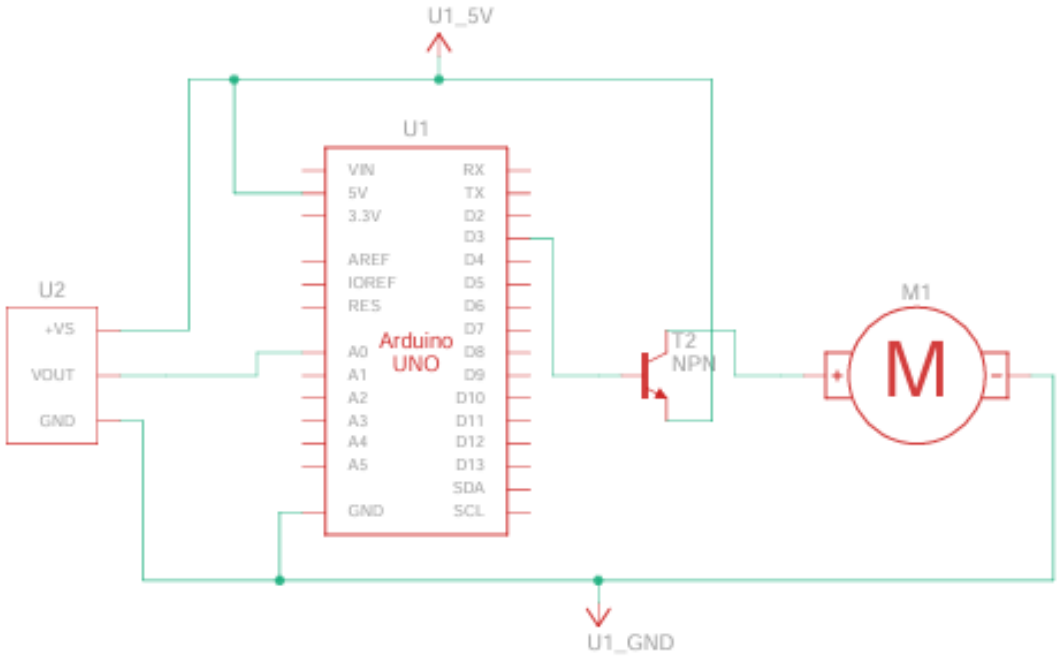
CIRCUIT DIAGRAM:



Ex. No:	Temperature Controlled Fan using Arduino UNO R3
Date:	

Aim:

Design and build a temperature-controlled fan system that adjusts the fan speed based on the room temperature measured by the TMP36 sensor.

Components Required:

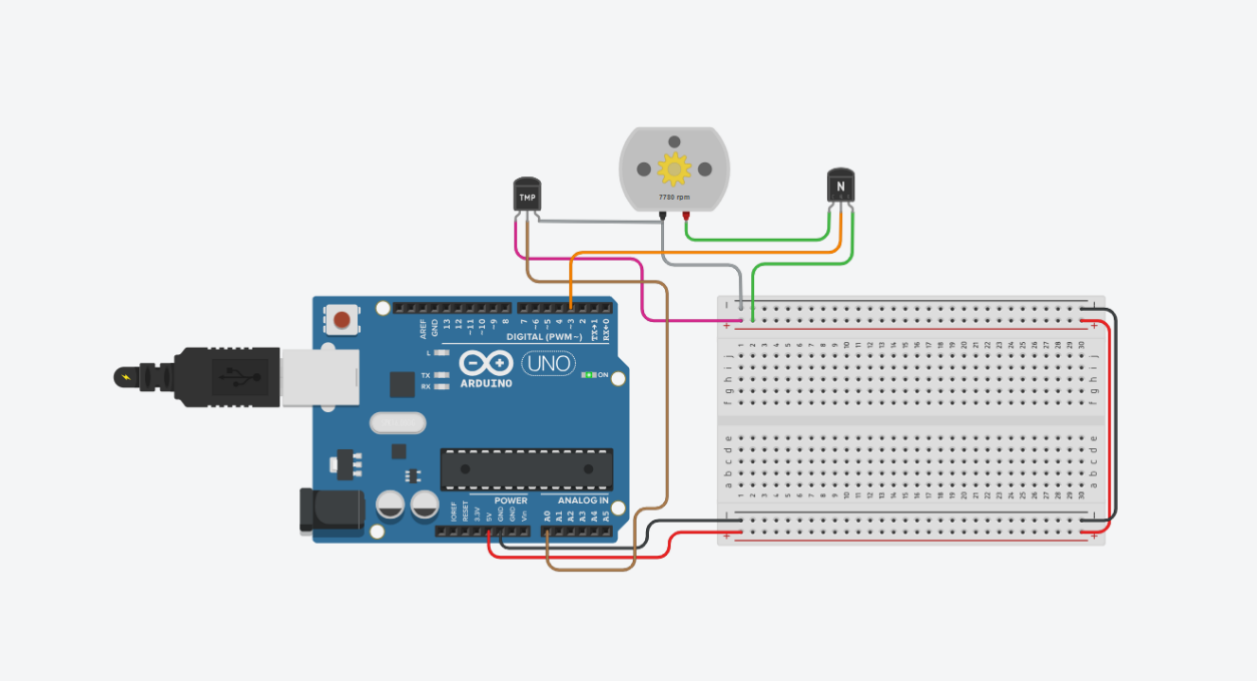
1. Arduino UNO R3
2. TMP36 (Temperature Sensor)
3. NPN transistor (BJT)
4. DC Motor
5. Bread Board
6. Jump Wires

Procedure:

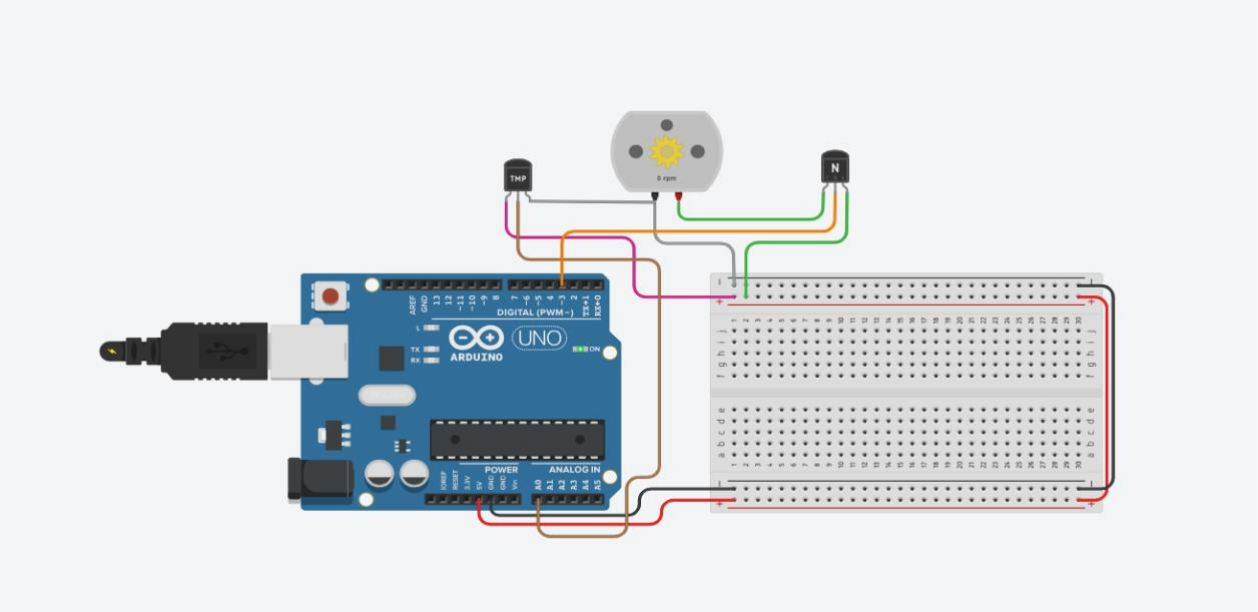
1. Connect Components:
   - Wire the TMP36 sensor and Motor to the Arduino.
   - Connect the NPN transistor to control the motor.
2. Write Arduino Code:
   - Read temperature from the TMP36.
   - Set a threshold temperature.
   - Adjust the motor speed based on the difference.
3. Upload the Code:
   - Write and upload the code to the Arduino.

OUTPUT:

- When temperature is high the RPM (Rotation Per Minute) of Motor is High.



- When temperature is low the RPM of Motor is Low.



4. Test and Calibrate:

- Observe fan speed changes with temperature.

5.Power Up:

- Connect power supply to the Arduino.

Program:

```
#define TEMPERATURE A0
#define MOTOR 3
void setup(){
  Serial.begin(9600);
  pinMode(MOTOR, OUTPUT);
}

int speed_decider(int temp){
  if(temp<20)
    return 0;
  else if(temp>40)
    return 255;
  else
    return map(temp, 20, 40, 0, 255);
}

void loop(){
  int temperature = analogRead(TEMPERATURE);
```

```
temperature = map(temperature, 20, 358, -40, 125);
  Serial.println(speed_decider(temperature));
  analogWrite(MOTOR, speed_decider(temperature));
}
```

Result:

Now the temperature-controlled fan system was designed and the output was verified