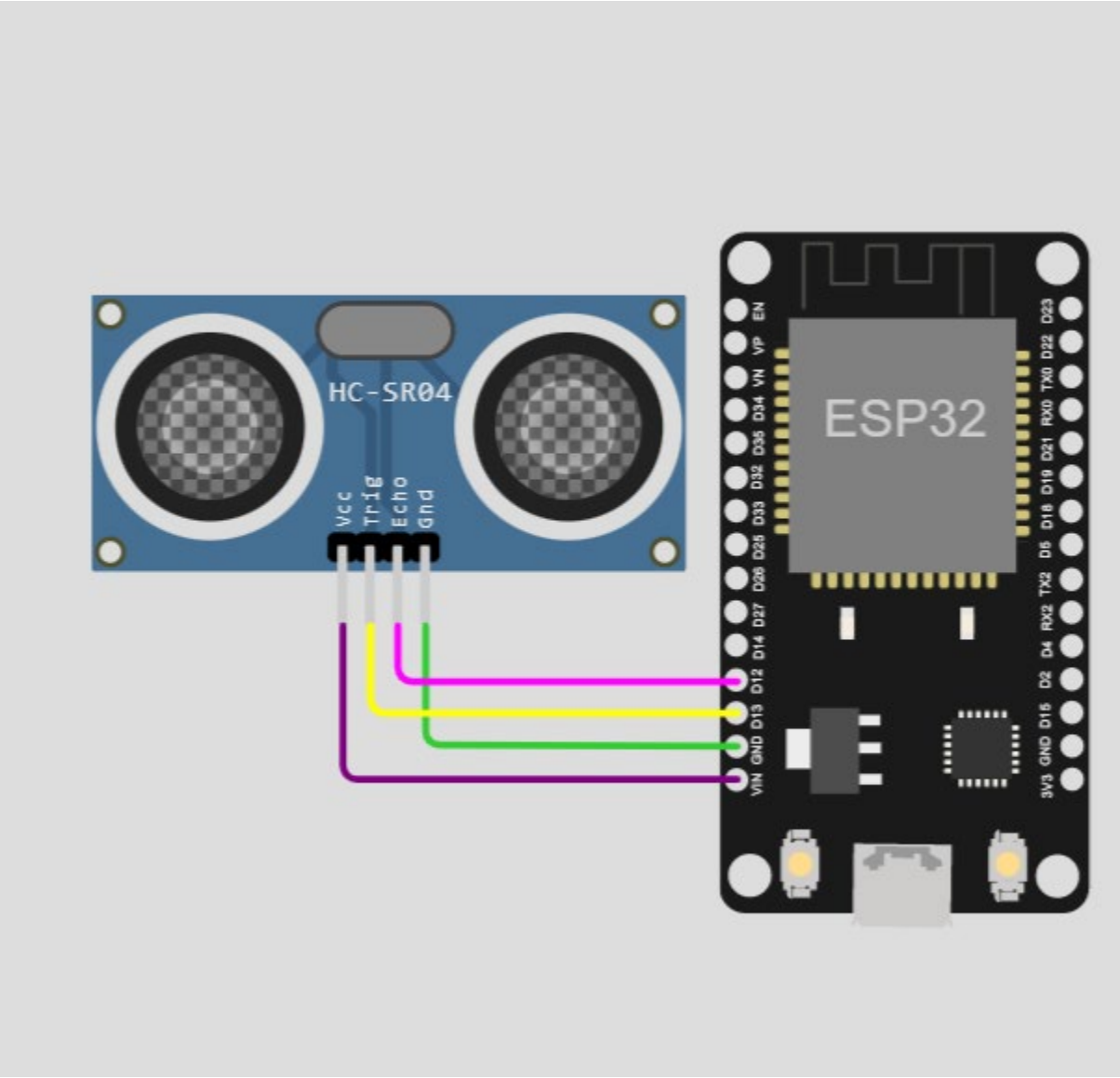
CODE:

```
#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


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=%0.05f m\n", distance);
        }
        else {
            printf("Error %d: ", res);
            switch (res) {
                case ESP_ERR_ULTRASONIC_PING:
                    printf("Cannot ping \n");
                    break;
                case ESP_ERR_ULTRASONIC_PING_TIMEOUT:
                    printf("Ping timeout\n");
                    break;
                case ESP_ERR_ULTRASONIC_ECHO_TIMEOUT:
                    printf("Echo timeout \n");
                    break;
                default:
                    printf("%s\n", esp_err_to_name(res));
```

```
            }
        }

        vTaskDelay(pdMS_TO_TICKS(500));
    }
}

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

CIRCUIT:



OUTPUT:

Distance=4.0564 m

Distance=1.1914 m