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/**
 * This program read the distance data from TFmini lidar sensor and
 * print the read data and controls LED depending on the measured distance.
 */
#include <stdint.h>
#include <stdio.h>

#include "eecs388_lib.h"

int main()
{
    gpio_mode(RED_LED, OUTPUT);
    gpio_mode(GREEN_LED, OUTPUT);
    ser_setup();

    ser_printline("Setup completed.\n");

    /*
        - LIDAR distance data is 16 bits.
    */
    uint16_t dist = 0;

    while (1) {
        /*
            Task 1:
            - read a data frame from the TFmini sensor

            - from Table 6, we know each LIDAR measurement sends 9 bytes
            - the function `ser_read()` can process 1 byte

            - This if statement will read the first two bytes of a valid data frame
        */
        if ('Y' == ser_read() && 'Y' == ser_read()) {
            dist = ser_read();
            dist << 8;
            dist = dist + ser_read();

            if (dist < 50) {
                gpio_write(GREEN_LED, OFF);
                gpio_write(RED_LED, ON);
            }

            else {
                gpio_write(RED_LED, OFF);
                gpio_write(GREEN_LED, ON);
            }

            printf("%u\n", (unsigned int)dist);
        /*
            Task 2:
            - turn on the red LED if the distance is less than 50cm.
            - otherwise turn on the green LED

            - print the measured value to the console
            - You can use printf or ser_printline or ser_write

            - Helpful guide for printing with printf()
            - https://en.cppreference.com/w/cpp/io/c/fprintf
        */
```

```
        }
    }
}
```