SMART WALKING STICK FOR VISUALLY IMPAIRED PEOPLE

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Abstract

The blind stick is an innovative device designed to improve navigation for visually impaired individuals. It uses an ultrasonic sensor to detect obstacles, and if an obstacle is close, a buzzer sounds. Additionally, the MPU6050 sensor measures the angle relative to the ground, and if it is less than 30 degrees, the SIM900 module sends a message to a designated contact. This advanced technology enhances safety and independence for users.
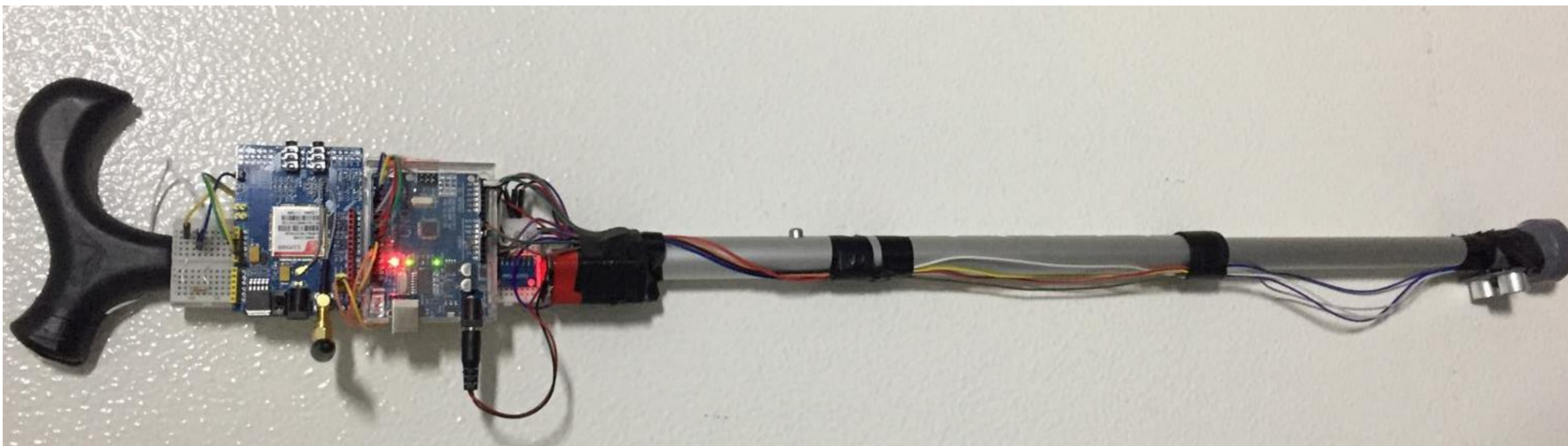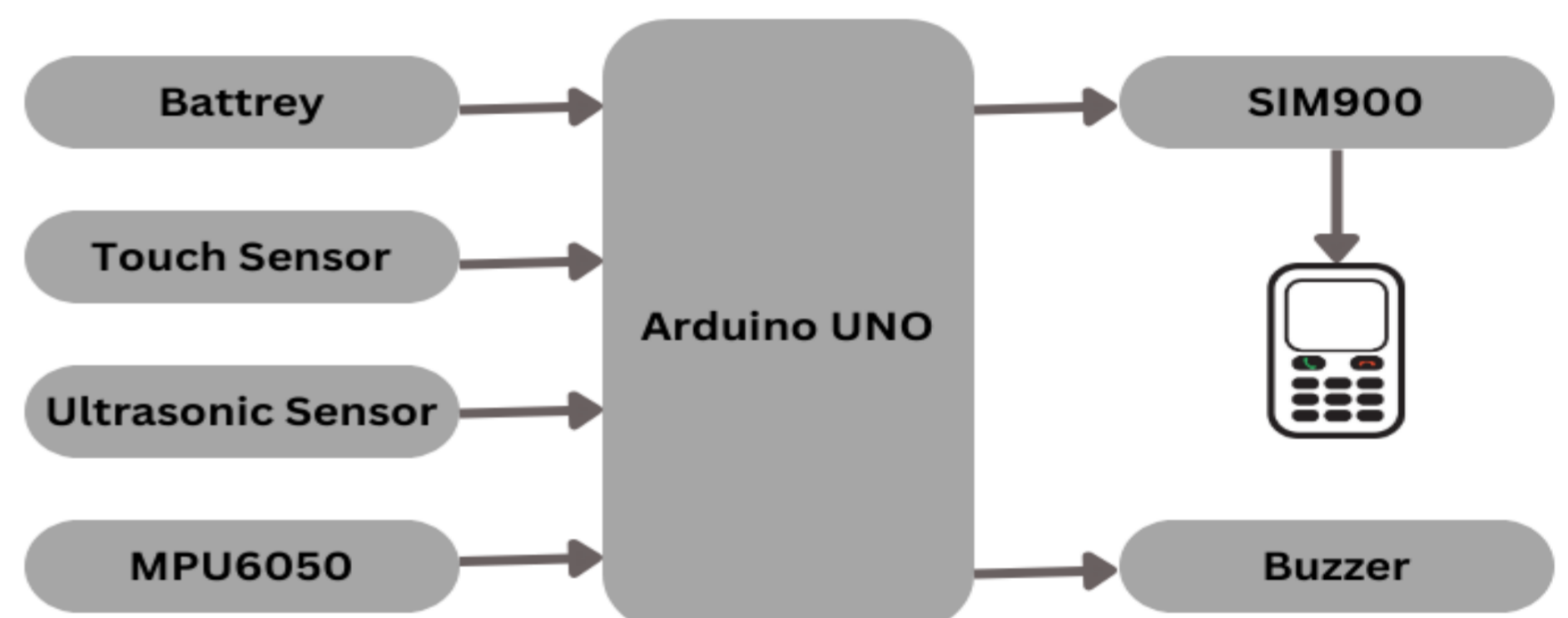
Main Components

Arduino UNO, SIM900, MPU6050 Sensor, Ultrasonic Sensor, Buzzers, battery, Stick.
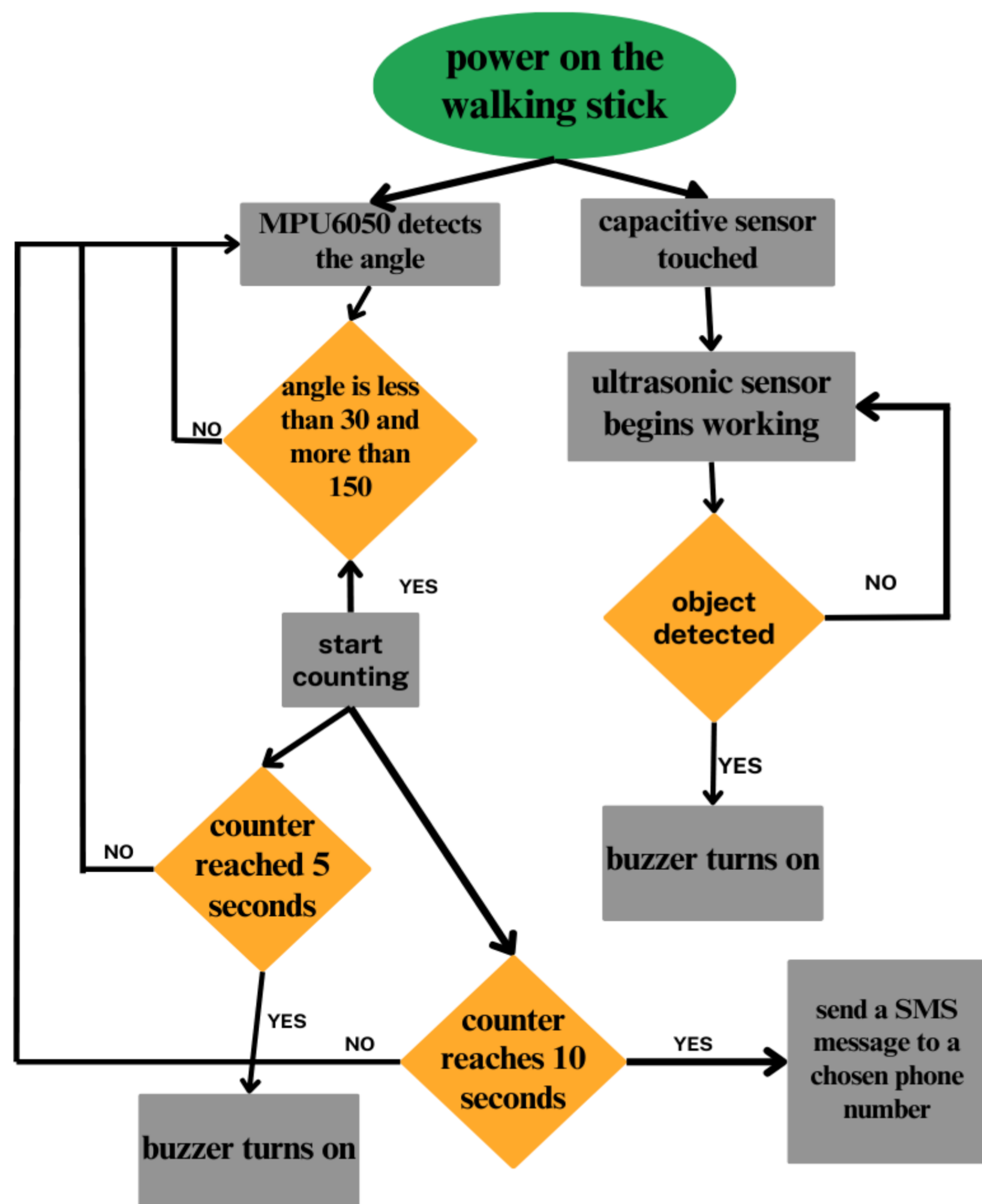
Flow chart

Block diagram

Conclusion

This project aims to improve mobility for visually impaired individuals and notify a contact if the user is in danger. The system allows users to detect obstacles and send alerts to a specific mobile phone number in emergency situations. The prototype of the smart cane has been successfully built and tested, demonstrating its effectiveness in enhancing safety and independence.

References:

1- https://lastminuteengineers.com/sim900-gsm-shield-arduino-tutorial/
   'last minute engineers' How we Send Receive SMS & Call with SIM900 GSM Shield & Arduino

2- https://docs.arduino.cc/learn/starting-guide/getting-started-arduino/
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3- https://arduino.stackexchange.com/questions/9483/how-to-communicate-the-arduino-board-with-sim900
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4- https://www.instructables.com/MPU6050-Setup-and-Calibration-Guide/
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