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Abstract Submission

Date of Submission : 05/12/2024

TEAM DETAILS

Team Name: Orton.ai

College Course: B.Tech

Specialization: Data Science

Member 1: Priyansh Neel

ABSTRACT

<< 1-2 pager, within 600 words >>

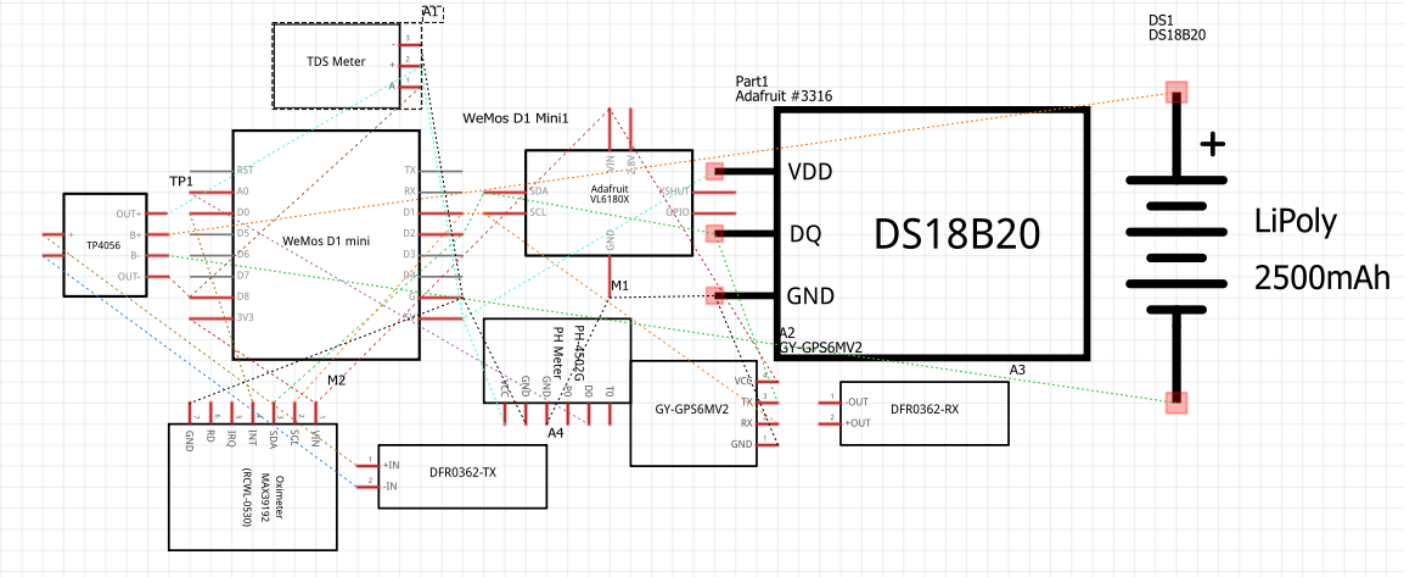
1. **Problem statement to be attempted**: Problem Statement 3- Smart Fluid Container(1ltr Water Bottle).
2. **Key area trying to solve within the problem statement:** There I'm trying to solve are:
   1) Fluid Monitoring and Quality Assurance
   2) Health and Wellness Tracking
   3) Convenience and User Experience

A) **Fluid Monitoring and Quality Assurance**: Users often consume water without knowing its quality (e.g., contamination, inappropriate pH, or TDS levels). Including sensors like TDS, pH, temperature, turbidity, and water level provides real-time monitoring of fluid quality. Users get immediate feedback, ensuring safe and healthy hydration.

B) **Health and Wellness Tracking:** Maintaining hydration and monitoring personal health metrics like blood oxygen levels are critical but often overlooked. So the idea is to integrate oximeter which adds an extra layer of insight by tracking the user's oxygen levels, providing data on overall health, hydration needs, and possibly stress levels.

C) **Convenience and User Experience:** Smart bottles which are available in the market don't offer dynamic insights or interact with users, limiting their functionality plus the temperature showing feature shows inaccurate data. So by embedding smart technology, the water bottle becomes an intuitive and proactive health tool, offering actionable insights and personalized advice.The Smart Fluid Container includes a **GPS module** connected to a mobile app with a **VR map** that guides users to their misplaced bottle using directional arrows. It also features **wireless charging**, allowing users to recharge effortlessly by placing it on a charging mat. These additions ensure convenience and ease of use.

3. Proposed Solution:



This circuit consists of a main microcontroller with wireless communication, connected with TDS, Temperature, pH, oximeter, GPS, laser distance sensors, which is powered by 2500 mAh LiPo battery with wireless charging. All these would be fitted in a 1ltr bottle made up of Volextra material but from inside pure copper.

4.Cost of implementation and making: The cost of implementing the Smart Fluid Container will vary based on component quality, quantity, and sourcing. Key expenses include sensors (TDS, pH, turbidity, temperature, oximeter), a GPS module, wireless charging components, a microcontroller, and a LiPo battery. All these components plus combine making cost between **Rs.2000-4500.**

5. Describe the novelty of your solution: The novelty of the Smart Fluid Container lies in its seamless integration of fluid quality monitoring and personal health tracking, transforming a simple water bottle into a comprehensive health companion. Unlike typical smart bottles that only track water intake, this solution uses sensors to monitor TDS, pH, temperature, and turbidity for real-time water quality insights, while an oximeter provides valuable health data.