HKUSPACE Community College
Associate Degree Programme
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Microcontroller

Written Report
group8

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Class:CCIT4064-CL02

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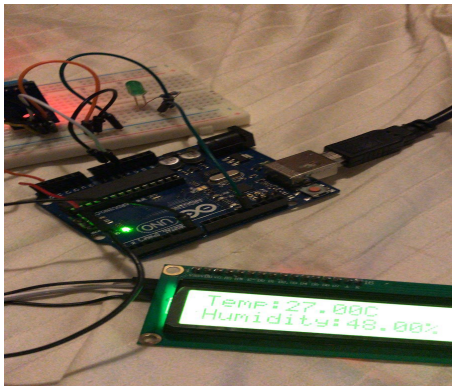
Background information of the proposed applications:

Temperature and humidity sensor for pet is using a sensor to check the Temperature and humidity of the pets box and make sure that the pets can live in a suitable area.If the Temperature and humidity are not suitable for the pets,its may get sick or dead.

Photo capture of the real life application:

Which one on the left side is a Temperature and humidity sensor,when you put it on the Pet Box,it will sensing the Temperature and humidity of the pets box and print it in the Screen to let our check the Temperature and humidity is that suitable the pets.

Our applications:



Our applications also have a sensor to check the Temperature and humidity of the pets box.But our special is the user can set the limit of suitable Temperature and humidity for the pets.If the Temperature or humidity is over or lower than the limit,our sensor will turn on the lights to let the users know the Temperature and humidity have a change.It can let the user know the Temperature and humidity change more easy.

Kwan Chung Yin(20028288)50%	-Written report:compare the real life application and breadboard view of our application -Written report:Objectives -Written report:Methodology -Testing our application -PowerPoint
Yu Siu Chung Brian(20027551)50%	-Code of our application -Breadboard of our application -written report:Discussions -Written report:Conclusion -PowerPoint

Objectives:

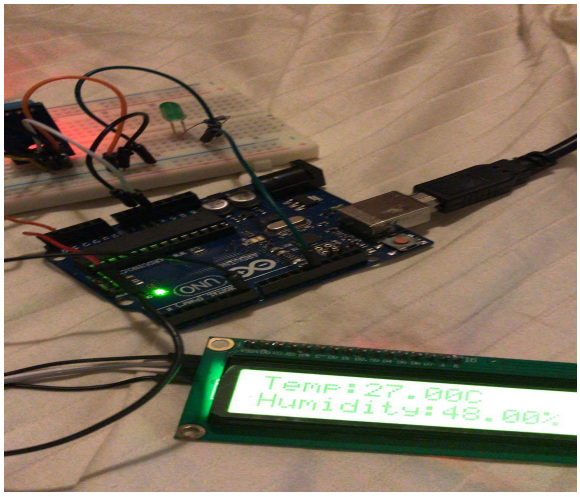
Our Objectives is let user know the Temperature and humidity change more easy because of giving more signal to user,to reduce the risk of the pets dead or sick by a reason of the Temperature and humidity.

Methodology :

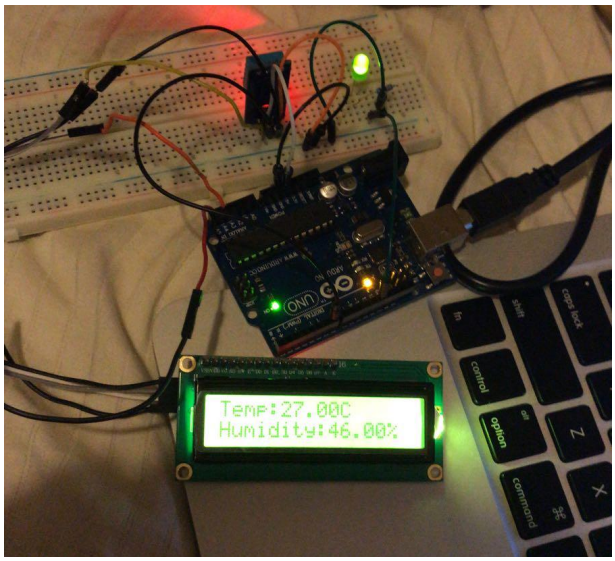
We are using Arduino to Design and development of our application and hard make our application and test it that work.

Workflow diagram

Put the sensor in where you want :



If the Temperature or humidity is over or lower than the limit :RED LED lights



Lists of component:

1.1 x Arduino UNO R3 Board

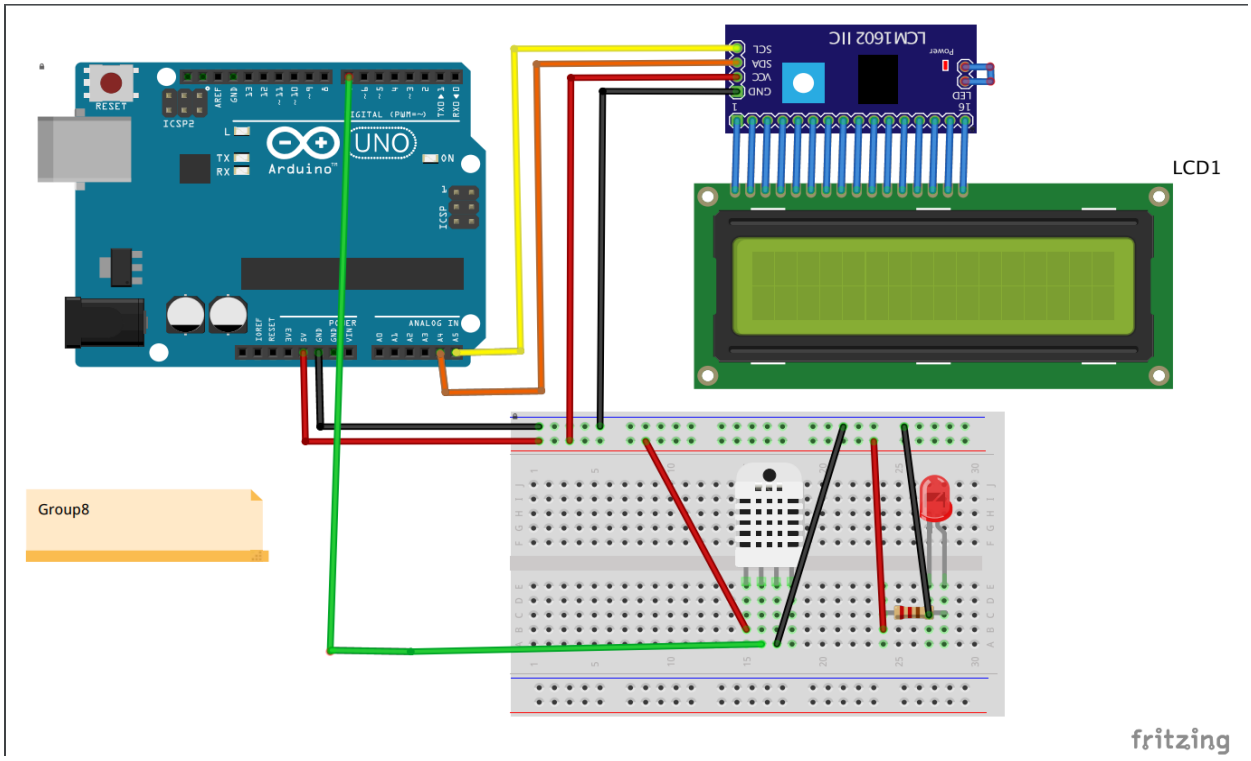
2.1 x I2C LCD

3.1 x USB cable

4.1 x pack of connector wires

5.1 x DHT11 sensor 6.1 x 220 Ω Resistor (or similar Ω) 7.1 x LED 8.1 x Breadboard

Breadboard diagram for the application using Fritizing:



Discussions :

We are difficult to find a limit of the sensor because the Temperature and humidity are also change,so we set a limit area to reduce the opportunity of the wrong message of the senor.If we can have a sprinklers and warm tube,i strongly believe that our group can do a sensor which is not only check the Temperature and humidity.Having a sprinklers and warm tube,the sensor can keep the Temperature and humidity of the pets box automatically.It’s reduce the risk of the pet dead and sick.

Conclusion:

The user can using our sensor to reduce the risk of the pet dead and sick by a reason of monito

the Temperature and humidity.it’s will let his life more easy.

(478 words)

References:

https://learn.adafruit.com/tmp36-temperature-sensor/using-a-temp-sensor

https://www.tutorialspoint.com/arduino/arduino_humidity_sensor.htm

Appendix - Programming codes of our project:

```
#include<dht.h>
#include<LiquidCrystal_I2C.h>
#define I2C_ADDR 0x27
#define BACKLIGHT_PIN 3
#define En_pin 2
#define Rw_pin 1
#define Rs_pin 0
#define D4_pin 4
#define D5_pin 5
#define D6_pin 6
#define D7_pin 7

LiquidCrystal_I2C lcd(I2C_ADDR,En_pin,Rw_pin,Rs_pin,D4_pin,D5_pin,D6_pin,D7_pin);
dht DHT;
const int led= 13;
#define DHT11_PIN 7

void setup(){
  Serial.begin(9600);
   lcd.begin (16,2);
   lcd.setBacklightPin(BACKLIGHT_PIN,POSITIVE);
   lcd.setBacklight(HIGH);
   lcd.home ();
   pinMode(led,OUTPUT);
}
void loop()
{
lcd.clear();
lcd.setCursor(0,0);

  int chk= DHT.read11(DHT11_PIN);
  lcd.print ("Temp:");
  lcd.print (DHT.temperature);
```

```
 lcd.print ("C");
 lcd.setCursor(0,1);
 lcd.print ("Humidity:");
 lcd.print (DHT.humidity);
 lcd.print ("%");
 delay(1000);
 if(DHT.temperature>27){
 digitalWrite(led,HIGH);
 delay(1000);}
 else;{
 digitalWrite(led,LOW);
 delay(1000);}
if(DHT.temperature<19){
 digitalWrite(led,HIGH);
 delay(1000);}
 else;{
 digitalWrite(led,LOW);
```