In-21-S2-E91190

ENGINEERING DESIGN PROJECT PROPOSAL

SMART WATER BOTTLE

Are you planning this as an add on or complete new product (including the bottle)?

Is this a problem that is so annoying people can live without?

Where do you plan to setup the ultrasonic sensor?

Does someone need to drink water only from this bottle? How about other types of liquid?

Tronic Geeks

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Introduction

When we began to think of ideas for a project, we came across a problem everyone has, which is forgetting to drink enough water. The importance of drinking enough water is often forgotten by us. Specially in a hot country like Sri Lanka it's vital to stay hydrated. This can help boost human metabolism, improve brain functioning and make the skin healthier. In our busy lives most of us forget to drink enough water and as students we experience this same issue. As a solution to this problem, we thought of making a smart water bottle to track our water drinking habits through our smartphone.

Project Description and Methodology

The objective of this smart water bottle is to track water drinking habits of a person and send push notifications to the smartphone of that person to remind whenever that person has not consumed water in a particular time period. The smartphone app will show him/her the amount of water consumed and amount of water the person is supposed to take in a day. An ultrasonic sensor will measure the volume of water the owner consumes when he/she drinks using the smart water bottle. The data is sent wirelessly to an online data base and then sent to the smartphone that needs to be connected to the smart water bottle.
The smartphone app will send push notifications to the owner according to the user consumption logs in the online database. A microcontroller is used to get data from the sensor and feed to the database. A lithium polymer battery and a charger module are used to give power to the microcontroller. The battery level of the water bottle will be displayed using an OLED display.

Objectives

1.Read water level using an ultrasonic sensor.
2.View water level and battery level from LED screen.
3.Send data to an online data base via a micro controller.
4.Develop a mobile application.(Send notifications)

Scope of work and expected outcomes

This smart water bottle will help some target users such as students, sportspersons, diligent employees, etc. who lead a busy lifestyle to keep a track on their daily intake and will ensure that the user consumes the required daily water consumption amount which will cause to reduce major health related issues.

Resources

1.A microcontroller
2.OLED display
3.Ultrasonic sensor
4.Lithium polymer battery
5.Lithium polymer battery charger
6.Voltage regulator
7.Water bottle
8.Firebase as the database component

Timeline

Week 1-2 : Conducting research and choosing the suitable resuorces and software after making a specified plan.
Week 3 : Do the basic design and structure
Week 4 : Make a prototype of the device
Week 5-6 : Do advance modifications and test the prototype
Week 7-8 : Do refinements and finalise the device and prepare the presentation