Project Development Phase- Delivery of Sprint 1

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Project Name	Smart Farmer-IoT Enabled Smart Farming Application

1. Introduction

Smart farming enables the farmers to do the work efficiently. By using this device the workload of farmers is greatly reduced due to the automation of humidity, water level etc..

2. Problem Statement

To provide efficient decision support system using wireless sensor natural which handle different activities of farm and gives useful information related to agriculture soil moisture, temperature , soil humidity control.

3. Proposed Solution

we can provide certain modes for different crop. This different modes can be given a range of humidity level for different crops. When the soil moisture level is not sufficient for the plant growth then the system will release the water.

Connecting Sensors with Arduino using C++ code

```cpp
#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);
      }
      digitalWrite(pin_out,LOW);                  //closepump
      }
      if(c>=0)
```

```
    {

    mySerial.begin(9600);

    delay(15000);

    Serial.begin(9600);

    delay(1000);

    Serial.print("\r");

    delay(1000);

    Serial.print((String)"update-
    >"+(String)"Temprature="+t+(String)"Humidity="+h+(String
)"Moisture="+m);

    delay(1000);

        }

}
```

Circuit Diagram