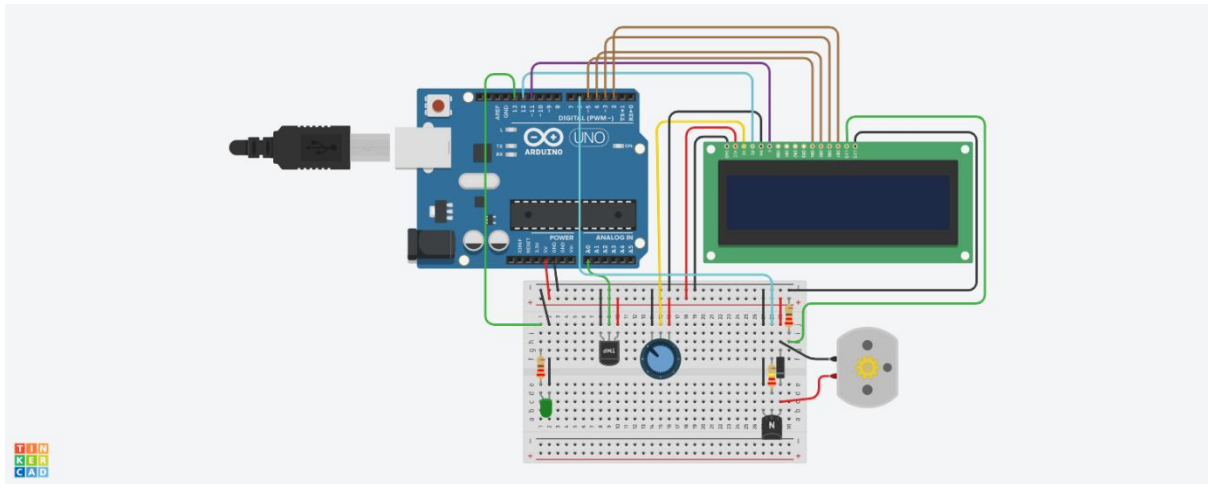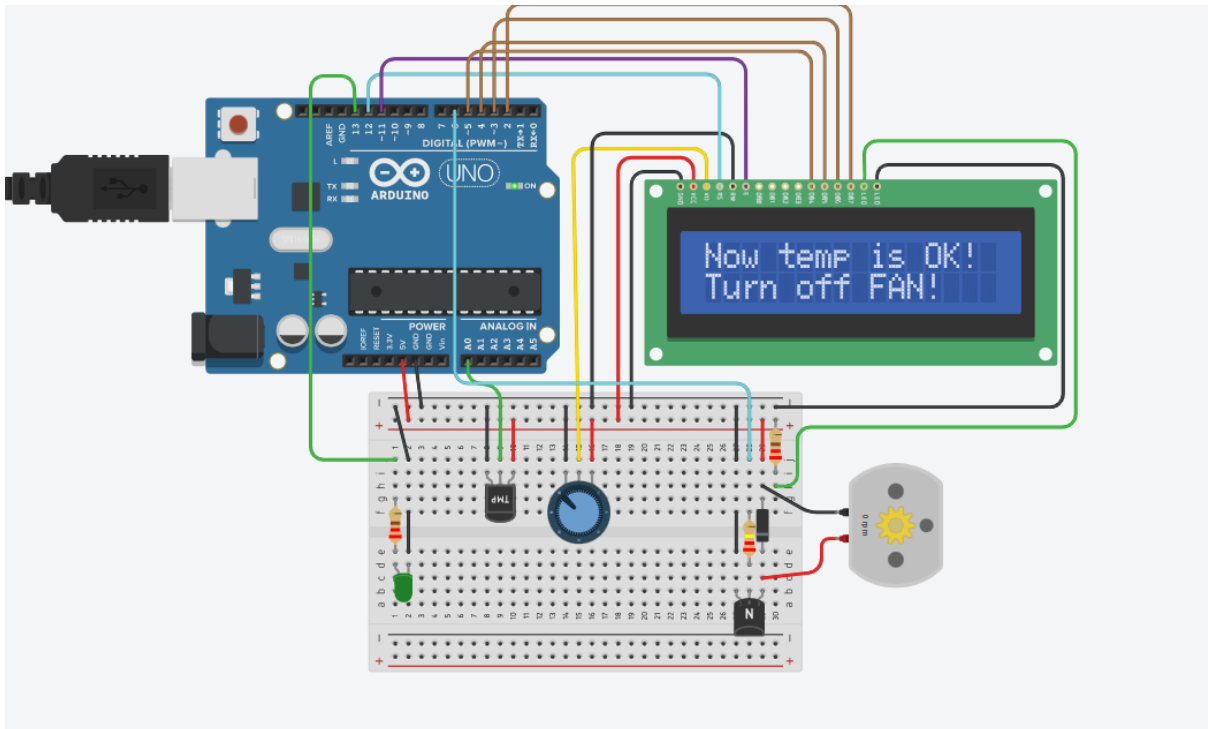# IBM ASSIGNMENT

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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