Assignment -4

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```
#include <stdio.h>
#include <stdbool.h>
#include <freertos/FreeRTOS.h>
#include <freertos/task.h>
#include <esp_err.h>
#include "ultrasonic.h"
#define ECHO_GPIO 12
#define TRIGGER_GPIO 13
#define MAX_DISTANCE_CM 500 // Maximum of 5 meters
void ultrasonic_test(void *pvParameters)
{
float distance;
ultrasonic_sensor_t sensor = {
.trigger_pin = TRIGGER_GPIO,
.echo_pin = ECHO_GPIO
};
ultrasonic_init(&sensor);
while (true) {
esp_err_t res = ultrasonic_measure(&sensor, MAX_DISTANCE_CM, &distance);
if (res == ESP_OK) {
printf("Distance: %0.04f m\n", distance);
} // Print error
else {
printf("Error %d: ", res);
switch (res) {
case ESP_ERR_ULTRASONIC_PING:
printf("Cannot ping (device is in invalid state)\n");
break;
case ESP_ERR_ULTRASONIC_PING_TIMEOUT:
printf("Ping timeout (no device found)\n");
break;
case ESP_ERR_ULTRASONIC_ECHO_TIMEOUT:
printf("Echo timeout (i.e. distance too big)\n");
break;
default:
printf("%s\n", esp_err_to_name(res));
}
```

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```
}
vTaskDelay(pdMS_TO_TICKS(500));
}
}
void app_main()
{
xTaskCreate(ultrasonic_test, "ultrasonic_test", configMINIMAL_STACK_SIZE * 3,
NULL, 5, NULL);
}
```