Sprint1

Team ID	PNT2022TMID02630
Project Name	Hazardous Area Monitoring for Industrial Plant powered by IoT

Creating a Code for Connecting Sensor and Arduino:

Code:

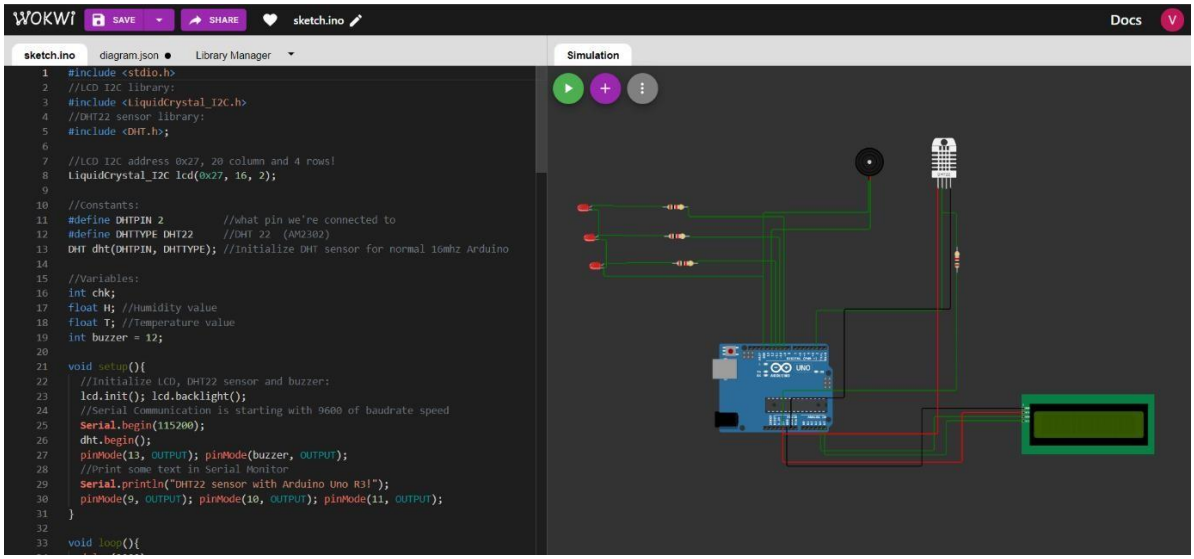
```
#include <stdio.h>
//LCD I2C library:
#include <LiquidCrystal_I2C.h>
//DHT22 sensor library:
#include <DHT.h>;

//LCD I2C address 0x27, 20 column and 4
rows! LiquidCrystal_I2C lcd(0x27, 16, 2);

//Constants:
#define DHTPIN 2

//what pin we're connected to

#define DHTTYPE DHT22

//DHT 22  (AM2302)
DHT dht(DHTPIN, DHTTYPE);
//Initialize DHT sensor for normal 16mhz Arduino

//Variables:
int chk;
float H; //Humidity value
float T; //Temperature
value int buzzer = 12;

void setup(){
 //Initialize LCD, DHT22 sensor and buzzer:
```

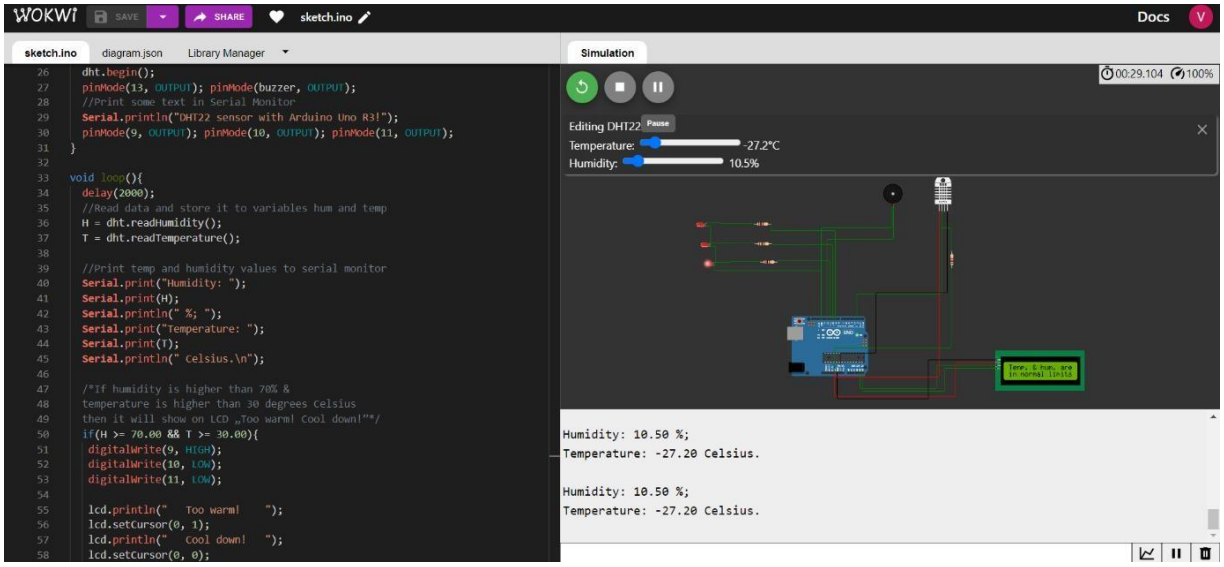
```
lcd.init();
lcd.backlight();

//Serial Communication is starting with 9600 of baudrate

speed Serial.begin(115200);

dht.begin();

pinMode(13, OUTPUT);

pinMode(buzzer, OUTPUT);

//Print some text in Serial Monitor Serial.println("DHT22 sensor with Arduino Uno R3!");
pinMode(9, OUTPUT); pinMode(10, OUTPUT); pinMode(11, OUTPUT);

 }


 void loop(){

 delay(2000);

//Read data and store it to variables hum and

temp H = dht.readHumidity();

   T = dht.readTemperature();

//Print temp and humidity values to serial

monitor Serial.print("Humidity: ");

Serial.print(H);

Serial.println(" %; ");

Serial.print("Temperature: ");

Serial.print(T);

Serial.println(" Celsius.\n");


/*If humidity is higher than 70% &

temperature is higher than 30 degrees

Celsius then it will show on LCD „Too warm!

Cool down!”*/ if(H >= 70.00 && T >= 30.00){

digitalWrite(9,HIGH

digitalWrite(10,LOW);

digitalWrite(11,LOW)
```

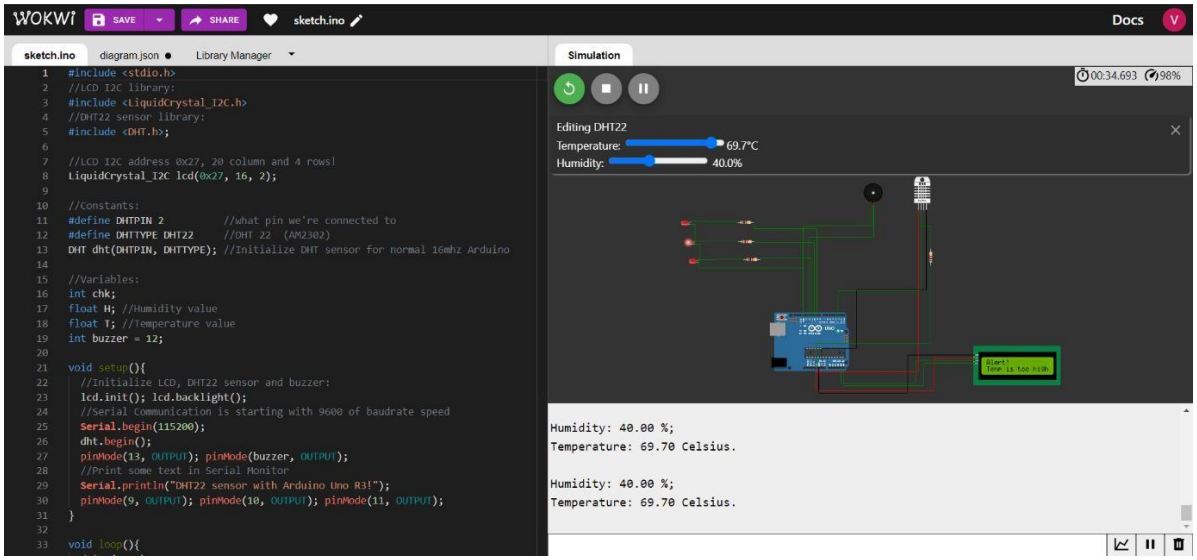
```
lcd.println(" Too warm! ");
lcd.setCursor(0, 1);
lcd.println(" Cool down! ");
lcd.setCursor(0, 0);

digitalWrite(buzzer, 1);
tone(buzzer, 900, 100);
delay(400);
digitalWrite(buzzer, 0); tone(buzzer,900,100);
delay(400);
digitalWrite(buzzer, 1); tone(buzzer,900,100);
delay(400);
digitalWrite(buzzer, 0); tone(buzzer,900,100);
delay(400);
}else{
/*If humidity is lower than 70% &
temperature is lower than 30 degrees
Celsius then it will show on LCD „Temp. &
hum. are in normal limits”*/

digitalWrite(9, LOW);
digitalWrite(10, LOW);
digitalWrite(11, HIGH);

lcd.println("Temp. & hum. are");
lcd.setCursor(0, 1);
lcd.println("in normal limits");
lcd.setCursor(0, 0);

digitalWrite(buzzer, 0);

  }

/*If either humidity is lower than 70%, but temperature is higher than 30 degrees Celsius,
then it will show on LCD „Be ware! Temp. too high”
or humidity is higher than 70%, but temperature is
lower than 30 degrees Celsius, then it will show on
LCD „Be ware! Hum. too high”*/ if(H < 70.00 && T
>= 30.00){
```

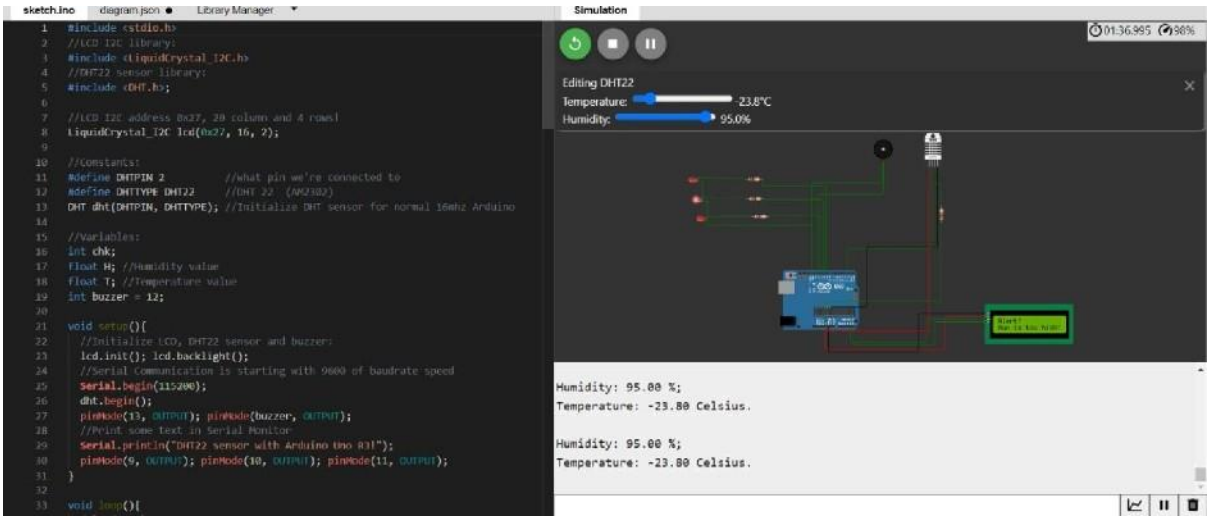
```
digitalWrite(9, LOW);

digitalWrite(10, HIGH);

digitalWrite(11, LOW);

lcd.println("Be ware!");
lcd.setCursor(0, 1);
lcd.println("Temp. too high! ");
lcd.setCursor(0, 0);

digitalWrite(buzzer, 1); tone(buzzer,400,400);
delay(400);
digitalWrite(buzzer, 0);
tone(buzzer, 400, 400);
delay(400);
}
if(H >= 70.00 && T < 30.00){
digitalWrite(9, LOW);
digitalWrite(10, HIGH);
digitalWrite(11, LOW);

lcd.println("Be ware!");
lcd.setCursor(0, 1);
lcd.println("Hum. too high! ");
lcd.setCursor(0, 0);

digitalWrite(buzzer, 1);
tone(buzzer, 400, 400);
    delay(400);
     digitalWrite(buzzer, 0); t

     one(buzzer, 400, 400);

     delay(400);
   }
 }
```

OUTPUT:


WOKWI
SAVE
SHARE
sketch.ino
Docs
sketch.ino
diagram.json
Library Manager
Simulation
#include <stdio.h>
//LCD I2C library:
#include <LiquidCrystal_I2C.h>
//DHT22 sensor library:
#include <DHT.h>;
//LCD I2C address 0x27, 20 column and 4 rows!
LiquidCrystal_I2C lcd(0x27, 16, 2);
//Constants:
#define DHTPIN 2 //what pin we're connected to
#define DHTTYPE DHT22 //DHT 22 (AM2302)
DHT dht(DHTPIN, DHTTYPE); //Initialize DHT sensor for normal 16mhz Arduino
//Variables:
int chk;
float H; //Humidity value
float T; //Temperature value
int buzzer = 12;
void setup(){
//Initialize LCD, DHT22 sensor and buzzer:
lcd.init(); lcd.backlight();
//Serial Communication is starting with 9600 of baudrate speed
Serial.begin(115200);
dht.begin();
pinMode(13, OUTPUT); pinMode(buzzer, OUTPUT);
//Print some text in Serial Monitor
Serial.println("DHT22 sensor with Arduino Uno R3!");
pinMode(9, OUTPUT); pinMode(10, OUTPUT); pinMode(11, OUTPUT);
}
void loop(){


WOKWI
SAVE
SHARE
sketch.ino
Docs
sketch.ino
diagram.json
Library Manager
Simulation
00:29.104
100%
Editing DHT22
Pause
Temperature:
-27.2°C
Humidity:
10.5%
Temp. & hum. are in normal limits
Humidity: 10.50 %;
Temperature: -27.20 Celsius.
Humidity: 10.50 %;
Temperature: -27.20 Celsius.


WOKWI
SAVE
SHARE
sketch.ino
Docs
sketch.ino
diagram.json
Library Manager
Simulation
00:34.693
98%
Editing DHT22
Temperature:
69.7°C
Humidity:
40.0%
Humidity: 40.00 %;
Temperature: 69.70 Celsius.
Humidity: 40.00 %;
Temperature: 69.70 Celsius.


sketch.ino
diagram.json
Library Manager
Simulation
Editing DHT22
Temperature: -23.8°C
Humidity: 95.0%
Humidity: 95.00 %;
Temperature: -23.80 Celsius.
Humidity: 95.00 %;
Temperature: -23.80 Celsius.

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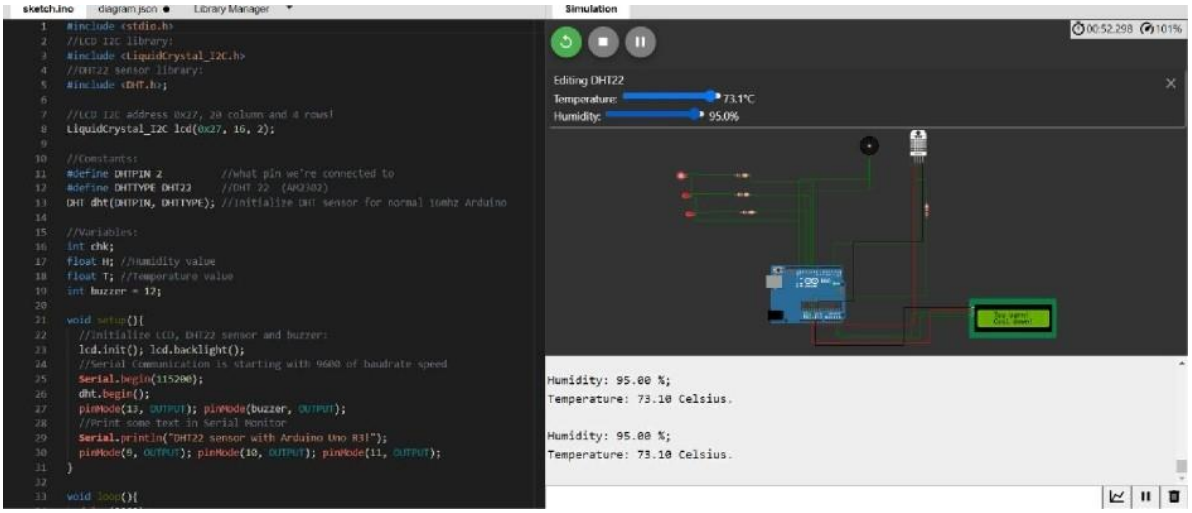
sketch.ino
diagram.json
Library Manager
Simulation
Editing DHT22
Temperature: 73.1°C
Humidity: 95.0%
Humidity: 95.00 %;
Temperature: 73.10 Celsius.
Humidity: 95.00 %;
Temperature: 73.10 Celsius.