

Project Development - Delivery of Sprint – 1

Date	7 th November 2022
Team ID	PNT2022TMID02589
Project Name	SMARTFARMER – IoT ENABLED SMARTFARMING APPLICATION

PROGRAM

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;  
}  
}
```



