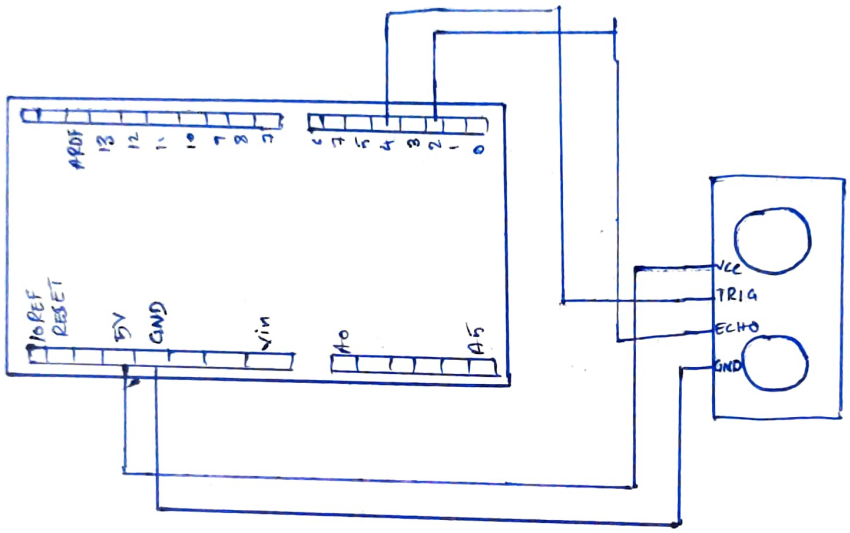
Shiva Praneeth Kodali
1BM18CS100

Program : 5

Program Title :- motion sensor

Aim :- To demonstrate the use of motion sensor

Circuit :-



Code:

```
int trigPin = 4;
int echoPin = 2;
long duration, cm, inches;
void setUPC ) {
    Serial.begin (9600);
    pinMode (trigPin, OUTPUT);
    PinMode (echoPin, INPUT);
}
void loop()
    digitalWrite (trigPin, LOW);
    delayMicroseconds (5);
    digitalWrite (trigPin, HIGH);
    delay Micaoseconds (10);
    digital Write (trigPin, LOW)
```

```
PinMode(echoPin, INPUT);
duration = PulseIn(echoPin, HIGH);
    cm = (duration/2) /29.1;
    inches = (duration/2) /74;
    Serial.print("Distance : ");
    Serial.print(inches);
    Serial.print("in : ");
    Serial.print("cm);
    Serial.print("cm: ");
     Serial.println();
       delay(250);
}
```

Output :

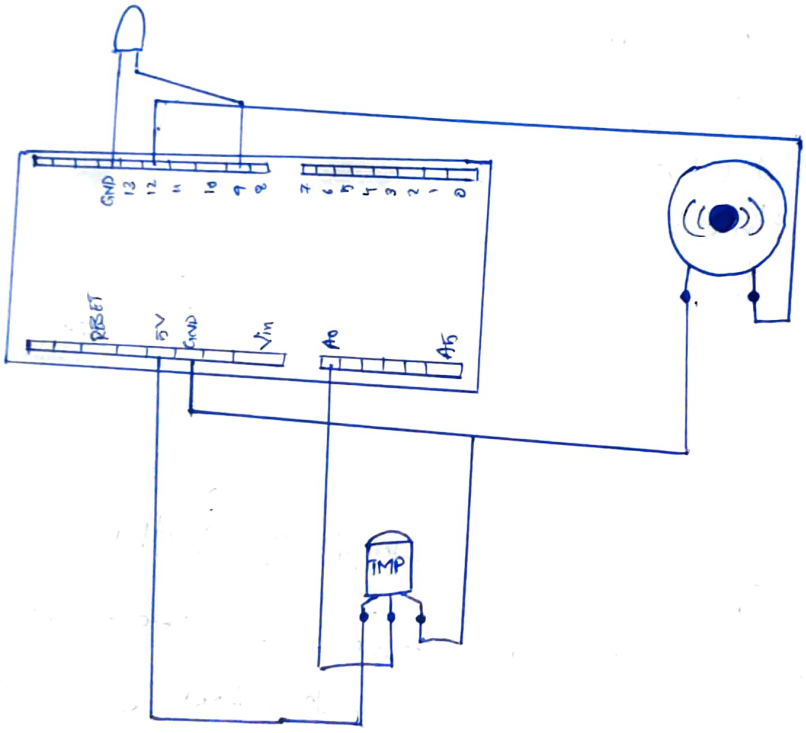
The distance of an object that is in the reach of the reference cone is seen in the serial Monitor [in both centimeters & inches].

Program: 6

Program Title :- fire detection

Aim :- To demonstrate fire detection with temp. sensor

circuit :-



code :-

```
Const int temperaturePin = 0,
      int buzzer  = 12;

void setup ()
     {
     serial.begin (9600);
     PinMode (buzzer, OUTPUT);
     PinMode (9, OUTPUT);
     PinMod
     }
     float getVoltage (int Pin)
        {
          return (analogRead (Pin) * 0.004882814);
        }
```

```
void loop ()
  {
    float voltage, degreesC;
    voltage = getVoltage (temperaturePin);
    degreesC = (voltage - 0.5) * 100.0;
    digitalWrite (9, LOW);
      if (degreeC < 37)
        {
          serial.print (degreesC);
          serial.print ("SAFE TEMPERATURE");
        }
      if (degreesC > 37)
        {
          serial.print (degreesC);
          serial.println ("ALERT");
          digitalWrite (buzzer, LOW);
          digitalWrite (9, HIGH);
          tone (12, 10000, 100);
            delay (100);
        }
    }
```

Output :-

When the temperature is increased beyond 37°C the buzzer starts ringing and the LED lights up. The serial monitor will display the temperature and the message "ALERT". If the temperature is below 37°C the the LED will be off and the message "SAFE TEMPERATURE" will be displayed in the serial monitor.