

SPRINT 1

SIMULATION OF SENSOR INTERFACING ARDUINO WITH PYTHON CODE

Date	18 NOVEMBER 2022
Team ID	PNT2022TMID29726
Project Name	Project – IoT based smart crop protection system for agriculture

DESCRIPTION:

In the sprint 1 we are planning to virtually simulate the Arduino and sensors using tinkercad

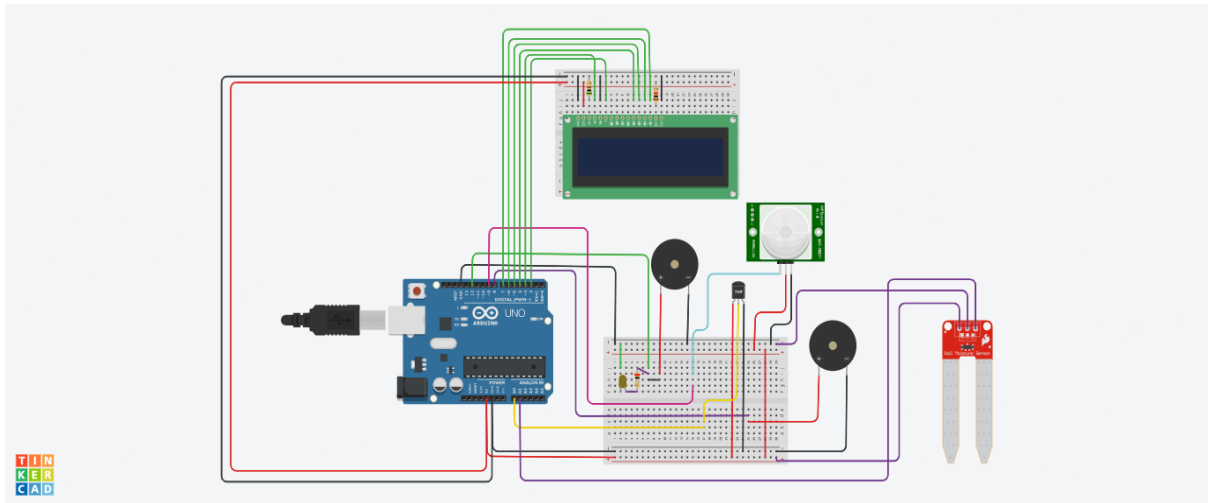
PYTHON CODE:

```
int moistval;
float moistpercentage;
#include<LiquidCrystal.h>
LiquidCrystal lcd(3, 2, 4, 5, 6, 7); // Creates (rs, enable, d4, d5, d6, d7)
//buzzer
void setup()
{
  lcd.begin(16,2);
  pinMode(13, OUTPUT);
  pinMode(12, OUTPUT); //for pir sensor o/p buzzer
  pinMode(8, OUTPUT); //for temp sensor o/p buzzer
  pinMode(9, INPUT); //feeding i/p to arduino from pir sensor
  Serial.begin(9600);
  pinMode(13, OUTPUT);
}
void loop()
{
  //pir sensor
  int p=digitalRead(9);
  if(p)
  {
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("motion alert");
    Serial.println("motion detected");
    tone(12,800); //if motion detected the buzzer will rung
    pinMode(13, HIGH);
    delay(500);
    lcd.clear();
    noTone(12);
    pinMode(13, LOW);
    delay(100);
  }
}
```

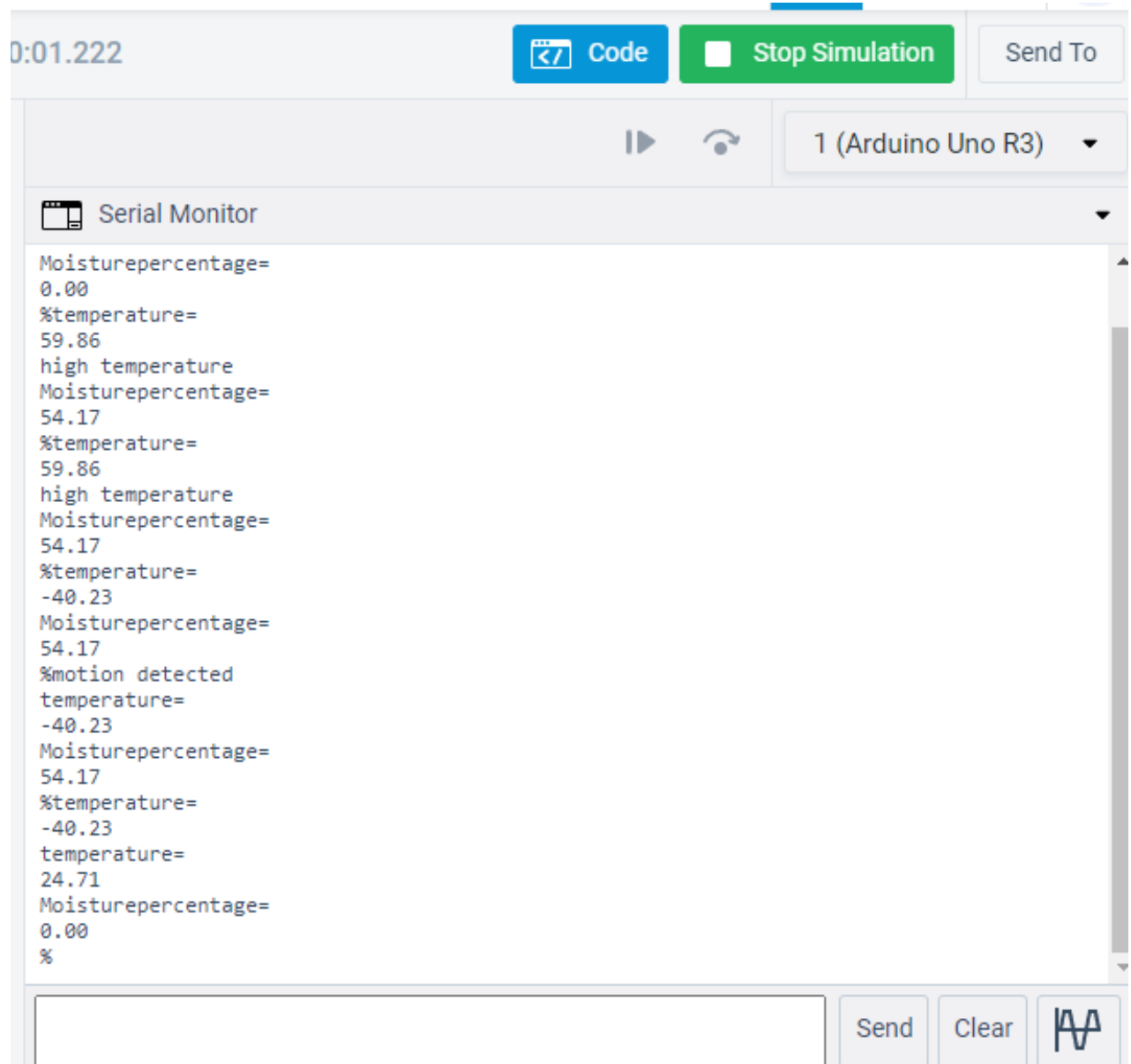
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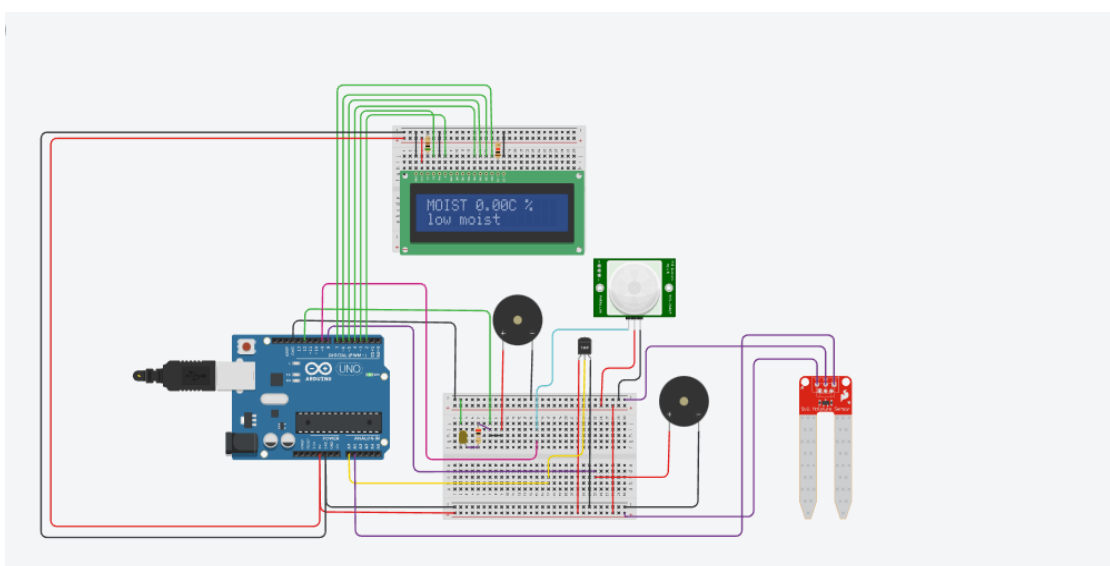
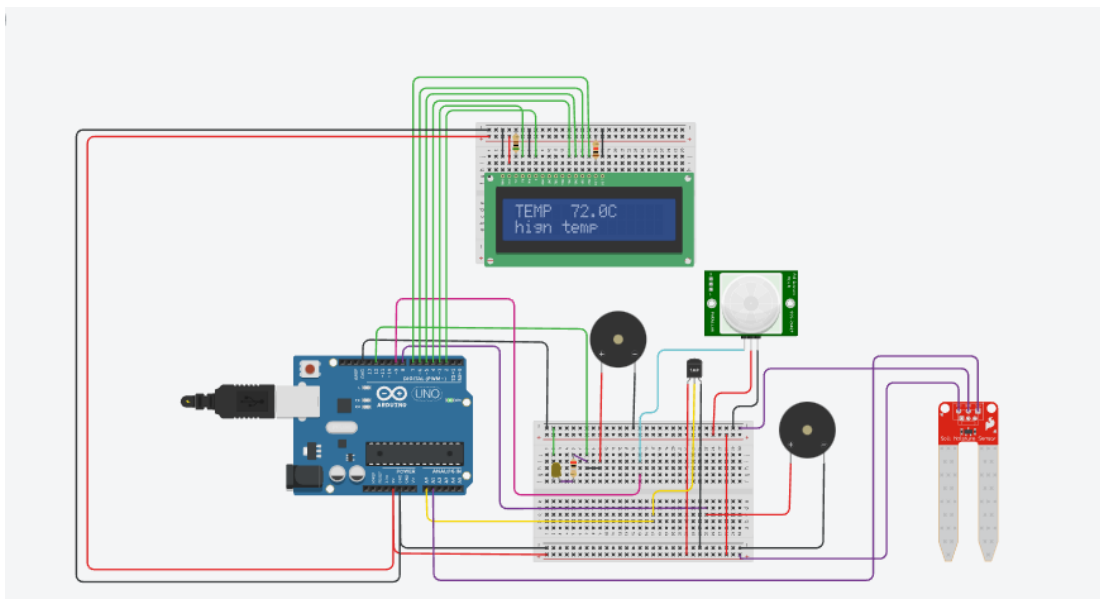
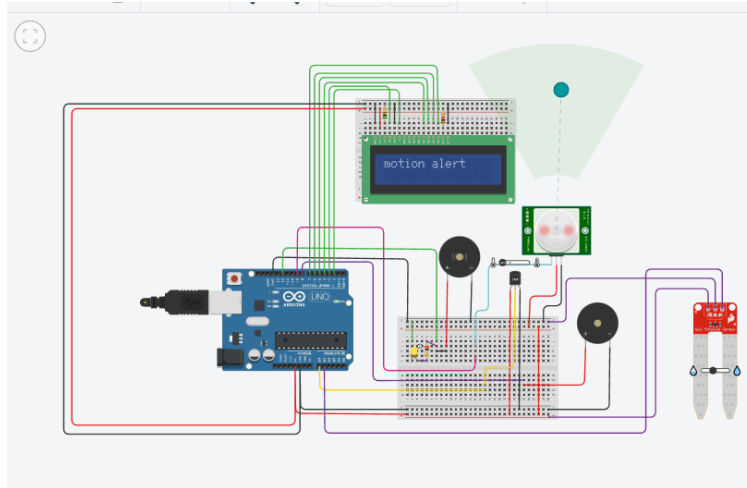
delay(100);
//temp sensor
double t=analogRead(A0);
double e=((t/1024)*5)-0.5)*100;
Serial.println("temperature=");
Serial.println(e);
lcd.setCursor(0,0);
lcd.print("TEMP");
lcd.setCursor(6,0);
lcd.print(e);
lcd.setCursor(10,0);
lcd.print("C");
if(e>40.00)
{
    lcd.setCursor(0,1);
    lcd.print("high temp");
    Serial.println("high temperature");
    tone(8,9000);//if temperature greater than 50 deg the buzzer will rung
    delay(500);
    noTone(8);
    delay(100);
}
delay(1000);
//moisture sensor
moistval=analogRead(A1);
moistpercentage=((moistval/539.00)*100);
Serial.println("Moisturepercentage=");
Serial.println(moistpercentage);
Serial.print("%");
lcd.setCursor(0,0);
lcd.print("MOIST");
lcd.setCursor(6,0);
lcd.print(moistpercentage);
lcd.setCursor(12,0);
lcd.print("%");
if(moistpercentage<10.00)
{
    lcd.setCursor(0,1);
    lcd.print("low moist");
    delay(500);
    lcd.clear();
}
delay(1000);
}

```



OUTPUT:





Tinkercad link : <https://www.tinkercad.com/things/cv3aSn5tqV-homeauto/editel>