Assignment -1
Home Automation

```
#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
```

```
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..");
```

```
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();
 }

}
```