# TIME&TEMPERATURE CLOCK

**Armura Tang**

Overview/Goal/Purpose

Design a square clock with two functions, can switch functions by turning different sides down. One function is the clock, and the other is the thermometer. The small clock can send the real-time temperature to the phone when click the button. The The screen will light up when there's someone come close to less than 1m.
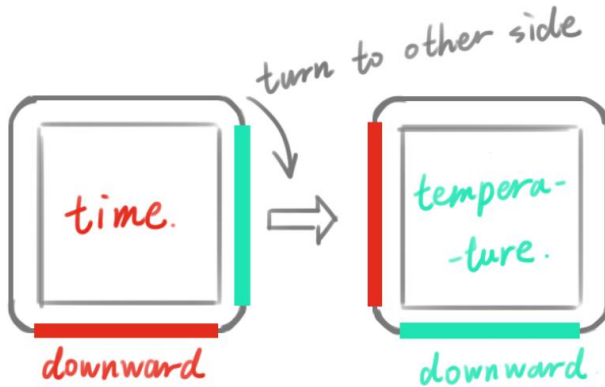
Peripherals & protocols

    8x8 LED Matrix

    Ultrasonic sensor

    TC-74 temperature sensor

        -I2C

    Bluetooth receiver

        -UART

    Membrane switch: key matrix

    Buzzer

        -PWM

    MMA7361

        -ADC

Block diagram
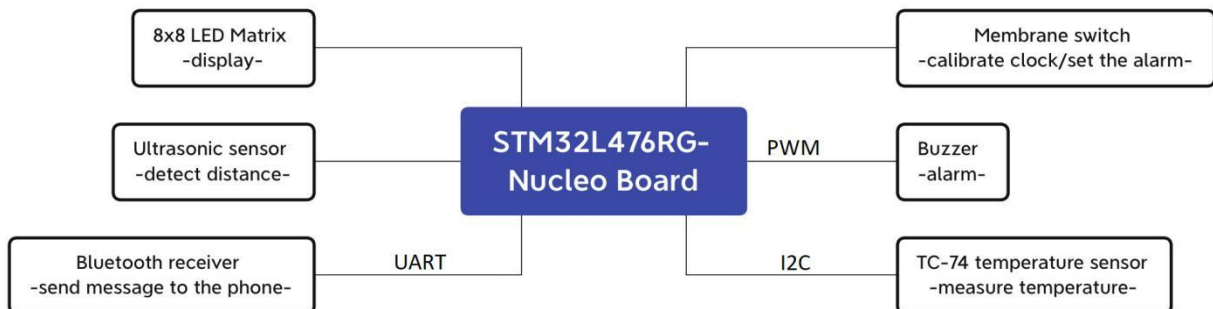
Responsibility list for everyone in group

Armura: all

Software structure

Before start: Calibrate the clock according to the real time

Infinite loop

Check if there's something in front of the clock within 1m

- Check whether the position has been changed
- Condition 1: clock
    - set the alarm after click the button 1 (interrupt)
    - press button 1 to stop when the alarm goes off (interrupt)
    - reset the real time after double click the button 1 (interrupt)
- Condition 2: thermometer
- Click the botton 2: Send the real-time temperature(both the time and the thermometer) to the phone (interrupt)

The alarm goes off whether the screen is lit or not

Website:

https://sites.google.com/view/ece153bfinal-armura/home