# Temperature Controlled Fan

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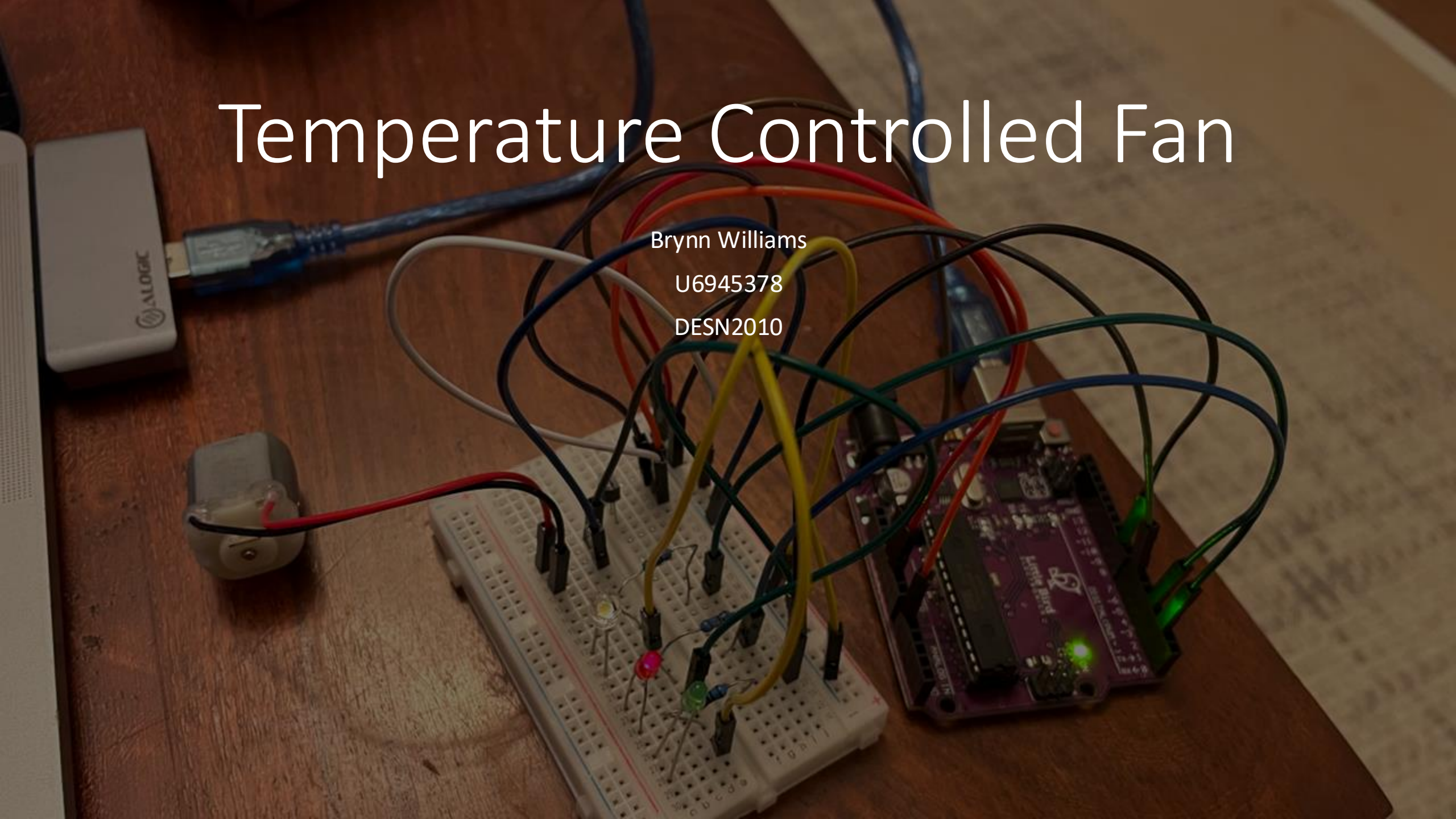
DESN2010



# Initial Ideas

- A light sensor for rooms
- Metal Touch Sensor
- Temperature controlled Fan

# Environmental Inputs

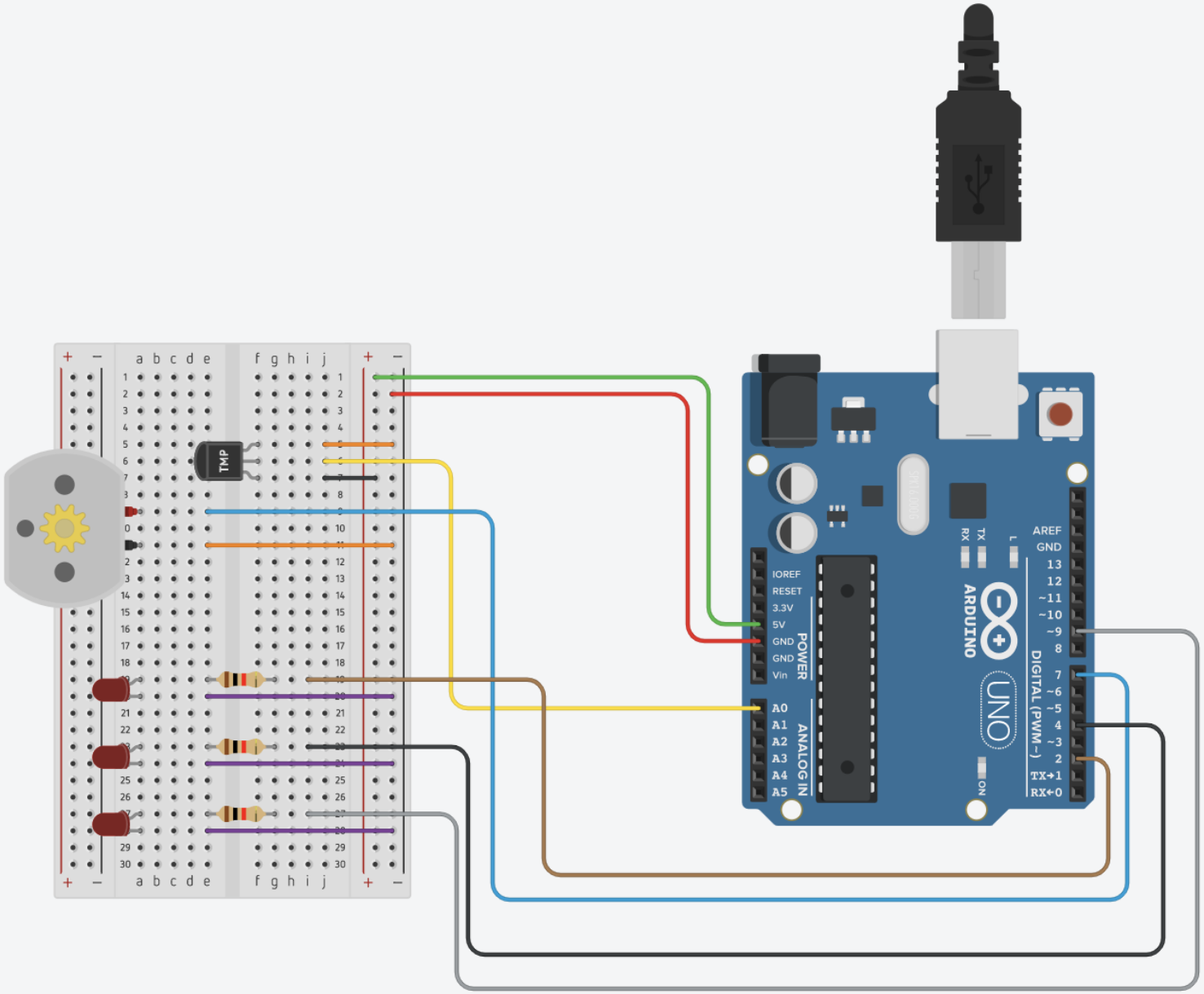
- no control adjustments, optimized fan performance and savings on heating and cooling
- This can be very beneficial for hospitals and retirement homes.
- Another great use for a temperature controlled fan would be for schools

# Code (Also located in .ino file in submission)

```
// Declare all the pins
int temp = A0;
int greenLed = 2;
int redLed = 4;
int fan = 7;
int led = 8;

int thresholdValue = 0;
int celsius = 0;
int fahrenheit = 0;

// Functions for various work
void greenLightOn(){
  digitalWrite(greenLed, HIGH);
}
void greenLightOff(){
  digitalWrite(greenLed, LOW);
}
void redLightOn(){
  digitalWrite(redLed, HIGH);
}
void redLightOff(){
  digitalWrite(redLed, LOW);
}
void fanOn(){
  digitalWrite(fan, HIGH);
}
void fanOff(){
  digitalWrite(fan, LOW);
}
void ledOn(){
  digitalWrite(LED_BUILTIN, HIGH);
}
void ledOff(){
  digitalWrite(LED_BUILTIN, LOW);
}
```

```
void setup()
{
  pinMode(redLed, OUTPUT);
  pinMode(greenLed, OUTPUT);
  pinMode(fan, OUTPUT);
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(temp, INPUT);
  Serial.begin(9600);
}

void loop(){

  // Temperature calculation
  celsius = map(((analogRead(A0) - 20) * 3.04), 0, 1023, -40, 125);
  fahrenheit = ((celsius * 9) / 5 + 32);

  Serial.print(celsius);
  Serial.print(" C : ");
  Serial.print(fahrenheit);
  Serial.println(" F");

  if( celsius<= 20){
    greenLightOn();
    redLightOff();
    fanOff();
    ledOff();
    Serial.println("green light on");
  }
  else if(celsius >= 21 && celsius <= 30){
    greenLightOff();
    fanOn();
    ledOff();
    redLightOn();
    Serial.println("red light on | Fan on");
  }
  else if(celsius > 30){
    redLightOff();
    fanOn();
    ledOn();
    greenLightOff();
    Serial.println("LED On | Fan on");
  }
  else{
    Serial.println("Temperature is Normal");
  }
  delay(1000);
}
```

# Schematic


TMP
ARDUINO
UNO
POWER
ANALOG IN
DIGITAL (PWM~)
IOREF
RESET
3.3V
5V
GND
GND
Vin
A0
A1
A2
A3
A4
A5
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX→1
RX←0
TX
RX
ON

# Video

https://youtu.be/4koKVc71v1c

# Improvements

- I had a few troubles with my project, mainly revolving around my dc motor, I don’t know if it was the motor that didn’t work or if it was my wiring that didn’t make it work. However, the lights to indicate the temperature work quite well

# Bibliography

"Advantages & Disadvantages Of Temperature Controlled Fan". 2013. *Quickchaser9753.Blogspot.Com*. http://quickchaser9753.blogspot.com/2013/06/advantages-disadvantages-of-temperature.html

"Github - KAST-Tech/Temperature-Controlled-Fan: In This Project I Am Going To Discuss About A Simple Project On Arduino UNO-R3. In This Project I Am Going To Show You All Of You A System That Is Temperature Controlled Fan.". 2021. *Github*. https://github.com/KAST-Tech/temperature-controlled-fan#readme

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