ABOUT US

MICROORGASNISM

We are ***MicroOrganisms***, a group of *Computer Engineering* students passionate about using technology to solve everyday problems. Our project, the Water Bottle/Hydration Reminder, was designed to help people stay healthy by reminding them to drink water regularly. With our technical skills and teamwork, we created a smart and practical solution to promote better hydration habits.

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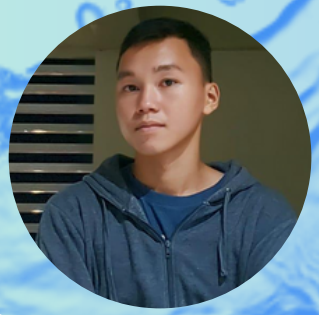

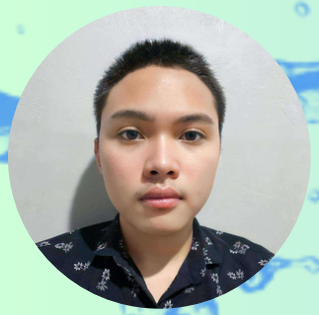

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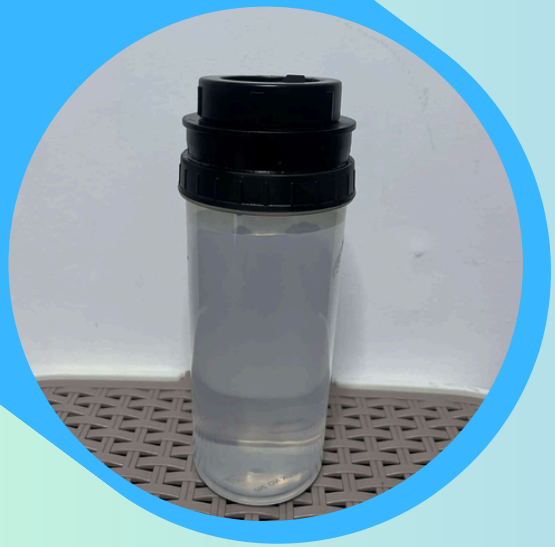
ThirstAid!

ESP32 BASED INTERACTIVE WATER BOTTLE WITH ALERT SYSTEM

ThirstAid!

This project addresses the common issue of dehydration, particularly among students, by developing an ESP32-based water bottle that uses an ESP32-C3 microcontroller and a waterproof ultrasonic sensor to track water intake. The system sends real-time reminders and syncs data to a mobile application, encouraging users to stay hydrated. This IoT-based solution promotes wellness and supports sustainable practices by reducing plastic use and automating hydration tracking.



Features

- Real-Time Water Level Detection
  - Uses a waterproof ultrasonic sensor to measure how much water is left.
- Hydration Alert System
  - Notifies the user when it's time to drink water.
- Mobile Application Sync
  - Displays water consumption data and notification.

Architecture

- ESP32-C3 Microcontroller: Main controller for data processing and Firebase communication.
- Ultrasonic Sensor (A02YYUW): Accurately measures water level inside the bottle.
- Power Supply: Rechargeable battery ensures portability.
- Mobile App: Receives and logs hydration data in real-time.

Results

The system accurately detected water levels with a ±1 cm margin of error, ensuring reliable hydration tracking. Real-time data transmission via Firebase was smooth and responsive. The ultrasonic sensor performed well in the bottle's humid conditions, confirming its reliability.

Conlusion

The ESP32-Based Interactive Water Bottle encourages hydration with real-time monitoring and alerts. It replaces manual tracking, works reliably, and showcases IoT's role in health. It also supports SDGs 3, 4, and 9.

Recommendation

To improve user experience, the bottle should maintain hot or cold water temperatures for long periods. Adding a UV-C LED for sterilization ensures hygiene and prevents bacterial growth. A leak detection feature using moisture or pressure sensors can also alert users to potential leaks, enhancing safety and durability.