks or reservoirs you want to monitor. These sensors can be ultrasonic, capacitive, or float-based, depending on your requirements and budget.

Microcontroller Setup:

Connect the sensors to your chosen microcontroller (e.g., Arduino) to read water level data.

Connectivity:

Establish connectivity for your IoT devices. You can use Wi-Fi, Bluetooth, LoRa, or GSM/GPRS, depending on the location and range of your devices.

Data Collection:

Set up a data collection system that reads data from sensors at regular intervals and transmits it to a central server or cloud platform.

Data Storage and Processing:

Store the collected data in a database and process it to determine water levels and any potential overflow situations. You can use cloud platforms like AWS, Azure, or IoT-specific platforms like Thingspeak or Adafruit IO.

Overflow Detection and Control Logic:

Implement logic to detect potential overflow situations based on the water level data. When an overflow is imminent, send a signal to the actuator to close the valve and stop water inflow.

Alerts and Notifications:

Set up alerts and notifications to inform users about water level changes and overflow situations via email, SMS, or a mobile app.

Remote Control:

Implement a control mechanism that allows users to remotely open or close valves based on their preferences through the user interface.

User Interface Development:

Create a web or mobile app that provides a dashboard for users to monitor water levels and control the system remotely.

Testing and Calibration:

Thoroughly test the system to ensure accurate sensor readings and reliable control of water flow.

Maintenance:

Regularly maintain and calibrate sensors and actuators to ensure the system's accuracy and reliability.

Data Analytics:

Optionally, you can use historical data to perform analytics and gain insights into water consumption patterns, which can further optimize water management.

The addition of sensor is used to controll the over flow of water and also Reduse of the stress of the users.

Remember to consider power management for IoT devices and data security to protect the system from unauthorized access.

This project can help conserve water resources and prevent water wastage, making it a valuable contribution to smart water management efforts.