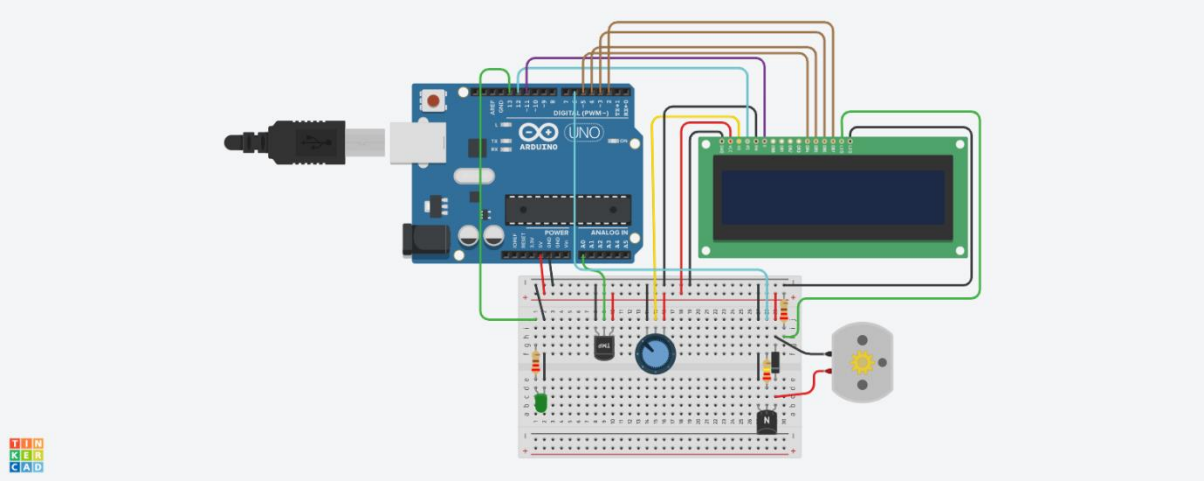
IBM ASSIGNMENT

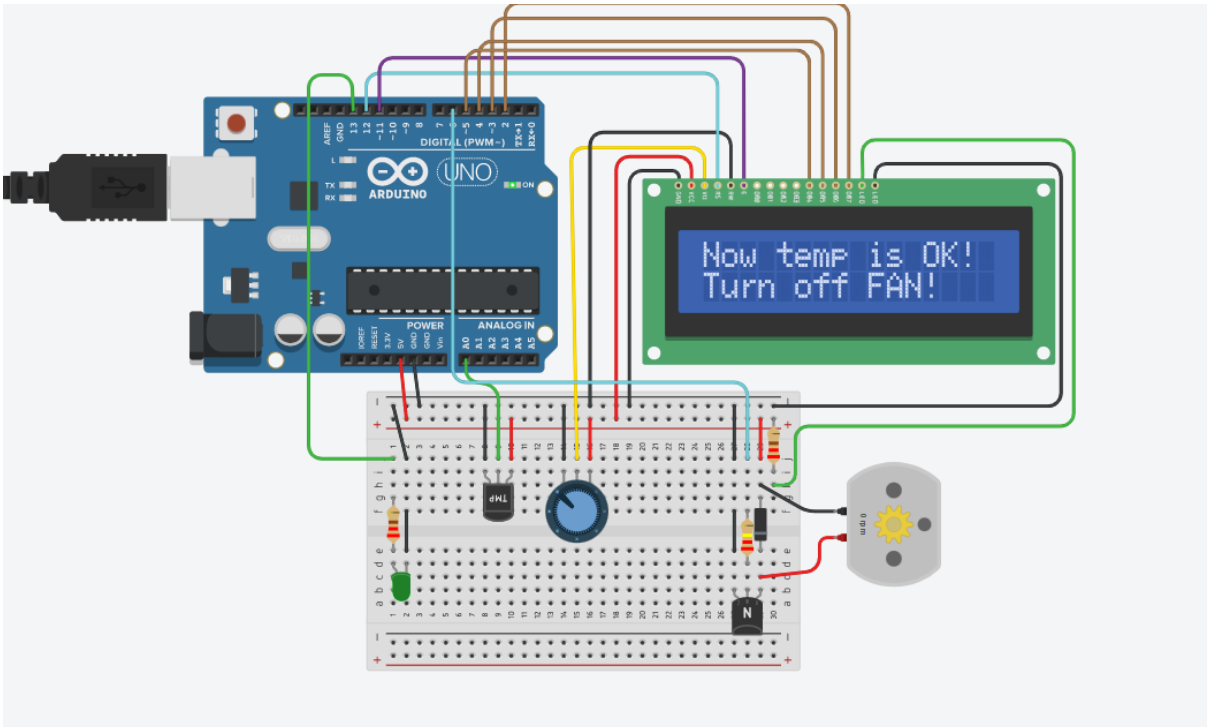
Jermin Job M

950819106309

Before simulation



After simulation



Code

```
 const int temp_trans_pin = A0, Heater_pin = 13, FAN_pin = 6;
  float MinTemp = 20, MaxTemp = 25;
 #include <LiquidCrystal.h>
 LiquidCrystal LCD(12, 11, 5, 4, 3, 2);
void setup() {
   LCD.begin(16, 2);
   pinMode(Heater_pin, OUTPUT);
   pinMode(FAN_pin, OUTPUT);

   LCD.print("Room temp(C):");
   LCD.setCursor(2,1);
   LCD.print(MinTemp); LCD.print("-");LCD.print(MaxTemp);

   delay(2000);
}

void loop() {

  float Eqv_volt, SensorTemp;
  Eqv_volt = analogRead(temp_trans_pin) * 5.0 / 1023;
  SensorTemp = 100.0 * Eqv_volt-50.0;
   LCD.clear();
   LCD.print("Sensor reading:");
   LCD.setCursor(2,1);
   LCD.print(SensorTemp); LCD.print(" C");

   delay(2000);
  if(SensorTemp > MaxTemp){
```

```
   LCD.clear();
   LCD.print("temp is HIGHER!");
   LCD.setCursor(0, 1);LCD.print("Turn on FAN!");
   for( int i = 0; i <= 255; i++ ) {
    analogWrite(FAN_pin, i);
    }
    delay(2000);

    LCD.clear();
    LCD.print("Now temp is OK!");
    LCD.setCursor(0, 1);
    LCD.print("Turn off FAN!");
    for( int i = 255; i >= 0; i-- ) {
     analogWrite(FAN_pin, i);
    }
     delay(2000);
    }
else if(SensorTemp < MinTemp){
   LCD.clear();
   LCD.print("temp is LOWER!");//Less than the mini
   LCD.setCursor(0, 1);
   LCD.print("Turn on HEATER!");
 digitalWrite(Heater_pin, HIGH);

   delay(3000);

   LCD.clear();
   LCD.print("Now temp is OK!");
   LCD.setCursor(0, 1);
```

```
    LCD.print("Turn off HEATER!");


    delay(1000);


    digitalWrite(Heater_pin, LOW);
    LCD.clear();
    }
 else if(SensorTemp > MinTemp && SensorTemp < MaxTemp){
   LCD.clear();
    LCD.print("Temp is NORMAL!");LCD.setCursor(2,1);
    LCD.print("Turn off all!");


    delay(1000);
    LCD.clear();
 }
 else {
    LCD.clear();
    LCD.print("Something went");
    LCD.setCursor(2,1); LCD.print("WRONG in the ckt");
    delay(1000);
    LCD.clear();
  }
  delay(1000);
 }
```

Tinkercad link

https://www.tinkercad.com/things/6u6TVn3okiz-ibm/editel?sharecode=mXgTIFpDTsshrXyNAXyxhh_2dB66hMOuTC0PAarjLHo