Title: **Body Fat Percentage Estimation Using Microcontrollers**

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Objectives

1. To measure the height of a person using ultrasonic sensor.
2. To measure the body circumference measurements of a person using a wireless device.
3. To calculate or estimate the body fat percentage of a person based on the measured parameters and navy seal formula.

Discussion

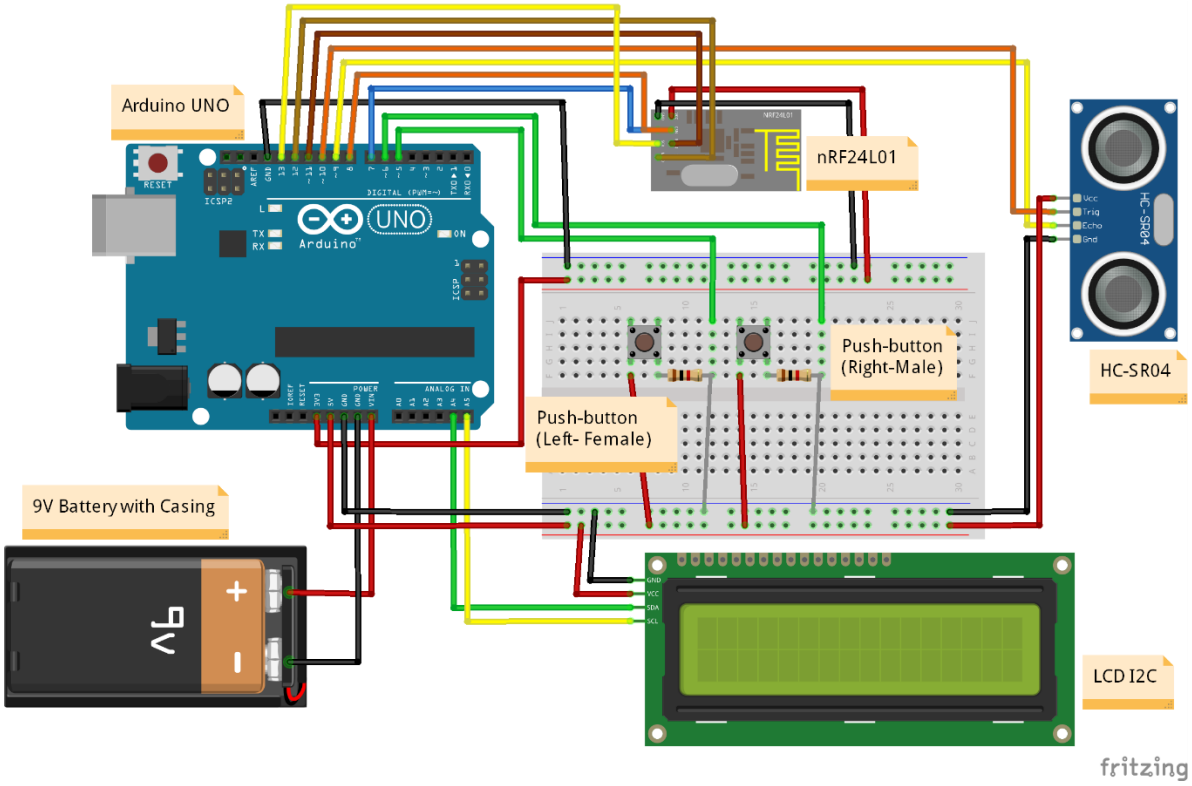
Being able to estimate a person's body fat percentage can be an advantage in monitoring one's health and body composition. Especially if the device to be implemented will not be costly and can be used outside of clinic or hospital facilities. This project explores the development of a body fat percentage calculating system through the use of wireless devices along with an encoder and a sensor powered by batteries and controlled through Arduino microcontrollers.

List of materials:

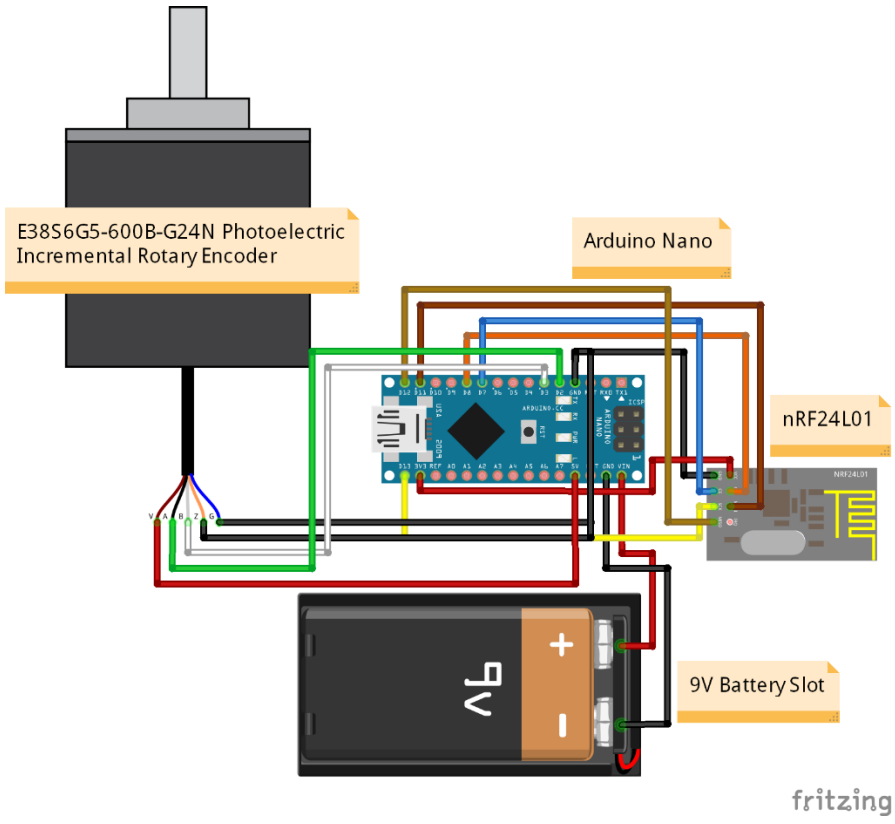
- 2 pc 9V Battery with Casing
- 1 pc Arduino UNO
- 1 pc Arduino Nano
- 2 pcs Button
- 1 pc Ultrasonic Sensor
- 1 pc Rotary Encoder
- 2 pcs Transceiver Module
- 1 pc LCD
- Resistors
- Jumper Wires

Circuit Diagrams:

Main Microcontroller



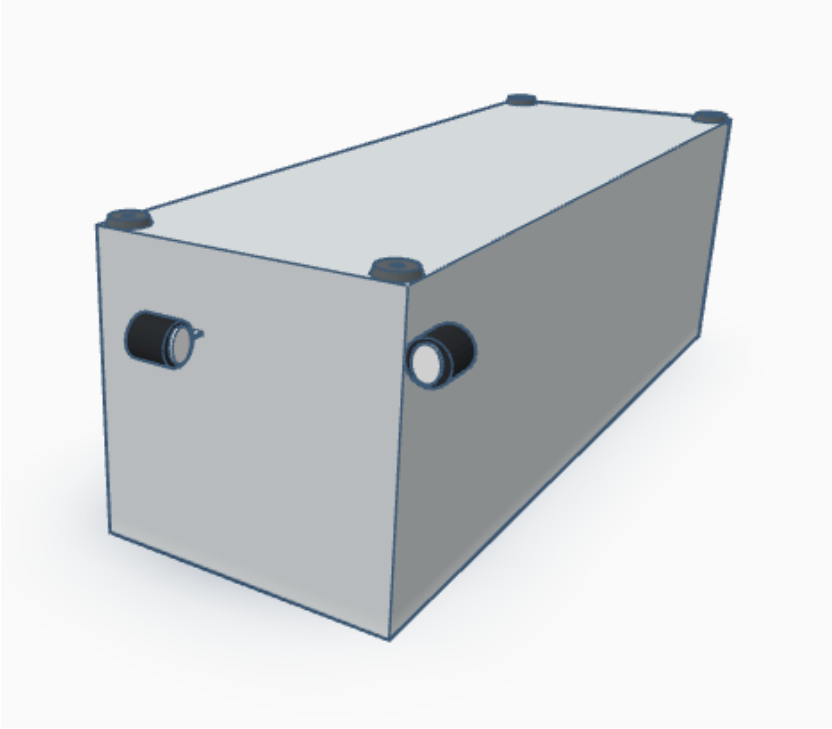
Secondary Microcontroller



3D Prototype:

Main Microcontroller Casing & Prototype Body:

Secondary Microcontroller Casing:



Sample Pictures of Actual Prototype: