**NAMES: Amour De Dieu IHANGANE**

**REG No:21RP00910**

**CLASS:EAT B**

**SAFE AMBIENT TEMPERATURE ROOM PROJECT**

There many places where air conditioning is needed and applied, where you operate the switch to open air conditioners and fan to decrease the temperature when it is rising and you come back to switch it off when the temperature is normal then.

But, when you want to make this automatic so that when the temperature increases to abnormal level, the fan or air conditioners turn themselves on automatically. And when ambient temperature decreases back to the normal level, those cooling components turn themselves off automatically.

To achieve this, you can use this project whith simple and cheap materials which is going to be listed down here;

List of materials to be used:

1.Arduino uno board

2.temperature sensor

3.fan

4.jumper wires

5.bread board

6.lcd

**1.Arduino uno board**

This the programmable microcontroller, and it is main component which receives the source code and give the output according to the output of the sensor.

**2.Temperature sensor**

**T**his is other main tool which senses the ambient temperature of the room so that when the temperature comes to abnormal level, Arduino will read it and gives output which turns on the fan.

**3.Fan**

This is the load in this circuit, when the ambient temperature is increased, the is turned on by the arduino’s signal`

**4.Jumper wires**

These are wires which are used to connect the parts of the circuit components to pass the signal in the circuit.

**5.Bread board**

This is the component with pin holes where the circuit is built.

**6.lcd**

This is the screen to show temperature variations’

With this components you can build your circuit.

Down here there is source code which is applied in Arduino after connecting the circuit with the lcd to shows the temperate variations:

#include <LiquidCrystal.h>

const int rs = 13, en = 12, d4 = 11, d5 = 10, d6 = 9, d7 = 8;

LiquidCrystal lcd(rs, en, d4, d5, d6, d7);

int sensor=A0; //sensor is connected to A0 analog pin

int fan=5;// fan is connected to 5 digital pin

void setup() {

lcd.begin(16, 2);

pinMode(sensor,INPUT);

pinMode(fan,OUTPUT);

;

Serial.begin(9600);

}

void loop() {

// measure the temperature and store it in a variable called "temp"

int temp = analogRead(A0); // assuming the temperature sensor is connected to analog pin A0

// convert the analog reading to voltage

float voltage = temp \* 5.0 / 1023.0;

// convert the voltage to temperature in degrees Celsius

float celsius = (voltage ) \* 100.0;

// display the temperature on the Serial monitor

Serial.print("\n");

Serial.print("TEMPERATURE=");// print the text "Temperature:"

Serial.print(celsius);// print the temperature in degrees Celsius

Serial.print("\*C");// print the unit "C" for Celsius

if(celsius>=27)

{

digitalWrite(fan,HIGH);

}

else

{

digitalWrite(fan,LOW);

}

delay (1000);

}