LED Rainbow

Summary

In this project you will utilise all five LEDs on the TOP to create a rainbow. With proper commands, you can even make it pulse in sequence.

What You Need

1x	JackBord	1x	JackBord TOP
10x	Female-Female Jumper		

Note: It is assumed you have already connected the TOP to the JackBord. If not, please refer to the **Using the JackBord TOP** guide, or activity **1001-act5**.

Instructions

1. Using five jumpers, connect port A pins 1 through 5 to the five TOP LEDs from red to white. Pin A1 to red LED pin R, A2 to green LED pin G etc.

2. Connect the - pins of all five TOP LEDs to the green ground pins on the TOP.

3. To turn on all of the LEDs run the **aon** command. When you do, all of the LEDs in the rainbow light up as shown right. To turn them off run the **aoff** command.

4. To get the rainbow to flash, a more complicated command chain is required. Daisy-chaining is where the pipe '**|**' character is used to run multiple commands at once despite using only one command.

   Run the commands shown and see what happens:

   ```
   aoff|a1 1|d250|a2 1|d250|a3 1|d250|a4 1|d250|a5 1
   ```

   When you run the command, the rainbow's LEDs should turn on in sequence.

Circuit Diagram
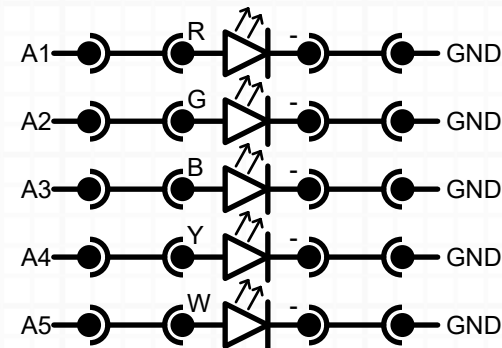
Port A pin 1	TOP LED pin R
Port A pin 2	TOP LED pin G
Port A pin 3	TOP LED pin B
Port A pin 4	TOP LED pin Y
Port A pin 5	TOP LED pin W
TOP LED pin -	TOP Ground
TOP LED pin -	TOP Ground
TOP LED pin -	TOP Ground
TOP LED pin -	TOP Ground
TOP LED pin -	TOP Ground

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