A13: Parallel Resistors

1001-act13 Introduction to Electronics

Summary

There is another way to arrange components other than series, which is just connecting them in a continuous string, called parallel. In parallel, the components are connected side by side hence the name. In this activity, you will once again modify the basic LED circuit to have more resistors, only this time they will be connected in parallel.

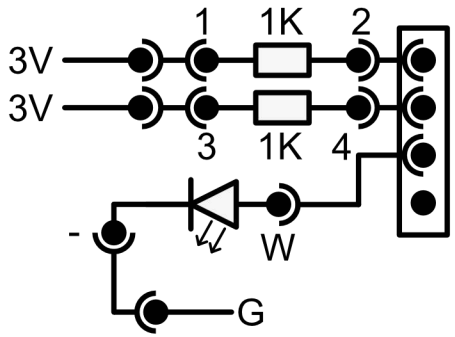
What You Need

- JackBord
- JackBord TOP
- 10x 10cm Jumpers

Instructions

1. Making this circuit is simple. First, make sure that the JackBord TOP is already connected to the JackBord power pins and the two power LEDs are on (Check 1001-act5 if not). Turn off the JackBord.
2. Create the circuit from act6 and observe the brightness of the LED. Having done so, disassemble it and continue from step 3.
3. Take one jumper and connect any 3V pins on the TOP to pin 1 of the 1K resistors. Do this again for pin 3 of the 1K series.
4. Connect pin 2 of the 1K resistors to USER pin A1 and pin 4 to USER pin A2.
5. Now connect USER pin A3 to pin W on the TOP, corresponding to the white LED.
6. Finally, use one more jumper to connect the corresponding '-' pin to one of the green ground pins on the TOP.
7. If done correctly, the white LED should turn on but be brighter than the single resistor version when you turn on the JackBord. This is because the overall resistance has been decreased. If it does not, check your connections and follow the steps again. Also compare your circuit to the pictures shown right.

Circuit Diagram



TOP 3V pin	1K resistor pin 1
TOP 3V pin	1K resistor pin 3
1K resistor pin 2	User pin A1
1K resistor pin 4	User pin A2
User block pin A3	TOP LED pin W
TOP LED - pin (Corresponding to white LED)	TOP Ground rail

The table above contains the connections in the circuit diagram. Simply connect a jumper from the left column pins to the corresponding right column pin in the same row.

Completed Circuit