

Project Development - Delivery of Sprint – 1

Date	31 October 2022
Team ID	PNT2022TMID15629
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:

