

```

from machine import Pin, time_pulse_us
from time import sleep_us, sleep

# Define the GPIO pin numbers for the trigger and echo pins
ECHO_PIN = 26
TRIGGER_PIN = 27

# Initialize trigger and echo pins
trigger = Pin(TRIGGER_PIN, Pin.OUT)
echo = Pin(ECHO_PIN, Pin.IN)

def measure_distance():
    # Ensure trigger is low initially
    trigger.low()
    sleep_us(2)

    # Send a 10 microsecond pulse to the trigger pin
    trigger.high()
    sleep_us(10)
    trigger.low()

    # Measure the duration of the echo pulse (in microseconds)
    pulse_duration = time_pulse_us(echo, Pin.high)

    # Calculate the distance (in centimeters) using the speed of sound (343
m/s)
    distance = pulse_duration * 0.0343 / 2
    return distance

def main():
    while True:
        # Measure the distance and print the value in centimeters
        distance = measure_distance()
        print("Distance: {:.2f} cm".format(distance))

        # Wait for 1 second before taking the next measurement
        sleep(1)

if __name__ == "__main__":
    main()

```

WOKWI

main.py

Diagram

Simulation

HC-SR04 with MicroPython Copy sudharsan

main.py

9 # Initialize trigger and echo pins

10 trigger = Pin(TRIGGER_PIN, Pin.OUT)

11 echo = Pin(ECHO_PIN, Pin.IN)

12

13 def measure_distance():

14 # Ensure trigger is low initially

15 trigger.low()

16 sleep_us(2)

17

18 # Send a 10 microsecond pulse to the trigger pin

19 trigger.high()

20 sleep_us(10)

21 trigger.low()

22

23 # Measure the duration of the echo pulse (in microseconds)

24 pulse_duration = time_pulse_us(echo, Pin.high)

25

26 # Calculate the distance (in centimeters) using the speed of sound (343 m/s)

27 distance = pulse_duration * 0.0343 / 2

28 return distance

29

30 def main():

31 while True:

32 distance = measure_distance()

33 print("Distance: {:.2f} cm".format(distance))

34

35

36 # Wait for 1 second before taking the next measurement

37 sleep(1)

38

39 if __name__ == "__main__":

40 main()

41

Distance: 20.17 cm

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33°C

Mostly cloudy

16:03

12/05/2023