Date:25.10.2022
Team I'd:PNT2022TMID36755
Project Name: IOT based smart crop protection system for agriculture

```
#include <LiquidCrystal.h>

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

float temp; int
tempPin = A1; int
relayPin = 8;
int ledPin = 13;
int pirPin = 7;            int
pirStat = 0;
#define fan 9

void setup(){
pinMode(ledPin, OUTPUT);
pinMode(pirPin, INPUT);
Serial.begin(9600);
pinMode(fan, OUTPUT);
pinMode(relayPin, OUTPUT);

  lcd.begin(16, 3);

  lcd.setCursor(1, 1);
lcd.print("The Fantastic Four");
delay(1000);    lcd.clear();
lcd.setCursor(3,0);
lcd.print("Smart Power saving
iot");    delay(1000);
lcd.clear();    lcd.print("Lets Get
```

```arduino
Started");    delay(2000);
lcd.clear();

   lcd.print("AUTO TEMPERATURE");
delay(2000);    lcd.clear();


}
void poweronRelay()
 {
   digitalWrite(relayPin, HIGH);
lcd.print("Fan ON");
delay(2000);    lcd.clear();
 }


void poweroffRelay()
 {
   digitalWrite(relayPin, LOW);
analogWrite(fan,0);
lcd.print("Fan OFF");
delay(2000);    lcd.clear();
 }
//only after signal is detected form pir sensor,
//the temp sensor will detect the temp and turn on the motor(fan) void loop()
{
  pirStat = digitalRead(pirPin);
if (pirStat == HIGH) {

   digitalWrite(ledPin, HIGH);
Serial.println("person moved in");
lcd.setCursor(3,0);
lcd.print("Recording");
lcd.setCursor(2, 1);
lcd.print("Temperature..");
```

```arduino
delay(3000);    lcd.clear();
lcd.setCursor(0,2);    temp =
analogRead(tempPin);

   float voltage = temp * 5.0;
voltage /= 1024.0;


   lcd.print(voltage); lcd.println(" volts");


   float temperatureC = (voltage - 0.5) * 100 ;

   lcd.setCursor(0, 0);
lcd.print("Temperature = ");
lcd.setCursor(2,1);
//lcd.print(temp);
   lcd.print(temperatureC); lcd.println(" degrees C");
delay(3000);

   lcd.clear();

   if(temperatureC >= 20)
   {
     poweronRelay();
     if(temperatureC >= 20 && temperatureC <= 25)
     {
       analogWrite(fan,51);
lcd.print("Fan Speed: 20% ");
delay(2000);    lcd.clear();

     }
   else if(temperatureC <= 35)
     {
```

```
    analogWrite(fan,102);
lcd.print("Fan Speed: 40% ");
delay(2000);       lcd.clear();
    }
  else if(temperatureC <= 40)
    {
    analogWrite(fan,153);
lcd.print("Fan Speed: 60% ");
delay(2000);       lcd.clear();
    }
  else if(temperatureC <= 44)
    {
    analogWrite(fan,200);
lcd.print("Fan Speed: 80% ");
delay(2000);       lcd.clear();

    }
  else if(temperatureC >= 45)
    {
    analogWrite(fan,255);
lcd.print("Fan Speed: 100% ");
delay(2000);       lcd.clear();
    }
    }
  else if(temperatureC < 20)
    {
    poweroffRelay();
    }

    }
  else {
```

```
  digitalWrite(ledPin, LOW);

Serial.println("person moved out");

poweroffRelay();

 }


}
```