

VSB Engineering College, Karur-639111

Department of Electronics and Communication Engineering

IoT Assignment

TOPIC : Assignment on temperature and humidity sensing and alarm

DOMAIN NAME : Internet Of Things

NAME: Athena S

MENTOR NAME: Ms. K. Sharmela

Coding:

```
const int TRIG_PIN = 7;
const int ECHO_PIN = 8;
const unsigned int MAX_DIST = 23200;

void setup() {

  pinMode(TRIG_PIN, OUTPUT);
  digitalWrite(TRIG_PIN, LOW);

  pinMode(ECHO_PIN, INPUT);

  Serial.begin(9600);
}

void loop() {

  unsigned long t1;
```

```
unsigned long t2;

unsigned long pulse_width;

float cm;

float inches;


digitalWrite(TRIG_PIN, HIGH);

delayMicroseconds(10);

digitalWrite(TRIG_PIN, LOW);


while ( digitalRead(ECHO_PIN) == 0);


t1 = micros();
while ( digitalRead(ECHO_PIN) == 1);
t2 = micros();
pulse_width = t2 - t1;


cm = pulse_width / 58.0;
inches = pulse_width / 148.0;


If (pulse_width > MAX_DIST ) {
    Serial.println("Out of range");
} else {
    Serial.print(cm);
    Serial.println(" cm ");
}


// Wait at least 60ms before next measurement
delay(60);
}
```

RESULT:

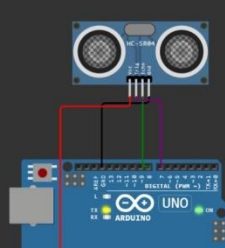
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hc-sr04.ino • diagram.json Library Manager

```
3 const int ECHO_PIN = 8;
4 const unsigned int MAX_DIST = 23200;
5
6 void setup() {
7
8   pinMode(TRIG_PIN, OUTPUT);
9   digitalWrite(TRIG_PIN, LOW);
10
11   pinMode(ECHO_PIN, INPUT);
12   Serial.begin(9600);
13 }
14
15 void loop() {
16
17   unsigned long t1;
18   unsigned long t2;
19   unsigned long pulse_width;
20   float cm;
21   float inches;
22
23   digitalWrite(TRIG_PIN, HIGH);
24   delayMicroseconds(10);
25   digitalWrite(TRIG_PIN, LOW);
26
27   while ( digitalRead(ECHO_PIN) == 0 );
28
29   t1 = micros();
30   while ( digitalRead(ECHO_PIN) == 1);
31   t2 = micros();
32   pulse_width = t2 - t1;
33
34   cm = pulse_width / 58.0;
35 }
```

Simulation

00:50.063 99%



88.21 cm
88.21 cm
88.28 cm
88.28 cm
88.28 cm
88.21 cm
88.21 cm

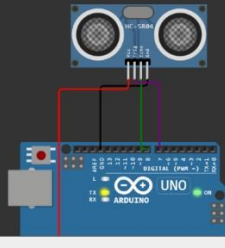
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23   digitalWrite(TRIG_PIN, HIGH);
24   delayMicroseconds(10);
25   digitalWrite(TRIG_PIN, LOW);
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27   while ( digitalRead(ECHO_PIN) == 0 );
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29   t1 = micros();
30   while ( digitalRead(ECHO_PIN) == 1);
31   t2 = micros();
32   pulse_width = t2 - t1;
33
34   cm = pulse_width / 58.0;
35 }
```

Simulation

00:36.763 100%



131.79 cm
131.86 cm
131.86 cm
131.79 cm
131.86 cm
131.86 cm
131.93 cm