Sprint 1

Team ID	PNT2022TMID14654
Project Name	Hazardous Area Monitoring for Industrial Plant powered by IoT

Creating A Code for Connecting Sensor and Arduino:

Code:

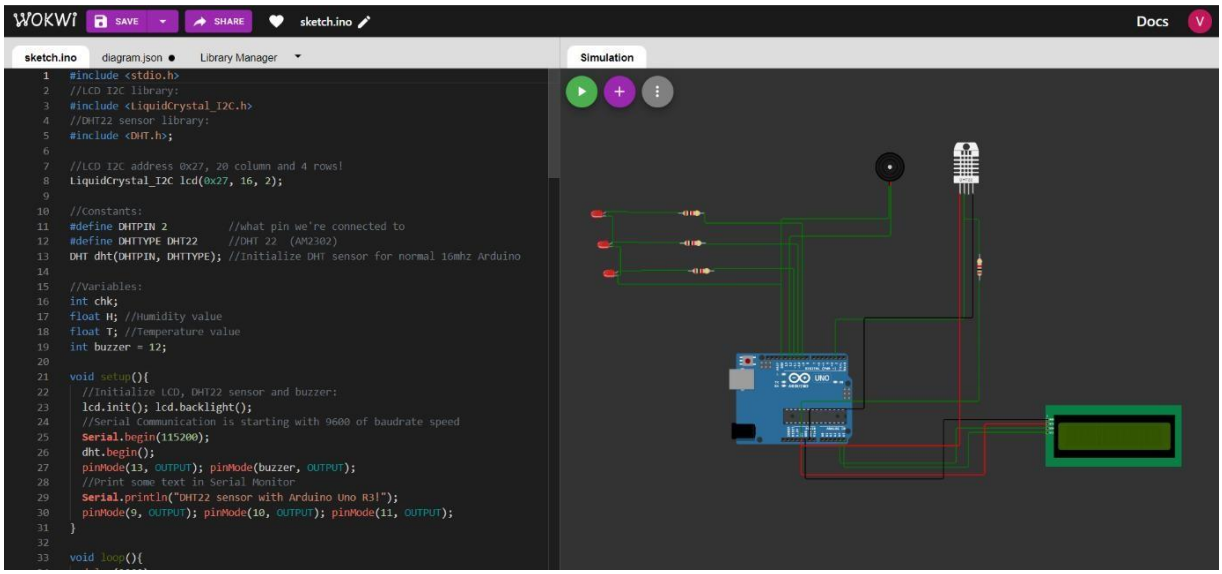
```
#include <stdio.h>

//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:
```

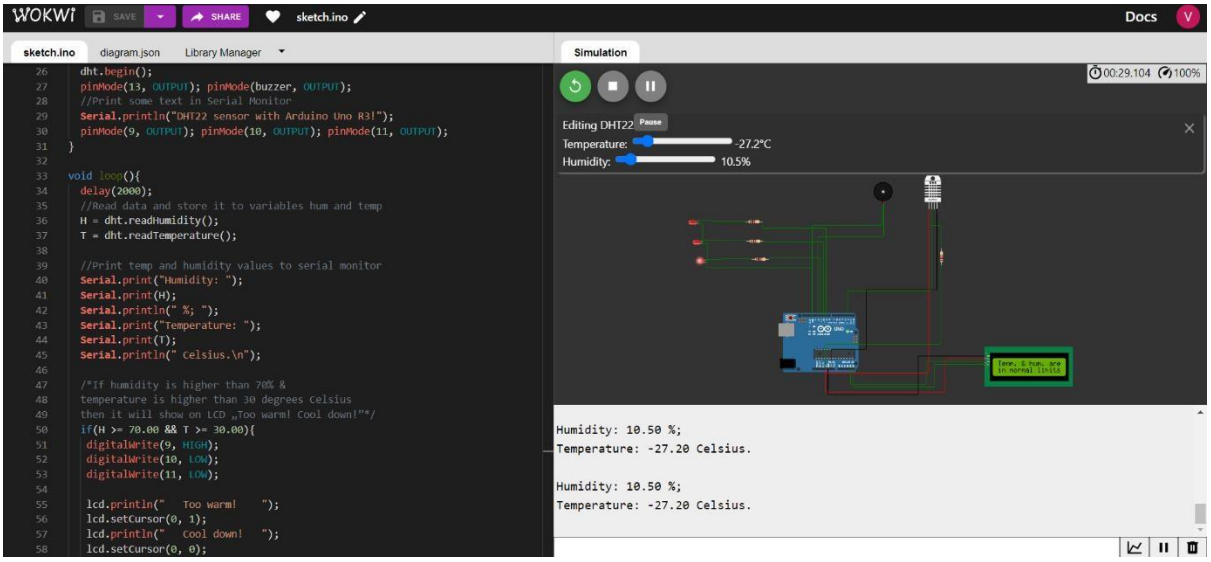
```
 lcd.init(); lcd.backlight();
 //Serial Communication is starting with 9600 of baudrate speed
 Serial.begin(115200); dht.begin(); pinMode(13, OUTPUT);
 pinMode(buzzer, OUTPUT); //Print some text in Serial Monitor
 Serial.println("DHT22 sensor with Arduino Uno R3!"); pinMode(9,
 OUTPUT); pinMode(10, 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!        ");
```

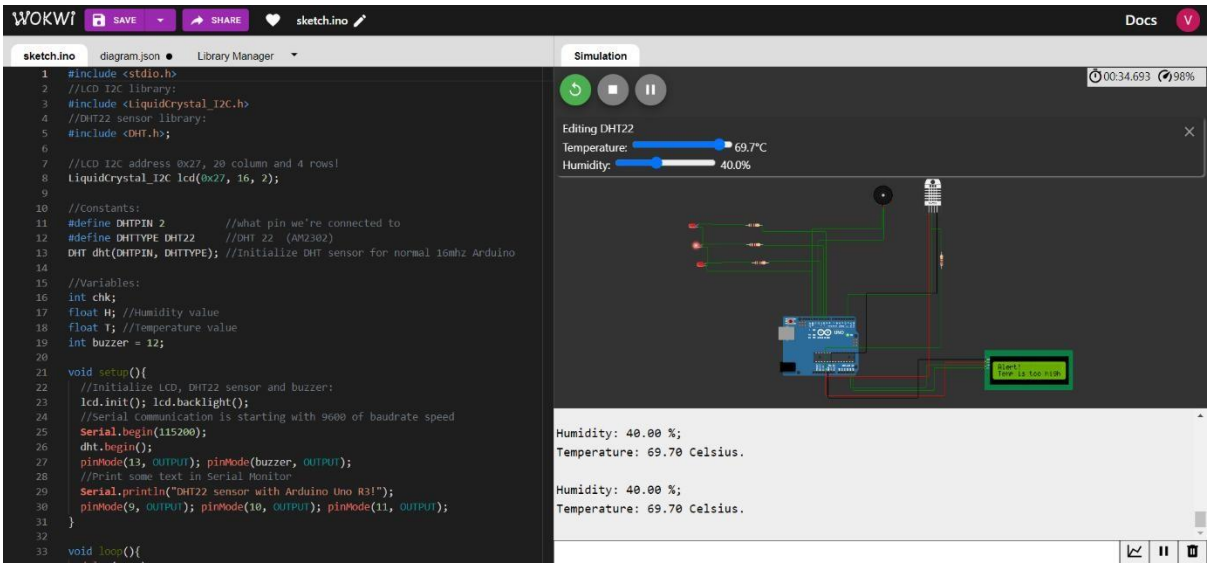
```
 lcd.setCursor(0,                1);
 lcd.println("  Cool  down!  ");
 lcd.setCursor(0, 0);

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 >=
```

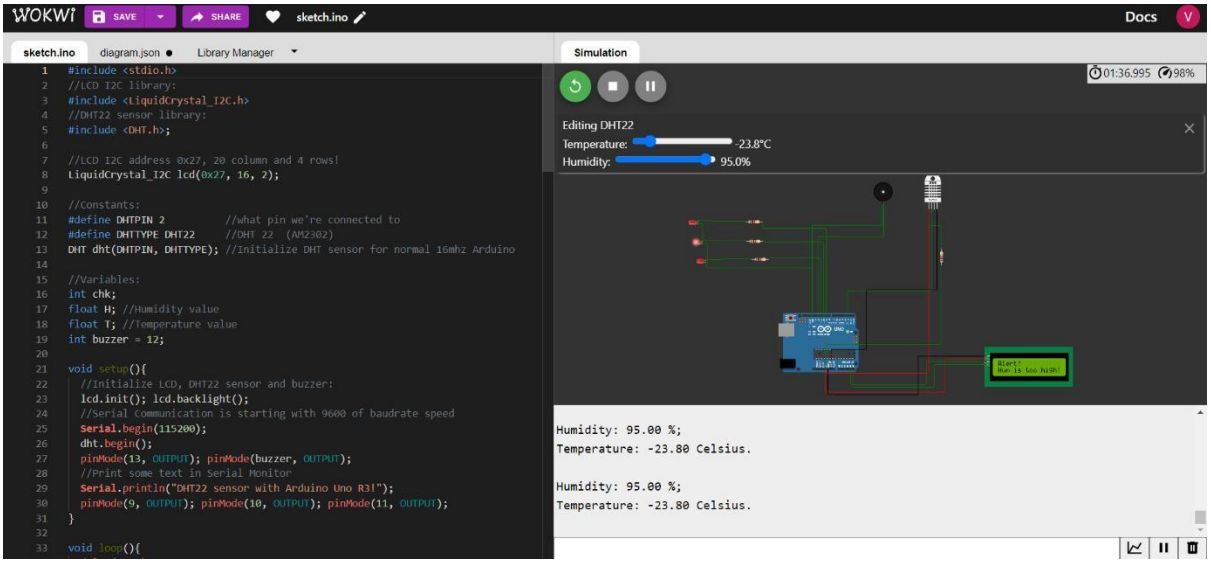
```
 30.00){ digitalWrite(9, LOW); digitalWrite(10, HIGH);
 digitalWrite(11, LOW);

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); tone(buzzer, 400, 400); delay(400);
 }
}
```

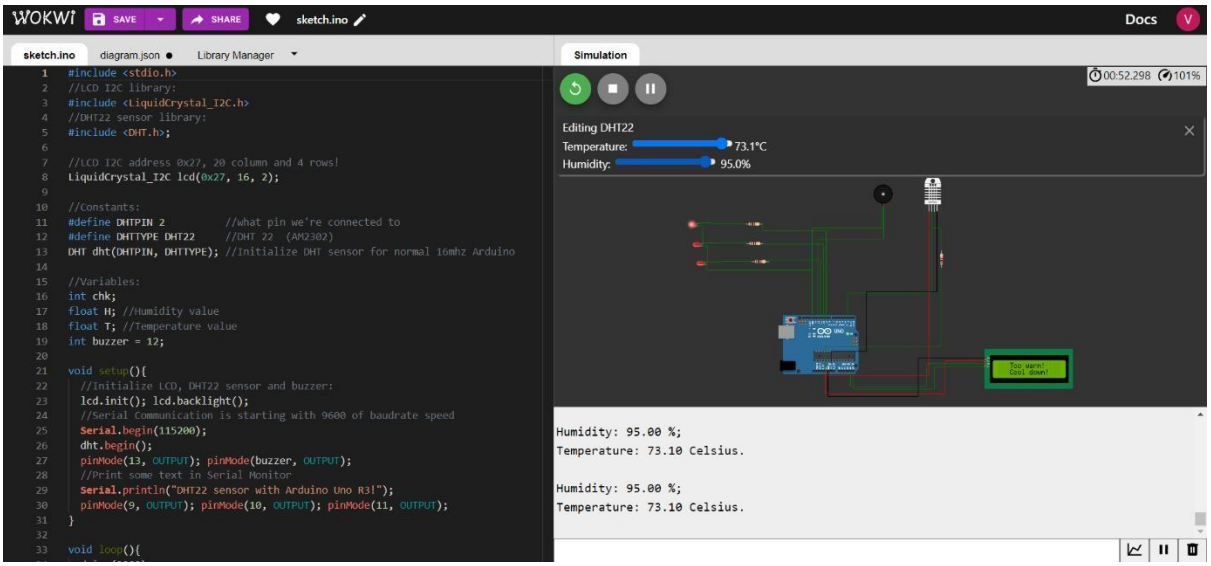
OUTPUT:


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%
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.


WOKWI
SAVE
SHARE
sketch.ino
Docs
sketch.ino
diagram.json
Library Manager
Simulation
01:36.995
98%
Editing DHT22
Temperature:
-23.8°C
Humidity:
95.0%
Alert!
Hum is too high
Humidity: 95.00 %;
Temperature: -23.80 Celsius.
Humidity: 95.00 %;
Temperature: -23.80 Celsius.


WOKWI
SAVE
SHARE
sketch.ino
Docs
sketch.ino
diagram.json
Library Manager
Simulation
00:52.298
101%
Editing DHT22
Temperature:
73.1°C
Humidity:
95.0%
Too warm!
Cool down!
Humidity: 95.00 %;
Temperature: 73.10 Celsius.
Humidity: 95.00 %;
Temperature: 73.10 Celsius.