

# Project development phase

## SPRINT-1

TEAM ID	PNT2022TMID47947
PROJECT NAME	SMARTFARMER - IoT ENABLED SMART FARMING APPLICATION

Program:

```
#include "Arduino.h"#include
"dht.h"
#include "SoilMoisture.h"

#define dht_apin A0 const int sensor_pin = A1; //soil moistureint pin_out = 9; dht DHT; int
c=0; void setup() { pinMode(2, INPUT); //Pin 2 as INPUT pinMode(3, OUTPUT);

//PIN 3 as OUTPUTpinMode(9, OUTPUT); //output for pump
} void loop()
{ if (digitalRead(2) == HIGH)
{
digitalWrite(3, HIGH); // turn the LED/Buzz ON
delay(10000); // wait for 100 msecond digitalWrite(3, LOW); // turn the
LED/Buzz OFFdelay(100);
}

Serial.begin(9600); delay(1000);

DHT.read11(dht_apin); //tempraturefloat h=DHT.humidity; float
t=DHT.temperature;delay(5000); Serial.begin(9600); float moisture_percentage;int
sensor_analog;

sensor_analog = analogRead(sensor_pin); moisture_percentage = ( 100 - (
(sensor_analog/1023.00) *100 ) ); float m=moisture_percentage;delay(1000);
if(m<40)//pump { while(m<40)
{
digitalWrite(pin_out,HIGH); //open pump

sensor_analog = analogRead(sensor_pin); moisture_percentage = ( 100 - (
(sensor_analog/1023.00) *100 ) ); m=moisture_percentage; delay(1000);
}
```

The screenshot shows the Tinkercad web interface. The main workspace displays a breadboard circuit. An Arduino Uno R3 is connected to a breadboard. The breadboard contains a 555 timer, a 10k resistor, a 1N4148 diode, and a red LED. The LED is connected to the output of the 555 timer. A digital sensor module is also connected to the breadboard. The right sidebar shows the code editor with a C++ program for controlling the LED and pump based on moisture sensor readings.

```

1 #include "Arduino.h"
2 #define pin_out 10
3 #include "DHT.h"
4 #define dht_pin 10 //pin 10 is connected to sensor pin 10
5 //PIN 2 as OUTPUT pin 10 as OUTPUT //output for pump
6 //void loop()
7 { if (digitalRead(2) == HIGH)
8 {
9   digitalWrite(10, HIGH); // turn the LED/Bus ON
10  delay(10000); // wait for 100 second digitalWrite(2, LOW); // turn
11  LED/Bus OFF/delay(100);
12 }
13 }
14 Serial.begin(9600); delay(1000);
15 DHT.read11(dht_pin); //temperature float h=DHT.humidity; float m=DHT
16 sensor_analog = analogRead(sensor_pin); moisture_percentage = ( 10
17 {
18   digitalWrite(pin_out,HIGH); //open pump
19   sensor_analog = analogRead(sensor_pin); moisture_percentage = ( 10
20 }
21 digitalWrite(pin_out,LOW); //closepump
22 } if (m>70) { mySerial.begin(9600);delay(10000); Serial.begin(9600)
23 Serial.print("h="); delay(1000);
24 Serial.print("m="); delay(1000);
25 Serial.print("Temperature="); delay(1000);
26 Serial.print("Humidity="); delay(1000);
27 }
28 }

```