

Assignment-4

Write code and connections in wokwi for ultra sonic sensor. When ever distance is less than 100 cm send "alert" to ibm cloud and display in device recent events

Date	22-10-2022
Team ID	PNT2022TMID02550
Project Name	Project: Smart Waste management System for Metropolitan Cities
Maximum Marks	2 Marks

CODE:

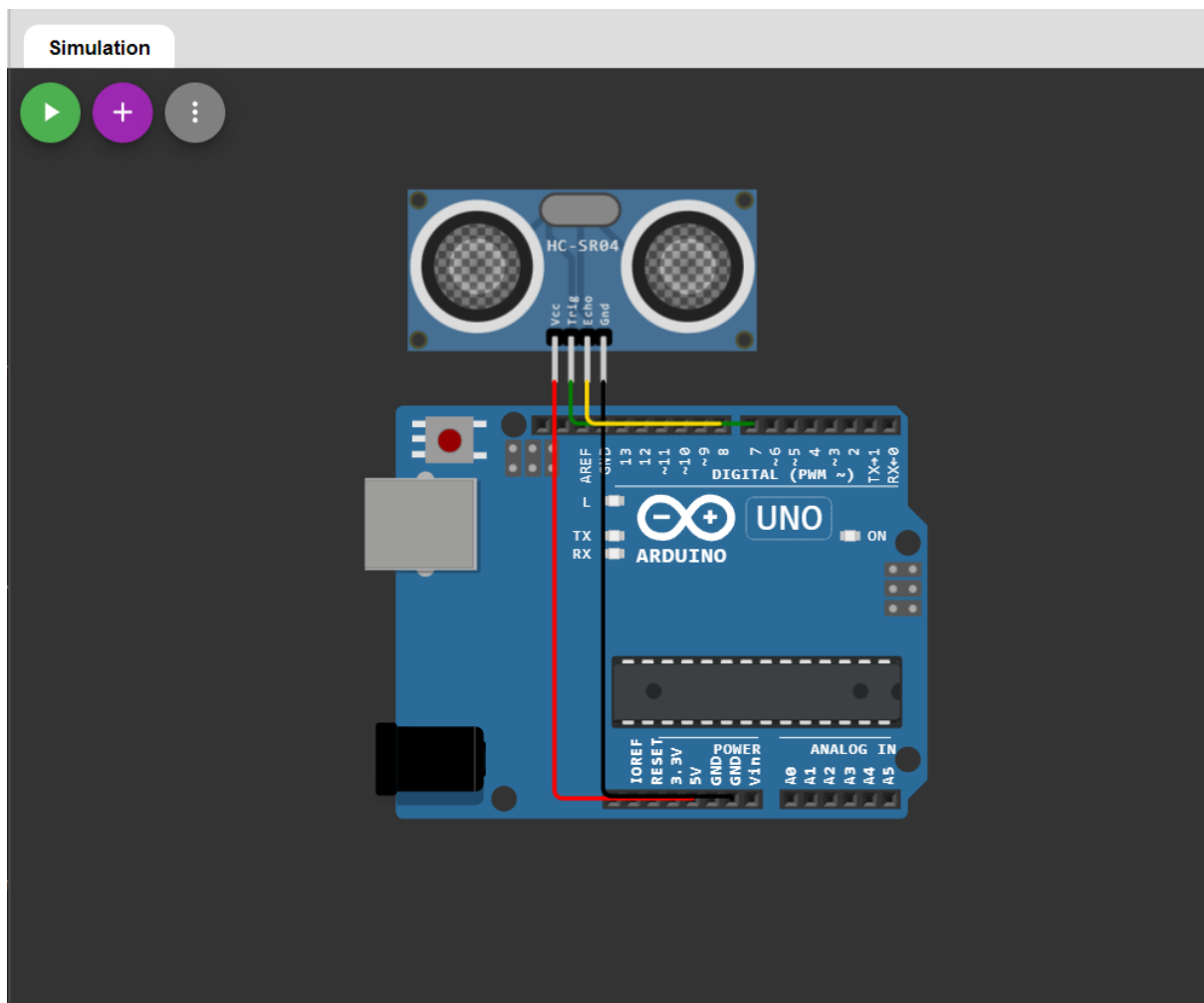
```
const int TRIG_PIN=7;
const int ECHO_PIN=8;
const unsigned int max_dist=23200;
void setup()
{
  digitalWrite(TRIG_PIN,LOW);
  Serial.begin(9600);
}
void loop(){
  unsigned long t1;
  unsigned long t2;
  unsigned long pulse_width;
  float cm;
  float inches;
  digitalWrite(TRIG_PIN,HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN,LOW);
  //Waitforpulseonecho pin
  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("Outofrange");
  }
  else
  {
    Serial.println("*****");
    Serial.print("Distance Measuredincm:");
```

```

    Serial.println(cm);
if(cm < 100){
Serial.println("Alert!!");
}
Serial.print("*****");
}
delay(1000);
}

```

CIRCUIT



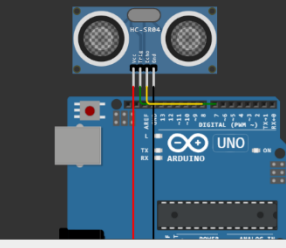
OUTPUT

WOKWI SAVE SHARE sketch.ino Docs SIGN IN

sketch.ino diagram.json Library Manager

```
1 //AROUND PIN (TRIGGERPIN, ECHOPIN)
2 const int TRIG_PIN=7;
3 const int ECHO_PIN=8;
4 //Anything over 400cm (23200us pulse) is "out of range"
5 const unsigned int max_dist=23200;
6 void setup()
7 {
8   //The trigger pin will tell the sensor to range find pin mode (TRIG_PIN, OUTPUT)
9   ;
10  digitalWrite(TRIG_PIN, LOW);
11  ;
12  //Set Echo pin as input to measure the time duration of pulse returning back from the distance sensor
13  ;
14  //We'll use the serial monitor to view the sensor output
15  Serial.begin(9600);
16  }
17 void loop() {
18   unsigned long t1;
19   unsigned long t2;
20   unsigned long pulse_width;
21   float cm;
22   float inches;
23   //Hold the trigger pin high for at least 10us
24   digitalWrite(TRIG_PIN, HIGH);
25   delayMicroseconds(10);
26   digitalWrite(TRIG_PIN, LOW);
27   //Wait for pulse to echo pin
28   while(digitalRead(ECHO_PIN)==0);
29   //Measure how long the echo pin was held high (pulsewidth) //Note: the micros() counter
30   t1 = micros();
31   while(digitalRead(ECHO_PIN)== 1);
32   t2=micros();
33   pulse_width=t2-t1;
```

Simulation



Distance Measured in cm: 45.66
Alert!!

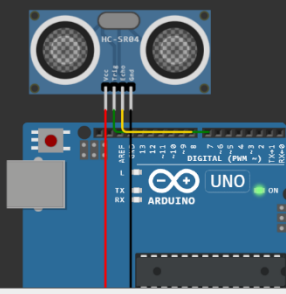
Distance Measured in cm: 45.59
Alert!!

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sketch.ino diagram.json Library Manager

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```

Simulation



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Distance Measured in cm: 42.62

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