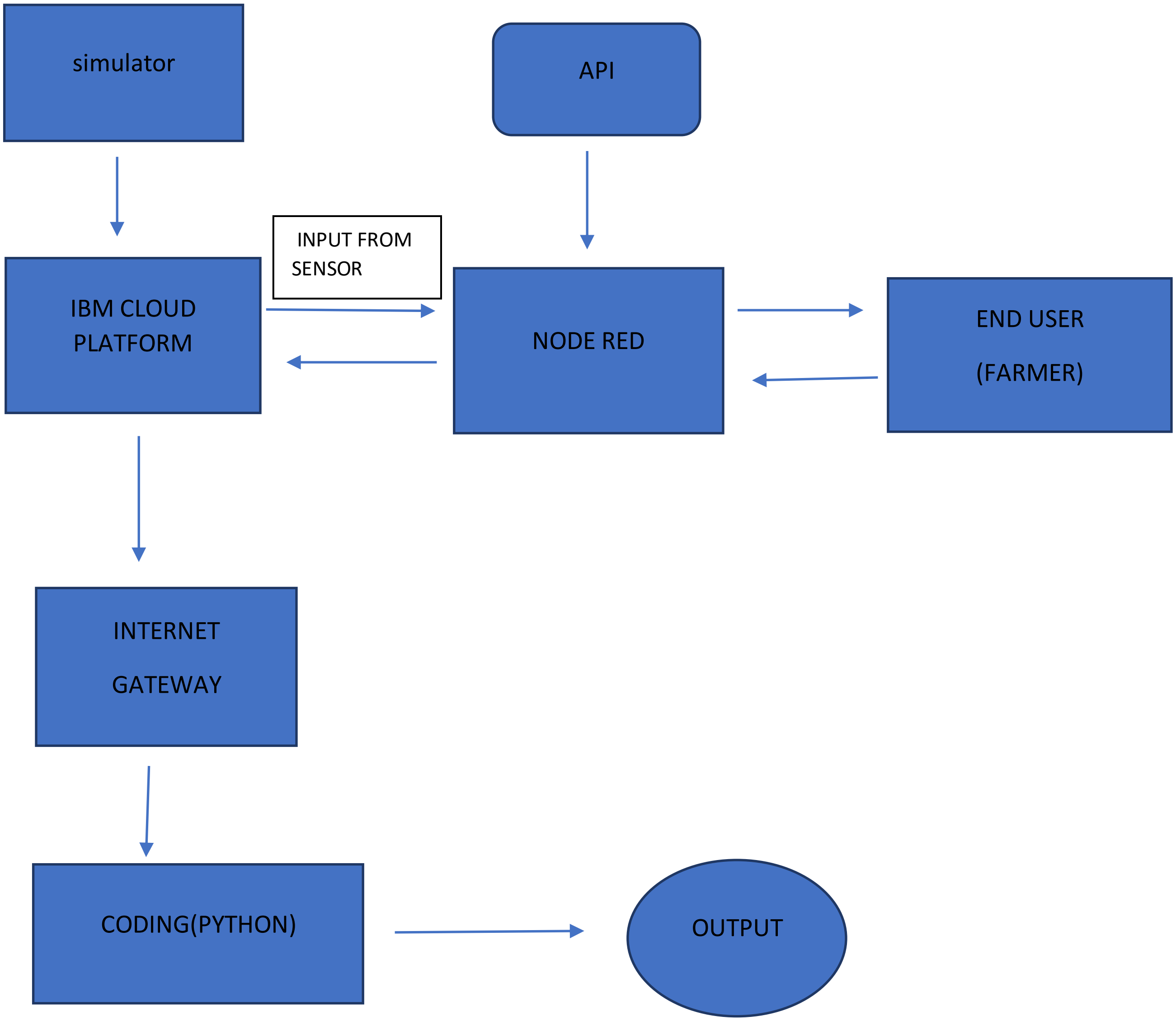
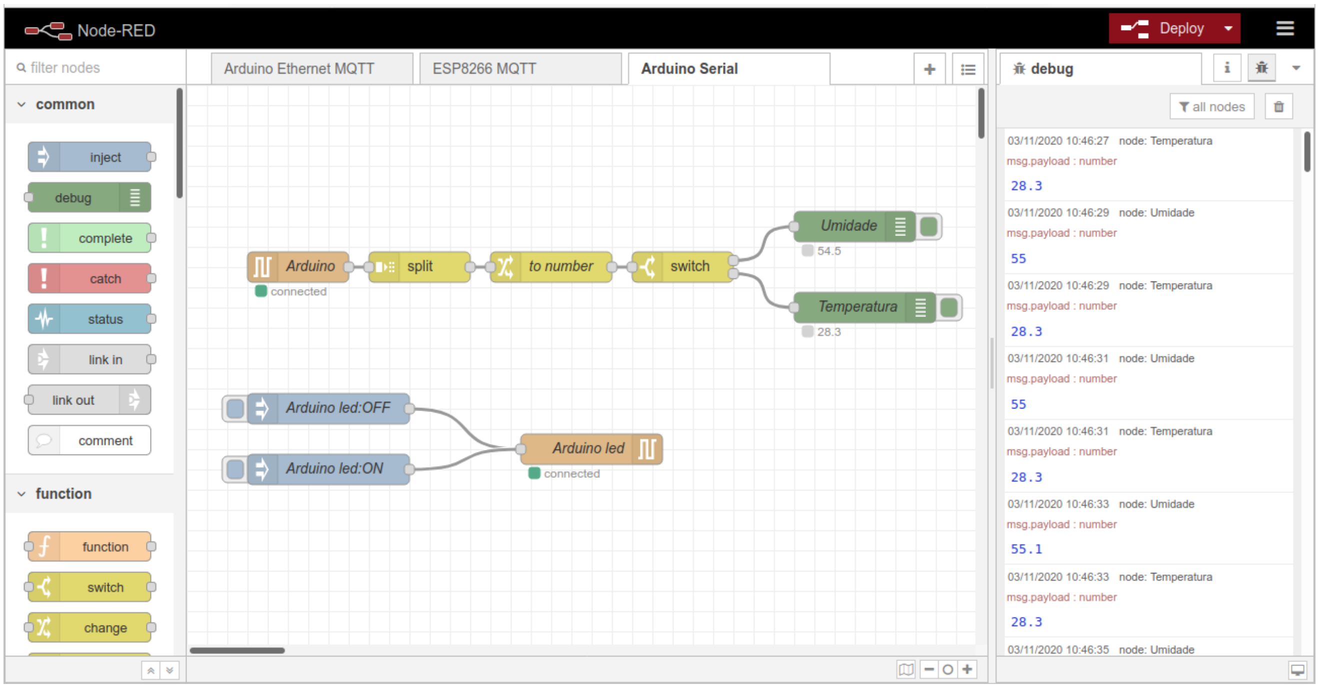
SPRINT DELIVERY-1

DATE	14.11.2022
TEAM ID	PNT2022TMID33042
PROJECT NAME	IOT-Smart Farmer

BLOCK DIAGRAM:



NODE RED SOFTWARE:



```
03/11/2020 10:46:27   node: Temperatura
msg.payload : number
28.3
03/11/2020 10:46:29   node: Umidade
msg.payload : number
55
03/11/2020 10:46:29   node: Temperatura
msg.payload : number
28.3
03/11/2020 10:46:31   node: Umidade
msg.payload : number
55
03/11/2020 10:46:31   node: Temperatura
msg.payload : number
28.3
03/11/2020 10:46:33   node: Umidade
msg.payload : number
55.1
03/11/2020 10:46:33   node: Temperatura
msg.payload : number
28.3
03/11/2020 10:46:35   node: Umidade
```

IBM Watson IOT platform

Watson IoT Platform features Analytics and Watson APIs Completely manage your IoT landscape and make better business decisions. Using a secure, smart, and scalable platform as the hub of your IoT, get real-time analysis of user, machine and system-generated data, including speech, text video and social sentiment.

.Phyton IDE

Code:

```
import time

import sys

import ibmiotf.application

import ibmiotf.device
import random
# details of  IBM Watson Device Credentials
organization = "vuhdgo"
deviceType = "project"
deviceId = "12345"
authMethod = "use-token-auth"
authToken = "12345678"


def myCommandCallback(cmd): print("Command received: %s" % cmd.data['command'])



status = cmd.data['command']
if status == "motoron":
print("motor is on")
elif status == "motoroff":
print("motor is off")
else :
print("please send proper command")
   try:
deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod,
                    "auth-token": authToken}
deviceCli = ibmiotf.device.Client(deviceOptions)
   except Exception as e:
print("Caught exception connecting device: %s" % str(e))
sys.exit()
      event
      of
      type
```

```
    "greeting"

    10

    times

deviceCli.connect()

    while True:          # Get Sensor Data from DHT11

      temp = random.randint(90, 110)

      Humid = random.randint(60, 100)

Mois = random.randint(20, 120)

      data = {'temp': temp, 'Humid': Humid, 'Mois': Mois}

myOnPublishCallback()

print("Published Temperature = %s C" % temp,"Humidity = %s %%" % Humid,"Moisture =%s deg c" % Mois,"to IBM Watson")

    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,on_publish=myOnPublishCallback)

if not success:

print("Not connected to IoTF")

time.sleep(10)

deviceCli.commandCallback = myCommandCallback
```

Aurdino code for C :

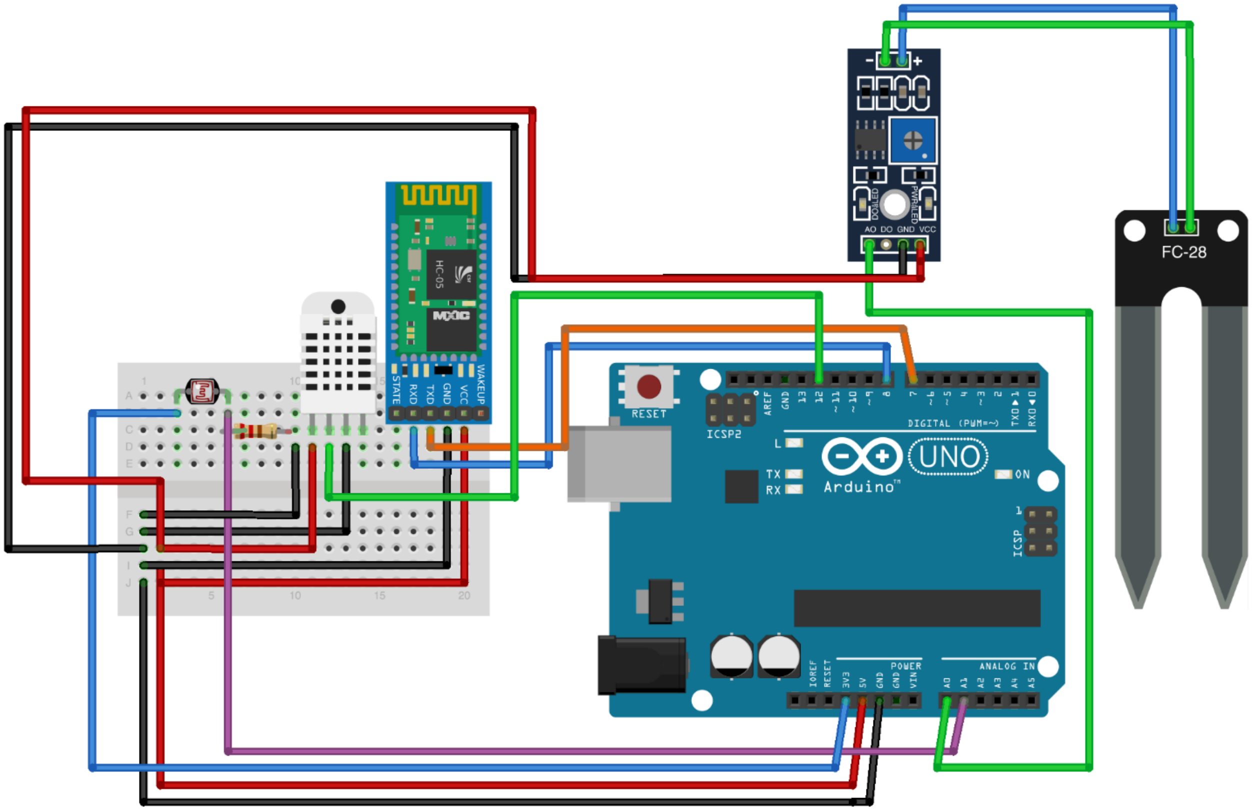
```
#include <dht.h>

#include <SoftwareSerial.h>

#definedht_apin A0

SoftwareSerialmySerial(7,8);

const int sensor_pin = A1;
```

```
int pin_out = 9;
dht DHT;
int c=0;

void setup()
{
pinMode(2, INPUT);
pinMode(3, OUTPUT);
pinMode(9, OUTPUT);
}
void loop()
{
if (digitalRead(2) == HIGH)
{
digitalWrite(3, HIGH);
delay(10000);
digitalWrite(3, LOW);
delay(100);
}
Serial.begin(9600);
delay(1000);
DHT.read11(dht_apin);
float 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)

{

while(m<40)

{

digitalWrite(pin_out,HIGH);

sensor_analog = analogRead(sensor_pin);

moisture_percentage = ( 100 - ( (sensor_analog/1023.00) * 100 ) );

m=moisture_percentage;

delay(1000);

}

digitalWrite(pin_out,LOW);

}

if(c>=0)

{

mySerial.begin(9600);

delay(15000);
```

```
Serial.begin(9600);
delay(1000);
Serial.print("\r");
delay(1000);
Serial.print("AT+CMGF=1\r");
delay(1000);
Serial.print("AT+CMGS=\"+XXXXXXXXXX\"\r");
delay(1000);
Serial.print((String)"update>"+(String)"Temprature="+t+(String)"Humidity="+h+(String)"Moisture="+m);
delay(1000);
Serial.write(0x1A);
delay(1000);
mySerial.println("AT+CMGF=1");
delay(1000);
mySerial.println("AT+CMGS=\"+XXXXXXXXXX\"\r");
mobile number
delay(1000);
mySerial.println((String)"update-
>"+(String)"Temprature="+t+(String)"Humidity="+h+(String)"Moisture="+m);
mySerial.println();
delay(100);
Serial.write(0x1A);
delay(1000);
c++;
```

```
}

}
```



HC-05
STATE
RXD
TXD
GND
VCC
WAKEUP
AO DO GND VCC
FC-28
RESET
ICSP2
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX▶1
RX◀0
DIGITAL (PWM=~)
L
TX
RX
UNO
Arduino™
ON
ICSP
IOREF
RESET
3V3
5V
GND
GND
VIN
POWER
A0
A1
A2
A3
A4
A5
ANALOG IN