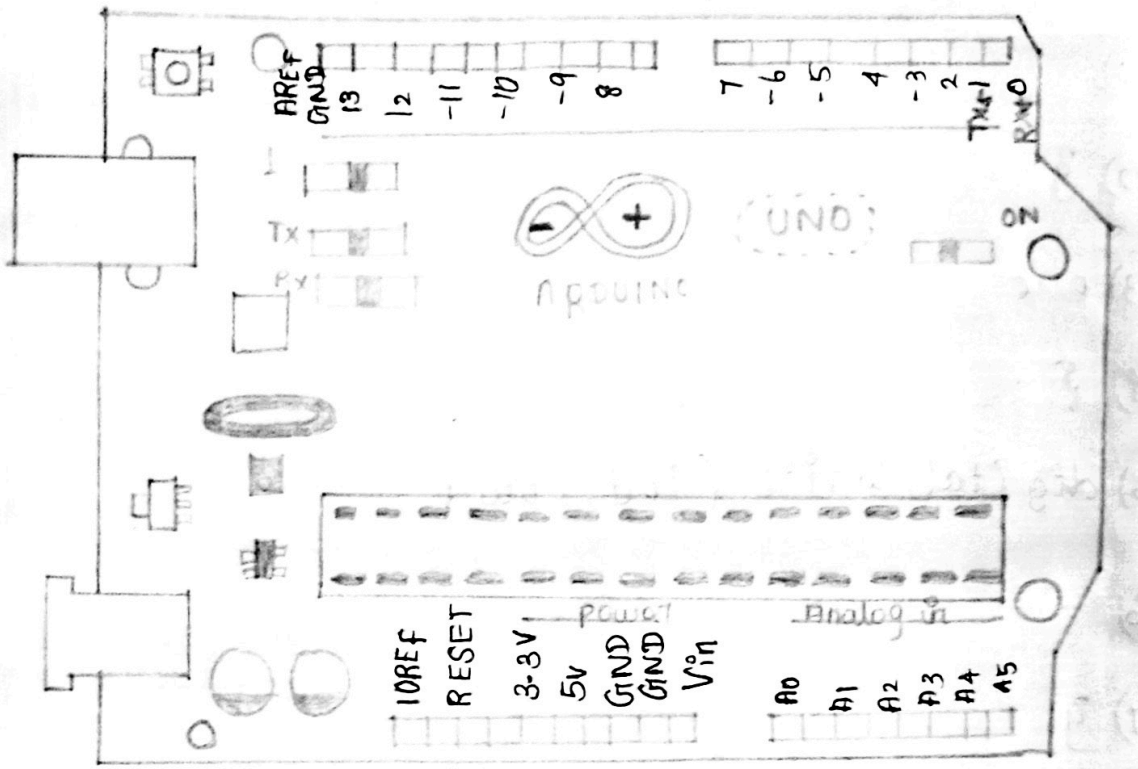
9/9/22 Technical Training and Internet of things

B3-3M5E



Program:

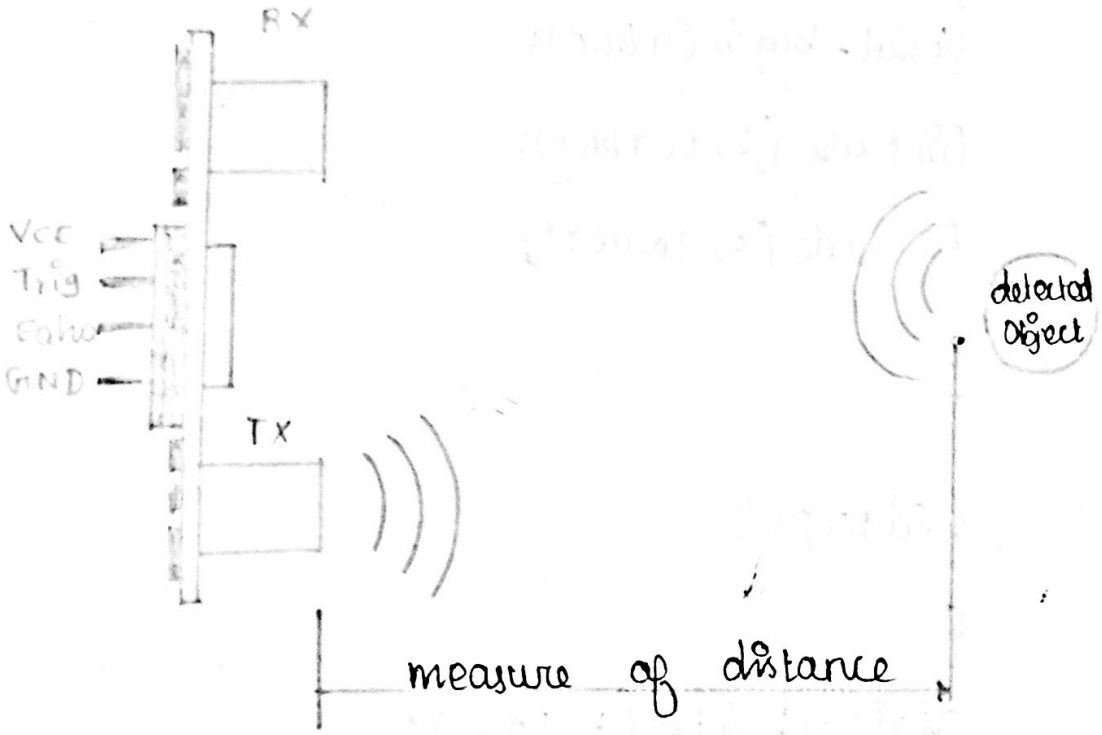
```
1) // C++ Code
2) //
3) void setup()
4) {
5) Serial.begin (9600);
6) PinMode (3, OUTPUT);
7) }
8)
9) void loop ()
10) {
11) int value = analogRead (A0);
12) Serial.Print ("value = ");
```

```
13)  Serial.Print (value);
14)  int Con_value = map(value, 0, 1033, 0, 255);
15)  Serial.print ("  Con_value = ");
16)  Serial.println (Con_value);
17)  analogwrite (3, Con_value);
18)
19)  delay (500);
20)  }.
```

ultrasonic sensor working:

→ Considering the travel time and the speed of the sound you can calculate the distance.

Distance = (Duration/2) * velocity of Sound (340m/s).



Ultrasonic Sensor Specifications :

Operating Voltage	:	DC 5V
Operating Current	:	15mA
Operating frequency	:	40KHz
Max Range	:	4 cm
Min Range	:	2cm
Ranging Accuracy	:	3mm
Measuring Angle	:	15 degree
Trigger input signal	:	10µs TTL Pulse
Dimension	:	45 x 20 x 15 mm

ultrasonic Sensor Code :

```
int t = 2;
int e = 3;
void setup()
{
Serial.begin(9600);
Pin Mode (t, OUTPUT);
Pin Mode (e, INPUT);
}

void loop()
{
digitalWrite(t, LOW);
```

```
digitalWrite (t, HIGH);
delayMicroseconds (10);
digitalWrite (t, LOW);
float dur = pulseIn (e, HIGH);
float dis = (dur * 0.0343/2);
Serial.Print ("Distance in cm:")
Serial.println (dis);
}
```

PIR Sensor Intro:

→ PIR Sensors allow you to sense motion almost always used to detect whether a human has moved in (or) out of the sensors range.

→ They are small, inexpensive, Low-powe easy to use and don't wear out. For that reason they are Commonly found in applications and gadgets used in homes (or) businesses.

→ They are often referred to as PIR, "Passive Infrared", "Pyroelectric", or "IR Motion" Sensors.

PIR Sensor Working :

→ The Pyro-electric Infra-Red (PIR) Sensor is an extremely useful device for detecting the presence of a moving body.

→ PIR is simply sensitive to the infrared energy emitted by every Living things.

→ When an intruder walks into the detector's field of vision, The detector "sees" a sharp increase in infrared energy.