Lab 7. Temperature sensor controlled fan

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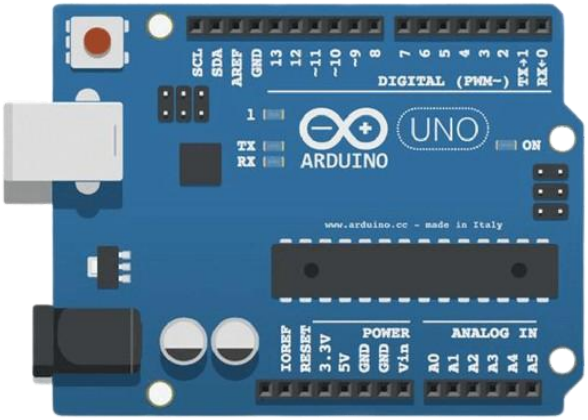
1. Introductio

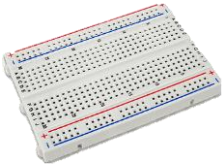
- When the heat comes, you need something to cool you down. This "cool" experiment will help you beat the infernal heat in your home.
- This circuit will start a fan when the temperature exceeds a set program value.

2. Required components

- Arduino Uno R3

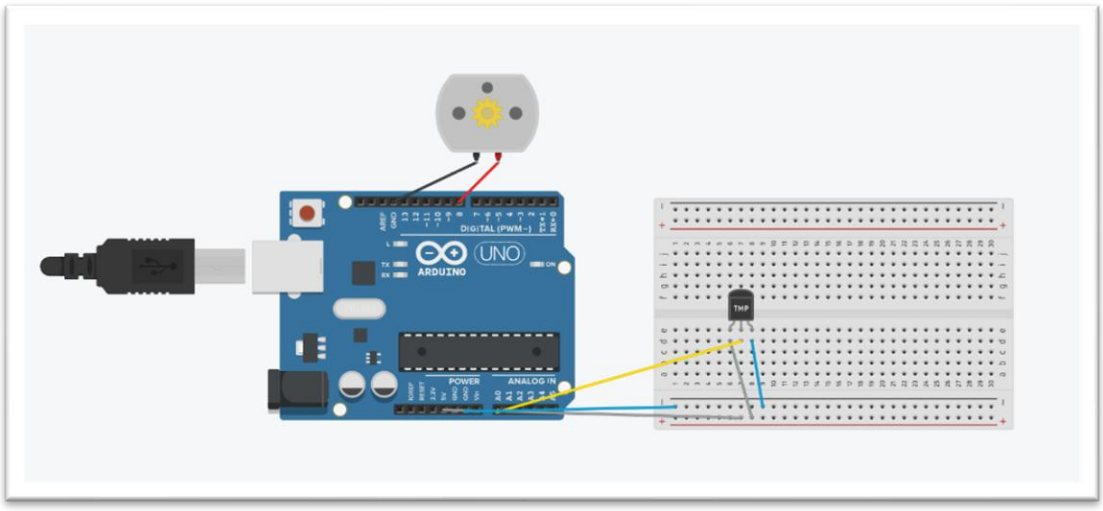


- Electronic components used: Breadboard, Ventilator

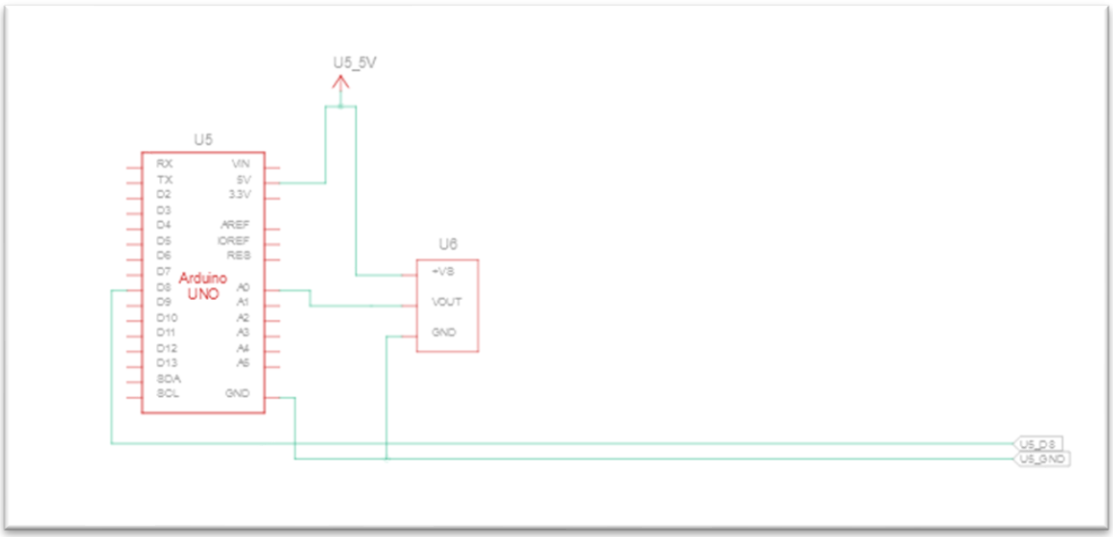


- Sensors: temperature

3. Circuit diagram



4. Wiring diagram



5. How it works

Pasul 1 : Place the components on the work table

Pasul 2 : Connect the "-" wire of the fan to the GND port and the "+" wire to port 8

Pasul 3 : Place the temperature sensor on the breadboard as in the diagram

Pasul 4 : Connect the first pin of the temperature sensor to the 5V port, the middle pin to the A0 port and the last pin to the GND port

Pasul 5 : Write the code in ArduinoIDE, connect the Arduino board to the computer and press "Upload"

- How it works: https:

6. Programming

- Software used: Arduino IDE

```
const int motorPin= 8;
const int tempPin= A0;
int temperature= 0;

void setup()
{
  Serial.begin(9600);
  pinMode(motorPin, OUTPUT);
  pinMode(tempPin, INPUT);
}

void loop()
{
  int sensorValue= analogRead(tempPin);
  temperature= sensorValue * (5.0 / 1023.0) * 100;
  Serial.print("Sensor Value: ");
  Serial.print(sensorValue);
  Serial.print(" - Temperature: ");
  Serial.println(temperature);

  if (analogRead(tempPin)> 167)
  {
    digitalWrite(motorPin, HIGH);
  }
  else
  {
    digitalWrite(motorPin, LOW);
  }
}
```

7. Conclusions

This project demonstrated how a temperature sensor connected to an Arduino Uno board can automatically control a fan. When the temperature exceeds a preset value, the fan activates to cool the space. The project provides a practical solution for temperature management.

8. Bibliographical references

- https://www.etechnophiles.com/7-great-arduino-beginner-projects-with-code-in-2020/
- https://www.tinkercad.com