Original room temperature indicator

DIY KIT LED Temperature Indicator

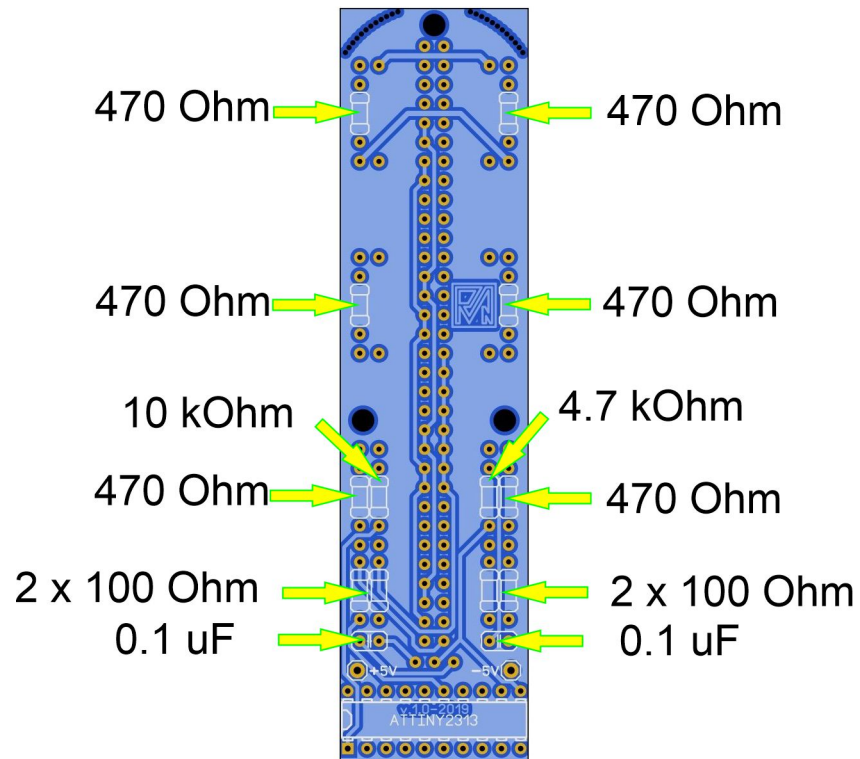A set of parts for self-assembly of a digital indoor LED temperature indicator.

Kit Options.

| Part name	Quantity	Units
Double-sided PCB for the project "Women's whim" (100x100 mm)	1	pcs
Microcontroller ATMEGA8-16PU (programmed and tested)	1	pcs
DS18B20 temperature sensor	1	pcs
Rectangular LEDs 2x5x7mm red for the dial	32	pcs
Rectangular LEDs 2x5x7mm yellow for numbers	12	pcs
Ceramic Capacitor CT4 0.1uF 50V	2	pcs
100 Ω Resistor 0.125w CFR	4	pcs
470 Ω Resistor 0.125w CFR	6	pcs
4.7 kΩ Resistor 0.125w CFR	1	pcs
10 kΩ Resistor 0.125w CFR	1	pcs
USB Type A Connector, 4 pins	1	pcs
Power cable 2x7 / 0.12mm CCA (0.08mm2) OD: 1.6x3.2, transparent 1.0m	1	pcs

Temperature indicator assembly procedure

Initially, it is recommended that components be installed on the underside of the circuit board:

470 Ohm → ← 470 Ohm

470 Ohm → ← 470 Ohm

10 kOhm ↗ ↖ 4.7 kOhm

470 Ohm → ← 470 Ohm

2 x 100 Ohm → ← 2 x 100 Ohm

0.1 uF → ← 0.1 uF

First, we solder the resistors and capacitors (the microcontroller will solder at the very last stage.)
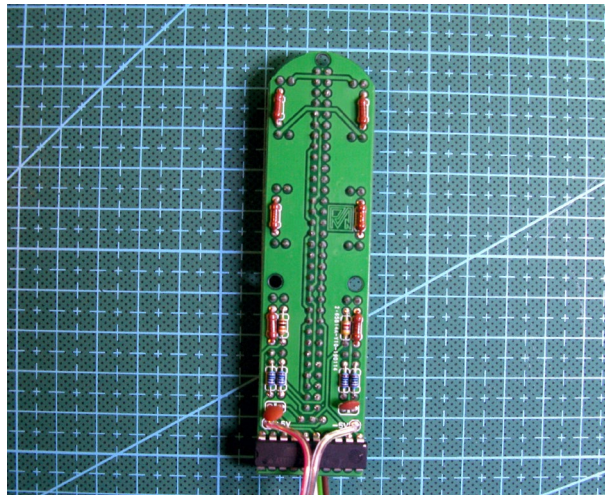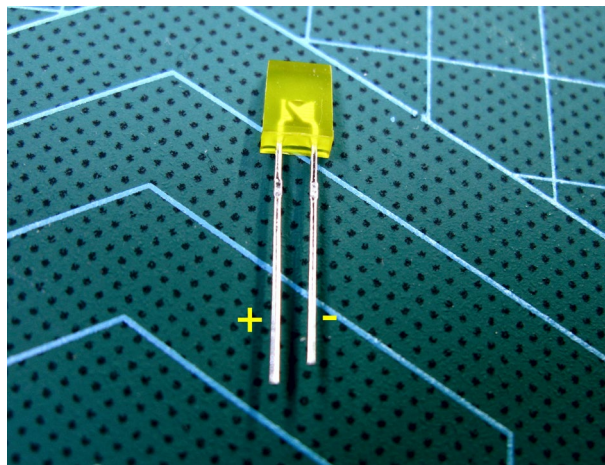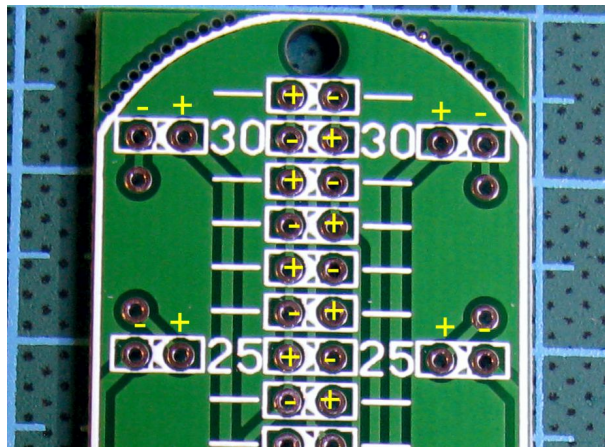
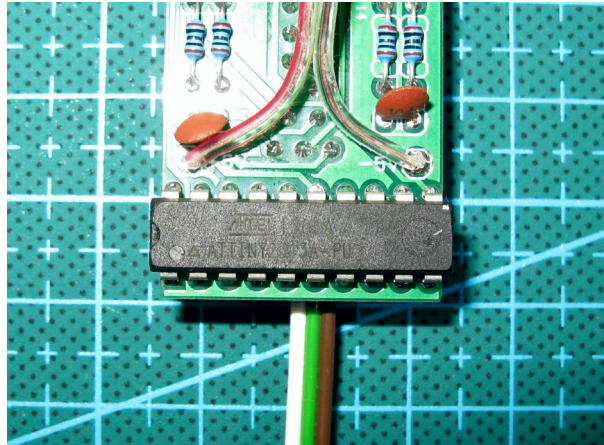After installing the components from the bottom, we go to the top side of the board.

For the temperature indicator, select the red LEDs. For markers of tens of degrees of temperature - yellow LEDs.
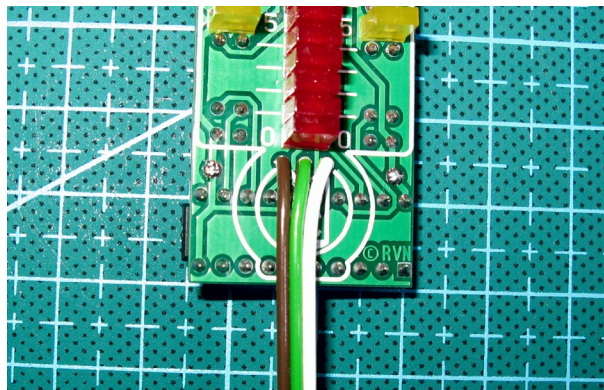
Pay attention to the polarity of the LEDs!

The next step is to solder the microcontroller.
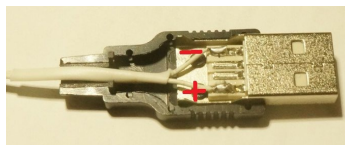
Ukraine, Dnipro – Lysychansk

Connects the DS18B20 temperature sensor using the wires included in the kit (the color of the wire may differ from the photo).
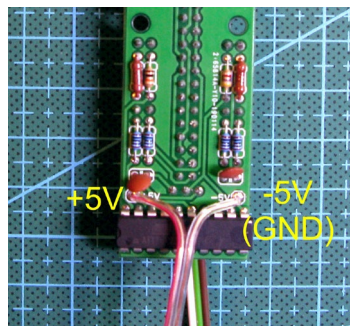
And solder to the circuit board.

And to complete the assembly, we solder the power cable to the USB connector.

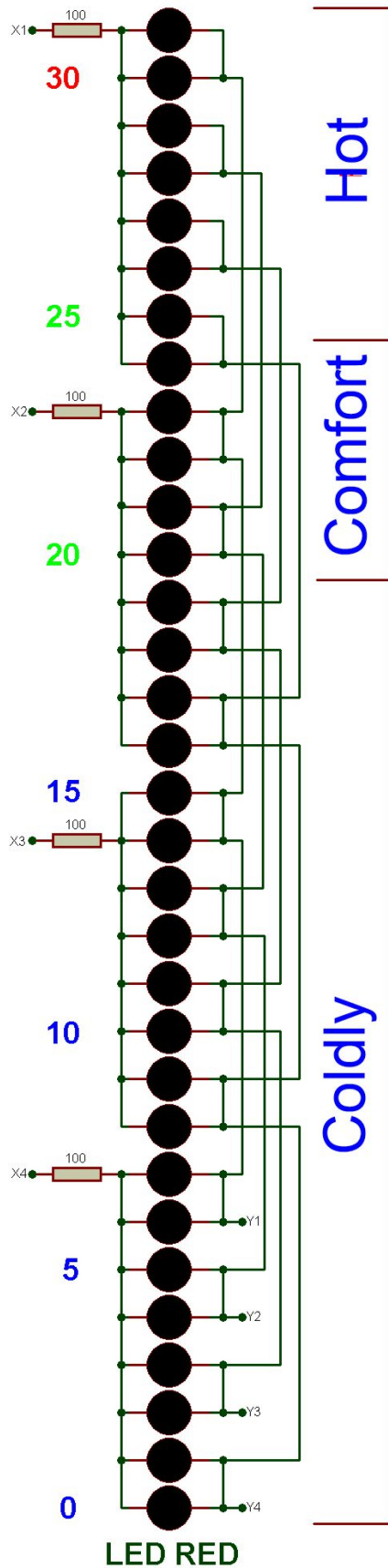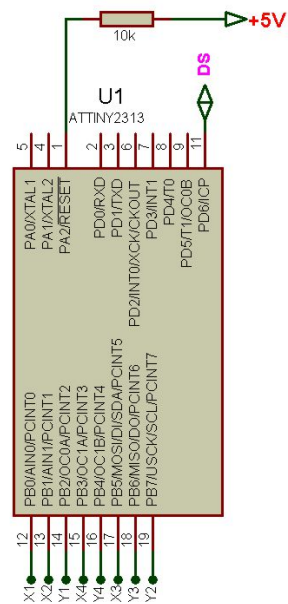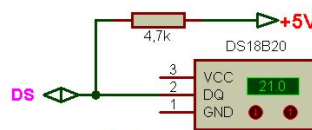
To the PCB solder the power cable

Warning!

Before switching on for the first time, be sure to check that the power is connected correctly. Only after making sure that they are connected correctly, apply power to the temperature indicator!

Linear thermometer

Hot

Comfort

Coldly

30

25

20

15

10

5

0

X1 — 100
X2 — 100
X3 — 100
X4 — 100

Y1
Y2
Y3
Y4

LED RED

MCU

U1
ATTINY2313

10k — +5V

DS

Pins left side (top, numbers 5 4 1):
PA0/XTAL1
PA1/XTAL2
PA2/RESET
PD0/RXD
PD1/TXD
PD2/INT0/XCK/CKOUT
PD3/INT1
PD4/T0
PD5/T1/OC0B
PD6/ICP

Bottom pins:
PB0/AIN0/PCINT0
PB1/AIN1/PCINT1
PB2/OC0A/PCINT2
PB3/OC1A/PCINT3
PB4/OC1B/PCINT4
PB5/MOSI/DI/SDA/PCINT5
PB6/MISO/DO/PCINT6
PB7/USCK/SCL/PCINT7

12 13 14 15 16 17 18 19

X1 X2 Y1 X4 Y4 X3 Y3 Y2

Sensor

4,7k — +5V

DS18B20
VCC 21.0
DQ
GND

DS

Markers

470 — +5V

LED YELLOW