

## Sensor Workup Code

**Team ID:** PNT2022TMID16239

**Project Name :** Smart Waste Management System

### **Code for Sensor working:**

```
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 20, 4);
float cm;
float inches;
```

```
#define ECHO_PIN 12
#define TRIG_PIN 13
float dist;
```

```
void setup()
{
    Serial.begin(115200);
    pinMode(LED_BUILTIN, OUTPUT);
    pinMode(TRIG_PIN, OUTPUT);
    pinMode(ECHO_PIN, INPUT);
    //pir pin
    pinMode(34, INPUT);

    //ledpins
    pinMode(23, OUTPUT);
    pinMode(22, OUTPUT);
    pinMode(21, OUTPUT);
    pinMode(15, OUTPUT);

    lcd.init();
    lcd.backlight();
    lcd.setCursor(1, 0);
    lcd.print("");
}
```

```
float readcmCM()
{
    digitalWrite(TRIG_PIN, LOW);
    delayMicroseconds(2);
    digitalWrite(TRIG_PIN, HIGH);
    delayMicroseconds(10);
```

```

    digitalWrite(TRIG_PIN, LOW);
    int duration = pulseIn(ECHO_PIN, HIGH);
    return duration * 0.034 / 2;
}

void loop()
{

    if(digitalRead(34))                                //pir motion detection
    {
        Serial.println("Motion Detected");
        Serial.println("Lid Opened");
        digitalWrite(10, HIGH);
        delay(10000);
        Serial.println("Lid Closed");

    }
    else
    {
        digitalWrite(10, LOW);
    }

    if(cm <= 100)                                        //Bin level detection
    {
        digitalWrite(21, HIGH);
        Serial.println("High Alert!!!,Trash bin is about to be full");
        digitalWrite(22, LOW);
        digitalWrite(23, LOW);
    }
    else if(cm > 150 && cm < 250)
    {
        digitalWrite(22, HIGH);
        Serial.println("Warning!!,Trash is about to cross 50% of bin level");
        digitalWrite(21, LOW);
        digitalWrite(23, LOW);
    }
    else if(cm > 250 && cm <=400)
    {
        digitalWrite(23, HIGH);
        Serial.println("Bin is available");
        digitalWrite(21, LOW);
        digitalWrite(22, LOW);
    }

    float inches = (cm / 2.54);                        //print on
    lcd
    lcd.setCursor(0,0);

```

```
lcd.print("Inches");  
lcd.setCursor(4,0);  
lcd.setCursor(12,0);  
lcd.print("cm");  
lcd.setCursor(1,1);  
lcd.print(inches, 1);  
lcd.setCursor(11,1);  
lcd.print(cm, 1);  
lcd.setCursor(14,1);  
delay(1000);  
lcd.clear();  
  
}
```

**Wokwi link :**

<https://wokwi.com/projects/348508834918040146>