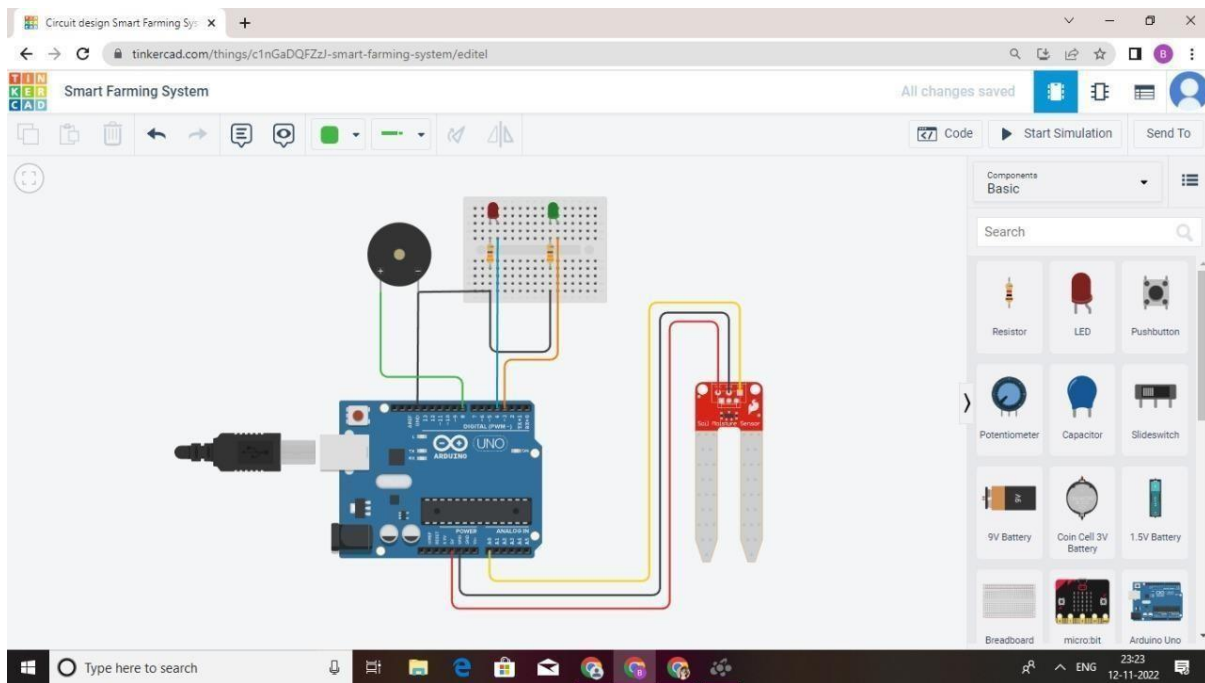


SPRINT 1

Date	29 October 2022
Team ID	PNT2022TMID53009
Project Name	Project – Smart Farmer - IoT Enabled Smart Farming Application

- Created Simulation by connecting the Sensors by using the Arduino.



Circuit design Smart Farming

tinkercad.com/things/c1nGaDQFZzJ-smart-farming-system/editel

Smart Farming System

Connection lost! Changes will be saved on reconnect.

Simulator time: 00:00:07.766

Code Stop Simulation Send To

1 (Arduino Uno R3)

Output Control Input Math Notation Variables

set built-in LED to HIGH

set pin 0 to HIGH

set pin 3 to 0

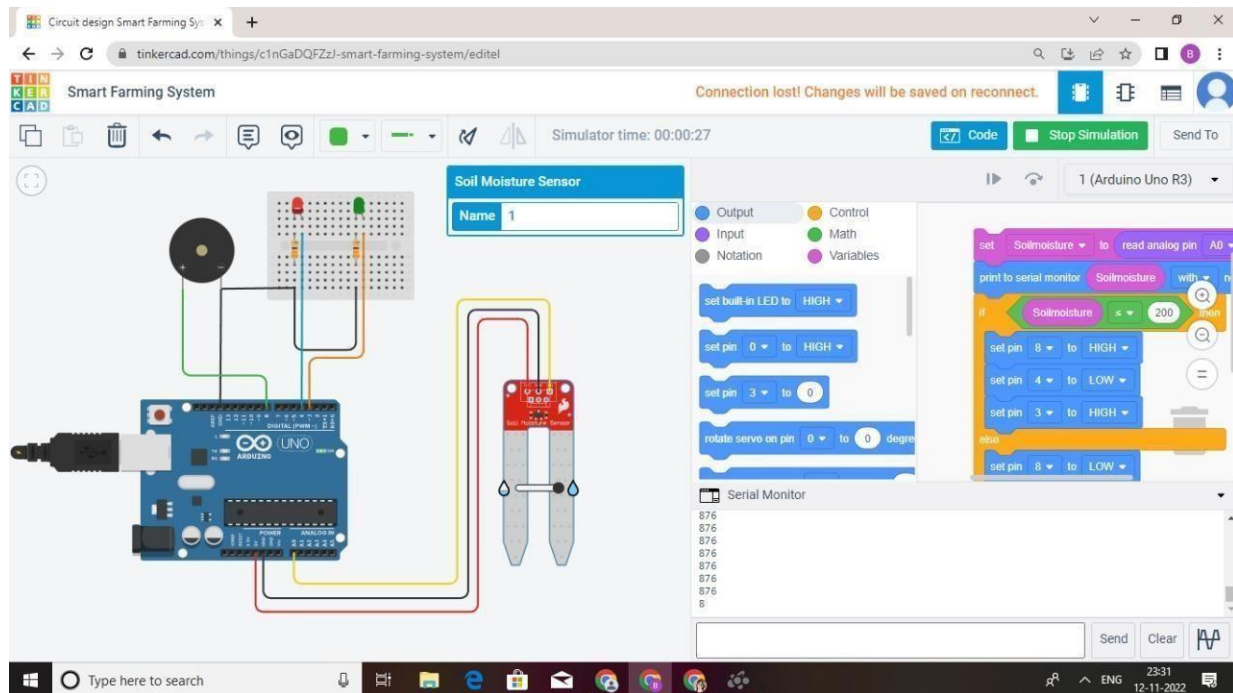
rotate servo on pin 0 to 0 degree

Serial Monitor

0
0
0
0
0
0
0
0
0
0

Send Clear

23-28
12-11-2022



```
#include <ESP8266WiFi.h>
#include <WiFiClient.h>
#include <PubSubClient.h>
#include "DHT.h"

const char* ssid = "SMART-G";
const char* password = "10112019";

#define DHTPIN D6
#define G D0
#define DHTTYPE DHT11
DHT dht(DHTPIN, DHTTYPE);

#define ID "yl3urg"
#define DEVICE_TYPE "ESP8266"
#define DEVICE_ID "TEST"
#define TOKEN "TEST-12345"

char server[] = ID
".messaging.internetofthings.ibmcloud.c
om";
```

```

char publish_Topic1[] = "iot-
2/evt/Data1/fmt/json";
char publish_Topic2[] = "iot-
2/evt/Data2/fmt/json";
char publish_Topic3[] = "iot-
2/evt/Data2/fmt/json";
char publish_Topic4[] = "iot-
2/evt/Data2/fmt/json";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ID ":"
DEVICE_TYPE ":" DEVICE_ID;

WiFiClient wifiClient;
PubSubClient client(server, 1883, NULL,
wifiClient);

void setup() {
  pinMode(D0,OUTPUT);
  digitalWrite(D0,HIGH);
  Serial.begin(115200);
  dht.begin();
  Serial.println();
  WiFi.begin(ssid, password);
  while (WiFi.status() !=
WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.println("");
  Serial.println(WiFi.localIP());

  if (!client.connected()) {
    Serial.print("Reconnecting
client to ");
    Serial.println(server);
    while
(!client.connect(clientId, authMethod,
token)) {
      Serial.print(".");
      delay(500);
    }
    Serial.println("Connected TO
IBM IoT cloud!");
  }
}

```

```

long previous_message = 0;
void loop() {
    client.loop();
    long current = millis();
    if (current - previous_message >
3000) {
        previous_message = current;
        float hum =
dht.readHumidity();
        float temp =
dht.readTemperature();
        float MOI =
map(analogRead(A0), 0, 1023, 100, 0);
        float bi =
map(digitalRead(D1), 0, 1, 100, 0);
        if (isnan(hum) || isnan(temp)
){
            Serial.println(F("Failed to read
from DHT sensor!"));
            return;
        }

        Serial.print("Temperature: ");
        Serial.print(temp);
        Serial.print("°C");
        Serial.print(" Humidity: ");
        Serial.print(hum);
        Serial.print("%");
        Serial.print("SOIL MOITURE: ");
        Serial.print(MOI);
        Serial.print("ANIMAL AND BIRD: ");
        Serial.print(bi);
        if(MOI<=10)
        {
            digitalWrite(D0,LOW);
            delay(100);
            digitalWrite(D0,HIGH);
        }
        else
        {
            digitalWrite(D0,HIGH);
        }

        String payload =
"\d\":{\"Name\":\"" DEVICE_ID "\"";

```

```

        payload +=
        "\",\"Temperature\":";
        payload += temp;
        payload += "}}";

        Serial.print("Sending payload:
");
        Serial.println(payload);

        if
        (client.publish(publish_Topic1, (char*)
payload.c_str())) {
            Serial.println("Published
successfully");
        } else {
            Serial.println("Failed");
        }
        String payload1 =
        "{\"d\":{\"Name\":\"" DEVICE_ID "\"";
        payload1 +=
        "\",\"Humidity\":";
        payload1 += hum;
        payload1 += "}}";
        Serial.print("Sending
payload: ");
        Serial.println(payload1);
        Serial.println('\n');

        if
        (client.publish(publish_Topic2, (char*)
payload1.c_str())) {
            Serial.println("Published
successfully");
        } else {
            Serial.println("Failed");
        }

        String payload3 =
        "{\"d\":{\"Name\":\"" DEVICE_ID "\"";
        payload3 +=
        "\",\"Moiture\":";
        payload3 += MOI;
        payload3 += "}}";

        Serial.print("Sending payload:
");

```

```

        Serial.println(payload3);

        if
        (client.publish(publish_Topic3, (char*)
payload3.c_str())) {
            Serial.println("Published
successfully");
        } else {
            Serial.println("Failed");
        }

String payload4 = "{\d\":{\"Name\":\""
DEVICE_ID "\"";
        payload4 +=
        "\",\"Animal&Bird\":\"";
        payload4 += bi;
        payload4 += "}}";

        Serial.print("Sending payload:
");
        Serial.println(payload4);

        if
        (client.publish(publish_Topic4, (char*)
payload4.c_str())) {
            Serial.println("Published
successfully");
        } else {
            Serial.println("Failed");
        }

    }
}

```

