 <b>Marwadi University</b> Marwadi Chandarana Group	<b>Marwadi University</b> <b>Faculty of Engineering and Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Human Centered Design (01CT0617)</b>	<b>Aim: Project Planning with Timeline (CO4 - PO9, PO10, PO11)</b>	
<b>Task - 4</b>	<b>Date: 12/3/2025</b>	<b>Enrollment No: 92200133028, 92310133011</b>

# IoT Water Tank Level Monitoring & Controlling

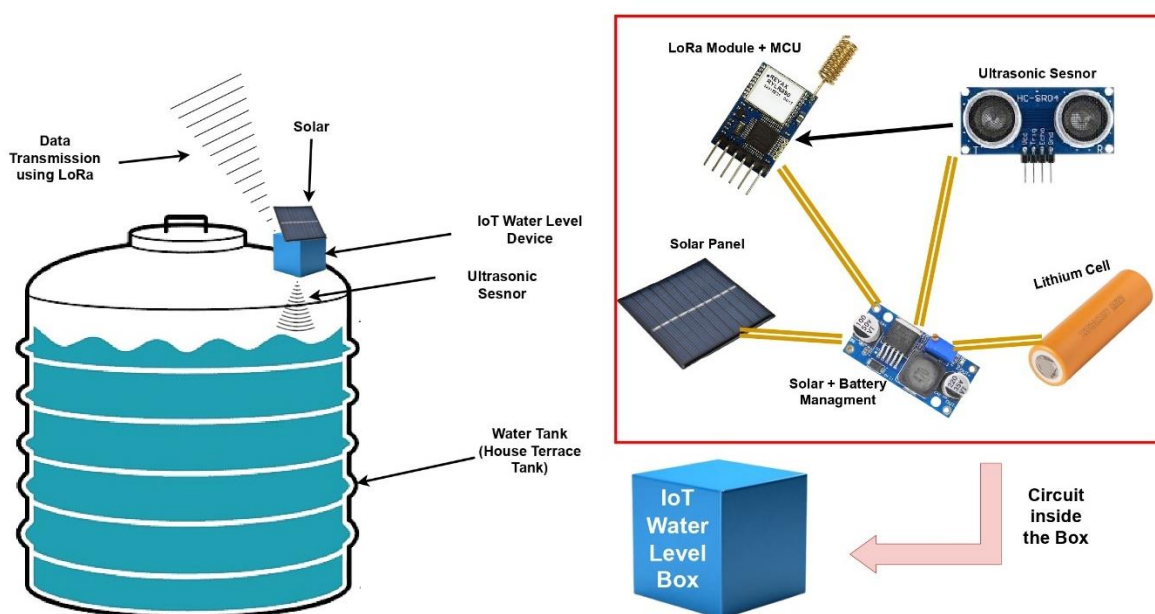
## Prototype Plan

### 1. Terrace Water Tank Level Device

Terrace water tank where the IoT water level monitoring system is installed. The device helps in continuously tracking water levels to prevent overflow or shortages.

Materials Used: Ultrasonic sensor HC-SR04, LoRa Ra01, MCU STM32, 3.7 Lithium Cell, 6V Solar Panel, TP4056 Charging Module, Waterproof Plastic Case

Deadline: 23 March 2025




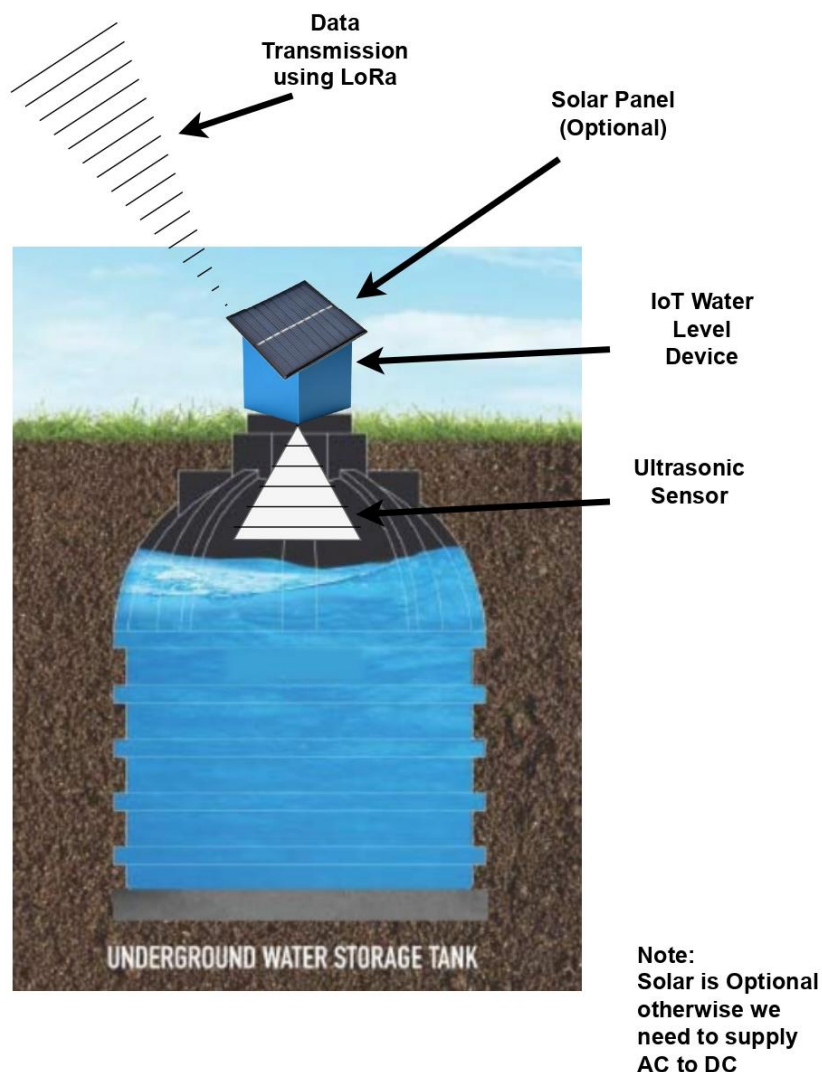
### 2. Underground Water Tank Level Device

Underground water tank where the IoT water level monitoring system is installed. The device helps in continuously tracking water levels to prevent overflow or shortages.

Materials Used: Ultrasonic sensor HC-SR04, LoRa Ra01, MCU STM32, 3.7 Lithium Cell, 6V Solar Panel, TP4056 Charging Module, Waterproof Plastic Case

Deadline: 30 March 2025

 <b>Marwadi University</b> Marwadi Chandarana Group	<b>Marwadi University</b> <b>Faculty of Engineering and Technology</b> <b>Department of Information and Communication Technology</b>	
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<b>Task - 4</b>	<b>Date: 12/3/2025</b>	<b>Enrollment No: 92200133028, 92310133011</b>




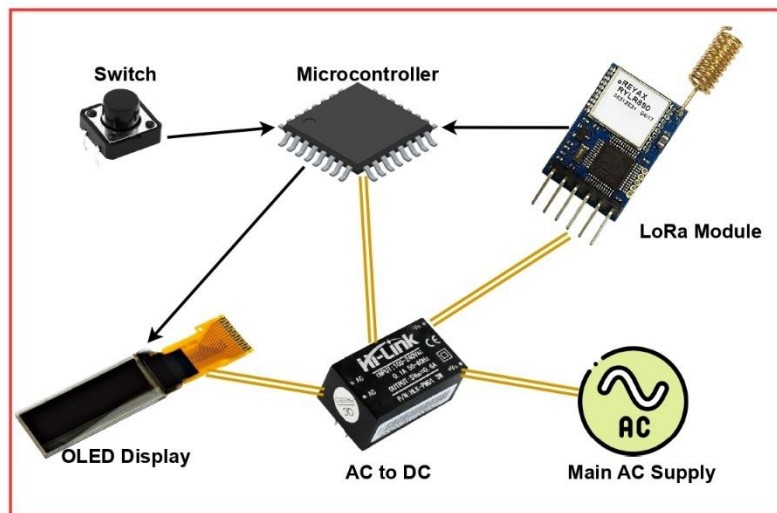
### 3. User Water level Display Device

A dedicated display device shows real-time water levels for both underground and terrace tanks. Additionally, the user can set thresholds to determine when the water pump should start or stop. It receives data via LoRa and operates on an AC power supply for stable functionality.

Materials Used: LoRa Ra01, AC to DC, Plastic Case, 4 Push button, MCU STM32, OLED Display

Deadline: 6 April 2025

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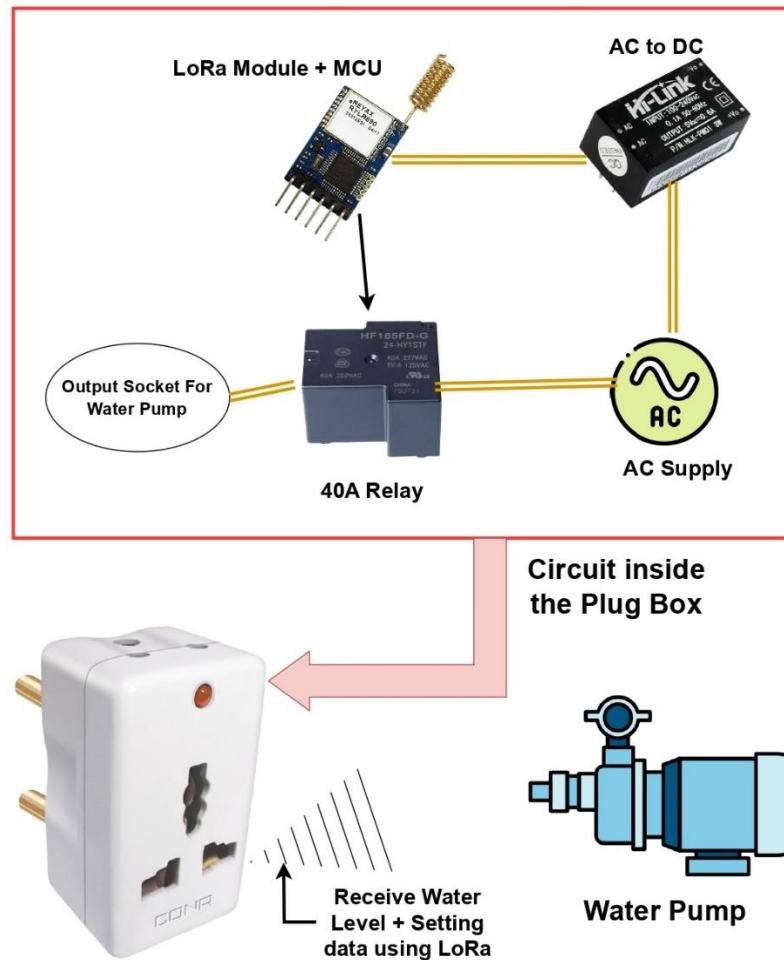
#### 4. Water Pump Control Device

The pump control device receives water level data and user settings via LoRa. It automatically turns the pump on or off based on predefined thresholds, ensuring optimal water usage.

Materials Used: LoRa Ra01, AC to DC, Plastic Case, LED, MCU STM32, 30A Relay Module

Deadline: 6 April 2025

 <b>Marwadi University</b> Marwadi Chandarana Group	<b>Marwadi University</b> <b>Faculty of Engineering and Technology</b> <b>Department of Information and Communication Technology</b>	
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## Testing Plan

### 1. Testing Process

Performance Testing: The system will be installed for testing purposes at our home. Stress and endurance tests will be conducted to assess the confidentiality, durability and reliability of the IoT water level monitoring system. Based on the results, necessary upgrades will be made to enhance performance.

User Experience Testing: The system will be installed in different users' homes to assess its functionality and ease of use. Users will interact with the device to monitor water levels, set thresholds, and control the pump. Feedback will be gathered on display clarity, response time, wireless confidentiality and overall user experience.

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## 2. Target Users for Testing

- Homeowners with terrace and underground water tanks.
- College Professor
- Rajkot Municipal Corporation
- Friends and Relatives
- User who has wired water level control technology

## 3. Testing Timeline

- System Deployment: 8 April 2025
- User Observations and Data Collection: 20 April 2025
- Analysis and System Refinement: 25 April 2025

## Timeline & Milestone Plan

Sr. no.	Task	Deadline
1.	Terrace Water Level Device	23 March 2025
2.	Underground Water Level Device	30 March 2025
3.	User Display Device	6 April 2025
4.	Water Pump Control Device	6 April 2025
5.	Testing	7 April 2025
6.	System Deployment	8 April 2025
7.	Feedback and Refinement	20 April 2025
8.	Final Product	25 April 2025

