Project Development - Delivery of Sprint – 1

Date	06 October 2022
Team ID	PNT2022TMID35124
Project Name	Project – Smart Farmer - IoT Enabled Smart Farming Application

Connecting Sensors with Arduino using C++ code

```
#include "Arduino.h"
#include "DHT.h"
#include "PIR.h"
#include "SoilMoisture.h"
#include "Pump.h"
#define DHT_PIN_DATA 3
#define PIR_PIN_SIG 4
#define SOILMOISTURE_5V_PIN_SIG A10
#define WATERPUMP_PIN_COIL1 2
DHT dht(DHT_PIN_DATA);
PIR pir(PIR_PIN_SIG);
SoilMoisture soilMoisture_5v(SOILMOISTURE_5V_PIN_SIG);
Pump waterpump(WATERPUMP_PIN_COIL1);
const int timeout = 10000;
char menuOption = 0;
long time0;
void setup()
{
 Serial.begin(9600);
 while (!Serial) ;
 Serial.println("start");
 dht.begin();
```

```
 menuOption = menu();
}
void loop()
{
 if(menuOption == '1') {
 float dhtHumidity = dht.readHumidity();
 float dhtTempC = dht.readTempC();
 Serial.print(F("Humidity: "));
 Serial.print(dhtHumidity);
 Serial.print(F(" [%]\t"));
 Serial.print(F("Temp: "));
 Serial.print(dhtTempC);
 Serial.println(F(" [C]"));
 }
 else if(menuOption == '2')
 {bool pirVal = pir.read();
 Serial.print(F("Val: ")); Serial.println(pirVal);
 }
 else if(menuOption == '3') {
 int soilMoisture_5vVal = soilMoisture_5v.read();
 Serial.print(F("Val: "));
 Serial.println(soilMoisture_5vVal);
 }
 else if(menuOption == '4')
 {waterpump.on();
 delay(2000);
 waterpump.off();
 delay(2000);
 }
```

```
 if (millis() - time0 > timeout)
 {
 menuOption = menu();
 }
}
char menu()
{
 Serial.println(F("\nWhich component would you like to test?"));
 Serial.println(F("(1) DHT22/11 Humidity and Temperature Sensor"));
 Serial.println(F("(2) Infrared PIR Motion Sensor Module"));
 Serial.println(F("(3) Soil Moisture Sensor"));
 Serial.println(F("(4) Submersible Pool Water Pump"));
 Serial.println(F("(menu) send anything else or press on board reset button\n"));
 while (!Serial.available());
 while (Serial.available())
 {
 char c = Serial.read();
 if (isAlphaNumeric(c))
 {
 if(c == '1')
 Serial.println(F("Now Testing DHT22/11 Humidity and Temperature Sensor"));
 else if(c == '2')
 Serial.println(F("Now Testing Infrared PIR Motion Sensor Module"));
 else if(c == '3')
 Serial.println(F("Now Testing Soil Moisture Sensor"));
 else if(c == '4')
 Serial.println(F("Now Testing Submersible Pool Water Pump"));
 else
 {
```

```
Serial.println(F("illegal input!"));
return 0;
}
time0 = millis();
return c;
}
}
}
```

Circuit Diagram: