

# SPRINT - 1

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<b>PROJECT NAME</b>	<b>Smart Farmer - IoT Enabled Smart Farming Application</b>

## Sensors Connections with Arduino using C 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");
```

```
}
```

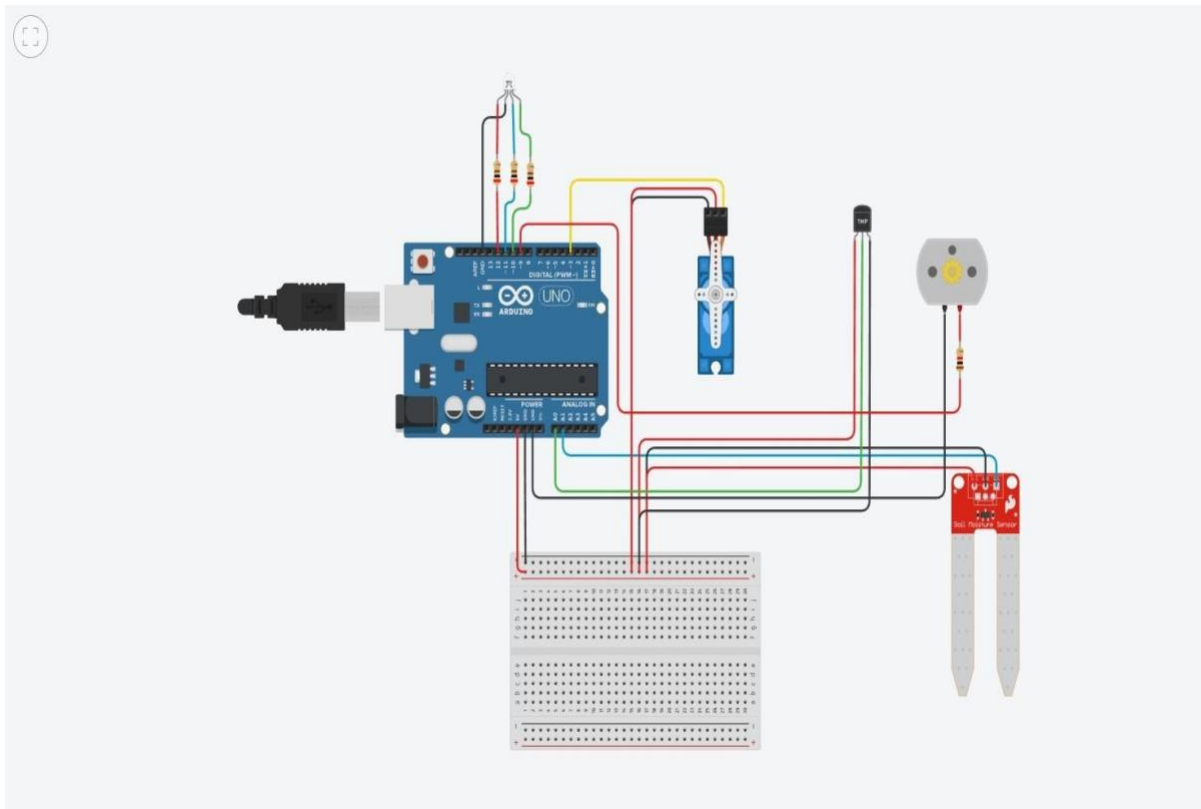
```
else if (t>30 & data<30){  
    digitalWrite(10,1);  
    digitalWrite(11,1);  
    digitalWrite(12,0);  
    s.write(90);  
    digitalWrite(motorPin, HIGH);  
    Serial.println("Water Partially Flows");  
}
```

```
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("Water Does Not Flow");  
}  
Serial.println("-----");  
delay(1000);  
}
```

## Circuit Diagram



## Components Used

Name	Quantity	Component
UAU	1	Arduino Uno R3
SERVOMS	1	Positional Micro Servo
DLED	1	LED RGB
R2 R3 R4	3	200 $\Omega$ Resistor
SENSMS	1	Soil Moisture Sensor
MSmall 6V DC Motor	1	DC Motor
RR	1	1 k $\Omega$ Resistor
UTS	1	Temperature Sensor [TMP36]

## Schematic View

