

Code:

```
#if ARDUINO >= 100
    #include <Arduino.h>
#else
    #include <WProgram.h>
#endif

#include "Ultrasonic.h"

Ultrasonic::Ultrasonic(uint8_t trigPin, uint8_t echoPin, unsigned long
timeout) {
    trig = trigPin;
    echo = echoPin;
    threePins = trig == echo ? true : false;
    pinMode(trig, OUTPUT);
    pinMode(echo, INPUT);
    timeout = timeout;
}

unsigned int Ultrasonic::timing() {
    if (threePins)
        pinMode(trig, OUTPUT);

    digitalWrite(trig, LOW);
    delayMicroseconds(2);
    digitalWrite(trig, HIGH);
    delayMicroseconds(10);
    digitalWrite(trig, LOW);

    if (threePins)
        pinMode(trig, INPUT);

    previousMicros = micros();
    while(!digitalRead(echo) && (micros() - previousMicros) <= timeout); //
wait for the echo pin HIGH or timeout
    previousMicros = micros();
    while(digitalRead(echo) && (micros() - previousMicros) <= timeout); //
wait for the echo pin LOW or timeout

    return micros() - previousMicros; // duration
}

unsigned int Ultrasonic::read(uint8_t und) {
    return timing() / und / 2;
}

unsigned int Ultrasonic::distanceRead(uint8_t und) {
    return read(und);
}
```