

Project Development

Delivery Of Sprint-1

Date	09 Nov. 22
Team Id	PNT2022TMID14185
Project Name	Smart Farmer - IoT Enabled Smart Farming Application

PROGRAM

```
#include <Servo.h>

Servo s;

int Sensor = 0;

int data = 0;

int motorPin = 9;

void setup()

{

Serial.begin(9600);

pinMode(A0,INPUT);

//Temperature Sensor    pinMode(A1,INPUT);

//Soil Moisture Sensor   pinMode(10,OUTPUT);

//GREEN light for LED    pinMode(11,OUTPUT);

//BLUE light for LED     pinMode(12,OUTPUT);

//RED light for LED      s.attach(3);

//Servo Motor

pinMode(motorPin, OUTPUT); //DC motor

}

void loop(){

Sensor = analogRead(A1); //Reads data from Soil Moisture sensor
```

```
data = map(Sensor,0, 1023, 0, 100); //Low analog value indicates HIGH moisture level and High analog value indicates LOW moisture level
```

```
//data = map(analogValue,fromLOW,fromHIGH,toLOW,toHIGH)
```

```
Serial.print("Soil Moisture value:");
```

```
Serial.println(data);
```

```
//data = 0' indicates wet and 'data = 100' indicates dry
```

```
double a = analogRead (A0); //Reads data from Temperature sensor
```

```
double t = (((a/1024)*5)-0.5)*100;
```

```
Serial.print("Temperature value:");
```

```
Serial.println(t);
```

```
if (t>40 & t<50)
```

```
{
```

```
digitalWrite(10,0);
```

```
digitalWrite(11,1);
```

```
digitalWrite(12,0);
```

```
s.write(90);
```

```
digitalWrite(motorPin, HIGH);
```

```
Serial.println("Water Partially Flows");
```

```
}
```

```
else if (t>50)
```

```
{
```

```
digitalWrite(10,0);
```

```
digitalWrite(11,0);
```

```
digitalWrite(12,1);
```

```
s.write(180);
```

```
digitalWrite(motorPin, HIGH);
```

```
Serial.println("Water Fully Flows");  
}
```

```
else if (t>30 & data<30)  
{  
    digitalWrite(10,1);  
    digitalWrite(11,1);  
    digitalWrite(12,0);  
    s.write(90);  
    digitalWrite(motorPin, HIGH);  
    Serial.println("Water Partially Flows");  
}
```

```
else if (data<50)  
{  
    digitalWrite(10,0);  
    digitalWrite(11,1);  
    digitalWrite(12,1);  
    s.write(90);  
    digitalWrite(motorPin, HIGH);  
    Serial.println("Water Partially Flows");  
}
```

```
else  
{  
    digitalWrite(10,1);  
    digitalWrite(11,0);
```

```

digitalWrite(12,0);

s.write(0);

digitalWrite(motorPin, LOW);

Serial.println("  ");

delay(1000);

}

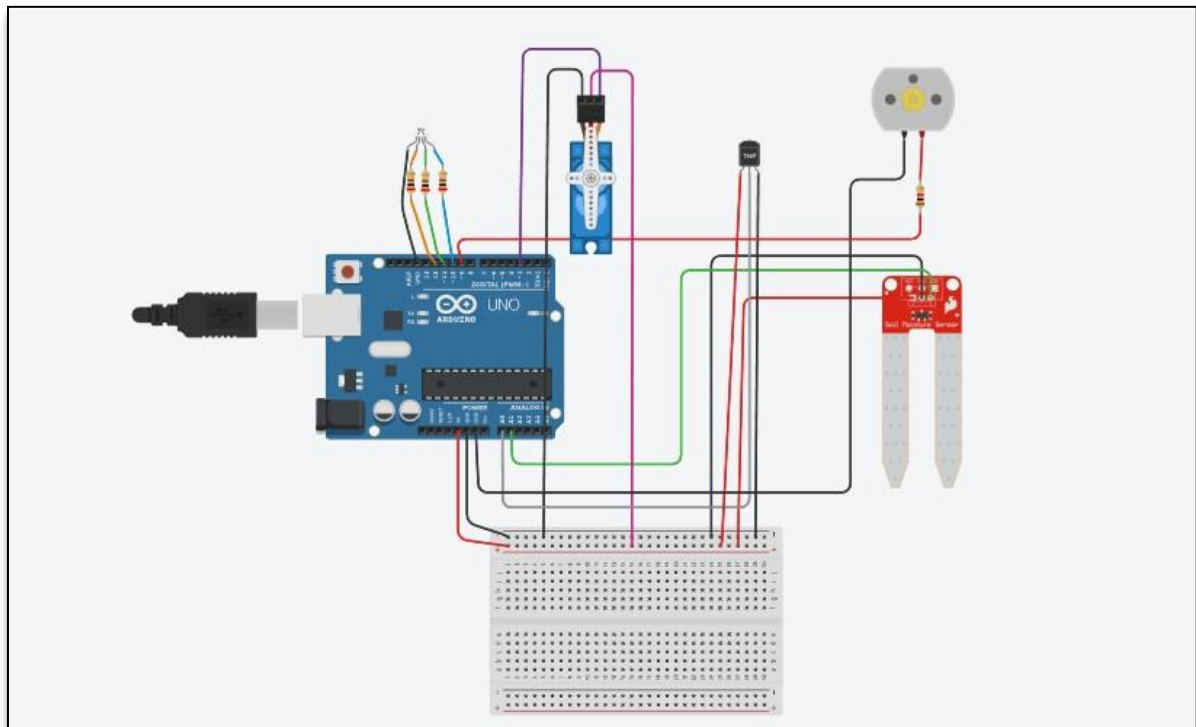
}

```

COMPONENTS

S.NO	COMPONENTS	QUANTITY
1	Arduino uno r3	1
2	Micro servo	1
3	Led rgb	1
4	200 Ω Resistor	3
5	Soil Moisture Sensor	1
6	DC Motor	1
7	1K Ω Resistor	1
8	Temperature sensor(TMP36)	1

CIRCUIT DIAGRAM



OUTPUT



Serial Monitor

```
Water Partially Flows  
Soil Moisture value:0  
Temperature value:24.71  
Water Partially Flows  
Soil Moisture value:0  
Temperature value:24.71  
Water Partially Flows  
Soil Moisture value:0  
Temperature value:24.71  
Water Partially Flows  
Soil Moisture value:0  
Temperature value:24.71  
Water Partially Flows
```

SIMULATION LINK

<https://www.tinkercad.com/things/9T64ABJ1hL6-brilliant-jofo/editel?tenant=circuits>